Vitu: The Journey Towards Indigenizing Sustainable Entrepreneurship

by

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ABSTRACT

The crafting of cultural goods and ethnic arts have been stable means for making a living within many Indigenous communities throughout the world. In order to understand how crafting can be an avenue towards sustainable entrepreneurship, an analysis of the relationships between Indigenous crafting, Indigenous community life, sustainable agency, Indigenous concepts of wellbeing, and sustainable entrepreneurship is needed. Through three-papers focused on an extensive literature review (aggregate to all three papers) and ethnographic field research (semi-structured interviews, verbal surveys, and ethnographic observation) this dissertation examines how the act of Indigenous crafting as carried out by individuals within families and by families within Indigenous communities, link with social relationships, making a living, gender roles, and cultural identity and how these aspects of community life intersect with sustainable forms of agency, Indigenous concepts of wellbeing, and small-scale social entrepreneurial activities in the context of Indigenous crafting in a bid to indigenize the concept of sustainable entrepreneurship. This dissertation proposes a series of conceptual frameworks that depict the discussed linkages between Indigenous crafting, Indigenous community life, sustainable forms of agency, sustainable livelihood, and Indigenous concepts of wellbeing, in the context of sustainable entrepreneurship along with the relevant literature associated with each element in the frameworks. This dissertation draws from a qualitative ethnographic study on Mazahua artisans and their communities in Mexico in an attempt to understand and expand sustainable entrepreneurship

from Euro-Western perspectives to Indigenous perspectives in order to better apply SE concepts in the development of an Indigenous fashion goods venture called Vitu™. This Indigenous venture, through the Indigenized sustainable entrepreneurship concept of Adaptive-Transformative Agency, will more deeply address justice, equity, and inclusion for Indigenous peoples and their communities pursuing community development through entrepreneurial activities.

DEDICATION

This work is dedicated to my wife and family for

without their support and encouragement

this would not have been possible.

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PREFACE

This dissertation titled “Vitu: The Journey towards Indigenizing Sustainable Entrepreneurship” is the product of nine and a half years of study in the School of Sustainability at Arizona State University from 2012 to 2022 while also working full time with family responsibilities. This dissertation research study is based on four and a half months of dedicated time living and doing field research in Toluca Mexico from March to August 2019. The writing of this dissertation was done between September 2019 to January 2022. My research topic was inspired by my first research trip to Toluca Mexico in May 2011 when I was introduced to the Mazahua community of artisans in the town Loma de Juarez in the municipality of Via de Allende. After a tour of the community and the economic poverty experienced by the women artisans, the leading man and leading woman of the community asked me if it were somehow possible to sell their artisan’s crafts on the global market. At that time, I had just returned from Ghana Africa where I toured the Global Mamas cooperative which was founded in 2003 and known for its efforts to bring Indigenous women’s handcrafted products to the international market. I told the leading man and the leading woman that yes, it was very possible to find a way to create Mazahua crafts that would have a global appeal and that we could potentially follow what others like Global Mamas have done. I then asked the leading man what were the main issues and or problems the community faced beyond the lack of financial income and one of the first things he mentioned was their fear that the community was losing their culture specifically their language as many of the younger women chose to speak Spanish instead of their native tongue Jñatrjo (pronounced hñatho) because it was easier to get work outside of the community. The leading woman then proceeded to show me the beautiful underskirts “*mbox kiezhe”* in Jñatrjo or *“enagua”* in Spanish which are heavy embroidered fabrics in rich colors of wool yarn with various animal motifs. She told me that many of the younger women do not know how to make these skirts anymore and that these traditional crafts were at risk of one day disappearing. It was at that point that I decided to commit myself to learn as much as I could about Mazahua women artisans to find a way to preserve their culture (language and crafts) while also providing a way for the women artisans to improve their family incomes.

CHAPTER 1

INTRODUCTION

Positionality Statement

John Hiroomi Takamura Jr. is an Associate Professor of Industrial Design in The Design School within the Herberger Institute for Design and the Arts at Arizona State University (ASU) as well as a doctoral candidate in the School of Sustainability at ASU. John has had a long career as a practicing Industrial Designer and brand development strategist prior to his academic career as a professor. John is a Japanese-American who grew up in Honolulu, Hawaii where he was immersed in the melting pot of local Hawaiian cultures and traditions (Indigenous Hawaiian, Japanese, Chinese, Filipino, and Portuguese). John is bilingual in both English and Japanese and has lived and practiced Industrial Design in Japan for ten years of his seventeen-year career as a designer. He received his Bachelor's degree in Design from the University of California Los Angeles and his Master's degree in the Science of Design from ASU. In addition to teaching product design at The Design School, John has taught *Entrepreneurship for Native American Sustainability* for five years in the American Indian Studies program at ASU. John's background in social entrepreneurship through product design-based venture development is the foundation from which he builds his research. John's research interests focus on social sustainability, sustainable entrepreneurship, and Indigenous arts and crafts where his research is informed by a commitment to culture and language preservation through entrepreneurial activities and venture creation. His love and appreciation for indigenous arts and crafts in combination with his experience in product and brand development drive his passions in sustainable community development and guide his perspectives regarding sustainable entrepreneurship as a means of poverty alleviation.

Introduction

As more Indigenous peoples begin to take on the challenges of sustainable community development for themselves through their entrepreneurial activities, more research into the effects of sustainable entrepreneurship on human rights will be needed to protect the Indigenous

innovations that these entrepreneurial activities produce. Additionally, such research will be needed to study how to more effectively apply sustainable entrepreneurship to Indigenous livelihood and wellbeing with respect to the social, cultural, and economic factors focused on poverty alleviation that may be specific to Indigenous peoples and their communities and how these factors affect their economic, social, and environmental rights. The inclusion of economic and social rights within the domain of overall human rights brings to attention the issues of agency, livelihood, and individual/community wellbeing especially within the context of Indigenous peoples living at the base of the economic pyramid. Indigenous rights and agency, livelihood and wellbeing specifically come to the forefront when Indigenous communities, through self-determination, decide to create innovative value through sustainable entrepreneurial endeavors. As these concepts are rooted in Euro-Western perspectives, effective community development requires a way to view the concepts of agency, livelihood, and wellbeing from an Indigenous perspective so that Indigenous communities, researchers, and government/non-government organizations can more seamlessly work together through sustainable entrepreneurship. In short, what is needed is a way to *indigenize* sustainable entrepreneurship so that Indigenous communities can begin to embrace what it has to offer regarding the assurance of agency, livelihood, and wellbeing on both an individual and community basis as well as to help researchers and outside organizations to better co-create and co-develop Indigenous communities towards more sustainable outcomes. As Indigenous peoples begin to understand the benefits of sustainable entrepreneurship, they will be able to better sustain their pursuits of Indigenous agency, Indigenous livelihood, and Indigenous wellbeing and as outside researchers and organizations begin to understand Indigenous worldviews in the context of sustainable entrepreneurship, they will be able to better approach community development from a pre-colonial and decolonized perspective.

The journey to understanding sustainable entrepreneurship begins with the concept of social entrepreneurship. Social entrepreneurship, as concisely defined by J. Gregory Dees in his groundbreaking article *The Meaning of "Social Entrepreneurship",* is a term that "…combines the passion of a social mission with an image of business-like discipline, innovation, and

determination commonly associated with, for instance, the high-tech pioneers of Silicon Valley" (Dees, 1998, pg. 1). Here, the author basically describes social entrepreneurship as a means to self-determination through a social mission driven by innovation. In the context of sustainable development of communities, social entrepreneurship takes on an even broader definition encompassing concepts of social sustainability and social innovation otherwise known as *Sustainable Entrepreneurship*. Tilley and Young (2006) define sustainable entrepreneurship of the multitude of variables in its interrelationship with social entrepreneurship, economic entrepreneurship, and environmental entrepreneurship and contend that the route to sustainable development is not based on any one social, economic, or environmental perspective or foci but rather on their sum.

This dissertation through the research and analysis of Indigenous artisan petty-commodity producers and their crafts investigates the sum of the social, economic and environmental variables specific to the production of Indigenous crafts as a sustainable entrepreneurial activity and its relationship with sustainable livelihood and Indigenous wellbeing. The results of this study will be used to create a native or Indigenous people owned and operated sustainable entrepreneurial venture in Mexico for the Mazahua Indigenous culture. This fair-trade fashion brand venture called Vitu™ will eventually serve as a social enterprise to help alleviate Mazahua poverty as well as to positively impact Mazahua society regarding Mazahua language and culture preservation. This introduction chapter will begin with a look at the Mazahua Indigenous peoples of Mexico focusing on their history of inequity, their historical social organization concerning household life, their current status as Indigenous communities at the base of the economic pyramid in Toluca Mexico, and an analysis of their particular community environments and institutional arrangements. This chapter ends with a description of the types of Mazahua crafts produced in the communities and some concluding points.

Mexico's Indigenous People of the Mazahua

The Mazahua are known as the 'deer people' that some historians theorize as having Aztec origin through the Aztec word for deer '*mazatl*' (Perez & Gubler, 1996). The Mazahua are a

people of the Otomian linguistic family who live in the western region of the State of Mexico estimated as occupying some of the adjoining territory of Michoacan in Mexico (Fenton, 1959). The Mazahua region has about 13 municipalities (Serrano Barquin et al., 2011) located in a 3723 Kilometer area (Perez & Gubler, 1996). Perez & Gubler (1996) report that;

> "According to the 1990 census, there are 127,826 Mazahua speakers over the age of 5; 68,070 are women, and 59,756 are men. Of the total, 114,294 live in the state of México, 3,007 in Michoacán, 7,864 in the Federal District, and 444 in the state of Chihuahua; the rest are dispersed over the remaining areas of the country." (Perez & Gubler, 1996, pg. 164)

The 2010 census data reports the Mazahua speaker population at about 136,786, which is up 8,960 Mazahua speakers in the 20-year period since the Perez & Gubler (1996) data indicating a 6.55% 20-year population growth rate. Although Indigenous language speaking may be an inaccurate way to identify exact numbers of the population who identify themselves as Mazahua, these figures stand as the current Mazahua census data. According to Ruis, Icaza, & Márquez (2011), the total Mazahua population is estimated at about 350,000 which is contrary to 2010 Instituto Nacional de Estadística Geografía e Informática (INEGI) census data placing the Mazahua population at about 223,458 (over 125,000 less). These discrepancies in Mazahua population size may be due to the discrepancy between the reported numbers of Mazahua municipalities from 13 to 21 depending on the source.

The Mazahua are a proud people with a rich culture tied to their lands and ethnic heritage and because of that, from a Western perspective, seem to have one foot in the past and one foot in the present although the Mazahua do not necessarily make this temporal distinction. The Mazahua can be seen as an Indigenous people faced with the choice between preserving their socio-cultural identity and choosing a modern technological lifestyle (Iwańska, 2006).

Mazahua History of Inequity and Colonization

According to Perez & Gubler (1996), the Mazahua were subjugated by the Aztecs then later in the colonial period were further subjugated into colonial Indigenous forced labor and even after the 1810 independence of Mexico, continued to be marginalized having their Indigenous communal lands expropriated by large estate owners (Perez & Gubler, 1996). Additionally with respect to gender inequity, Tice (1995) states that colonialism and the introduction of capitalism was also responsible for destroying the relative symmetry of the Aztec gender division. Only after the Mexican Revolution of 1910 did the Mazahua have their lands returned to them in the form of what was called 'ejidos' or small portions of land that later in the 1930s were apportioned as tribal subsistence lands (Perez & Gubler, 1996). Perez & Gubler (1996) state that it was the *ejidos* that "set the stage for a mixed economy" where Mazahua were simultaneously subsistence food producers, product consumers, and low-wage seasonal laborers. Understanding the historical background of social, economic and environmental inequality experienced by the Mazahua is essential to developing a level of mutual trust and respect in the creation of any joint venture with the community. It is because of the long history of inequality and colonization experienced by the Mazahua that the Indigenous rights based on the key articles of the U.N. Declaration on the Rights of Indigenous Peoples should be the foundation on which any relationship is built as these rights were designed to protect Indigenous cultures and lands. Cavanagh & Mander (2002) highlight the key Indigenous peoples' rights of self-determination (article 3), right to develop distinct identity (article 2), right to revitalize cultural traditions (articles 11 & 13), right to develop economics systems (article 5), right to maintain spiritual relationships with nature (articles 12 & 25), and the right to own cultural and intellectual property (article 31) as just some of the Indigenous rights set forth in the U.N Declaration. Articles 2, 3, 5, 11, 12, 13, 25 and 31 of the United Nations (2008) Declaration on the Rights of Indigenous Peoples should be the foundation for the 'social' aspects of the proposed social entrepreneurial venture for Mazahua artisans. As an added security measure in light of the concerns presented by Speed & Collier (2000), regarding the misuse of Indigenous Rights in Mexico as a new form of colonialism, special care must be taken in dealing with any government agency or institution. Where possible Mazahua artisans must be involved in decision-making meetings concerning the fashion goods venture to

ensure tribal interests are fully represented. As Speed & Collier (2000) state, 'the aim is not to impose a "western" conception of human rights on Indigenous peoples' and that the goal is to create a "pluricultural" legal system that recognizes and respects cultural differences' (pg. 904). Escobar (2017) in his book titled "Designs for the Pluriverse" proposes a *pluriverse* characterized by an "ethical and political practice of alterity that involves a deep concern for social justice, the radical equality of all beings, and nonhierarchy" (pg. xvi). Escobar (2017) goes on to state that every community needs to practice designing itself with the goal of developing a "life-enhancing regional" pluriverse. In short, Escobar (2017) poses a future where communities in the Global South like that of the Mazahua strive to eventually co-design their communities in ways indicative of a pluricultural pluriverse where the communities collaborate with others to protect and redefine concepts of wellbeing, projects, environments, and local economies (pg. 7).

A human or in this case Indigenous rights-based approach to Mazahua community development is critical in ensuring that inequality and inequities are addressed during the process for those marginalized or disenfranchised Mazahua communities of practice within the greater Mazahua social-ecological system. Sen (1999) discusses human rights with respect to "development as freedom" and places emphasis on "ends" (outcomes) rather than "means" (processes). Sen (1999) goes on to state that:

> "Development requires the removal of major sources of Unfreedom: poverty as well as tyranny, poor economic opportunities as well as systematic social deprivation, neglect of public facilities as well as intolerance or overactivity of repressive states." (Sen 1999, p. 3)

Sen (1999) furthers that "sustainable agency" is the major driver for development and sees the reasons for centralizing on "freedom" first and foremost because progress must enhance freedoms and second that development is dependent on the "free agency of people" (pg. 4). Sen (1983) poses that the deficiency of traditional development economics lies in the fact that it has placed emphasis on "national product, aggregate income and total supply of goods" rather than

on “entitlements” which he defines as the “set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces” (pg. 754). Turner et al (2003) furthers that these entitlements are determined by what the individual sells, their ability to sell their wares, and the price they are able to get for their wares. This alternate conceptualization is especially important when framing this research on Mazahua artisan petty-commodity producers who rely on the sale of their traditional crafts as outside income from their agricultural and livestock activities.

Mazahua Households

Regarding social organization, Perez & Gubler (1996) state that Mazahua who live in extended families within households, *compadrazgo* or co-parenthood develops a sense of mutual help and community service that unite individuals, providing them a sense of belonging and duty. Although Mazahua do not have legends about prominent individuals due to the fact that they value the social role of the individual rather than individual personal attributes (Iwańska, 2006), it may be assumed that certain traditional activities like one’s skill in weaving could represent an individual’s social value or status as an artisan (Chandler, 2008).

Historically, the social activity of weaving was approved by the Aztec religious sector because it was symbolic of the values of the three deities Tlazolteotl, Xochiquetzal and Mayahuel that represented the domestic and reproductive functions of women (Cano, 2011). Regarding the spiritual nature of weaving, Granziera (2004) states that “spinning and weaving were women's work in Aztec society but spinning also represents life, death and rebirth in a continuing cycle that characteri[z]es the essential nature of mother goddess” (pg.254). Cano (2001) also notes that historically weaving in the Aztec culture was a group effort that encouraged women to socialize on a daily basis exchanging folklore, gossip and jokes. From a neo-liberal capitalist perspective, Meso-American weaving can be seen as the cultural expression of feminine spiritual capital interwoven with social capital by the lower ranking women in society. Concerning Mazahua division of labor in the fabrication of textiles even today, women are responsible for tending sheep, carding sheep’s wool, and weaving while men do other textile related tasks (Perez &

Gubler, 1996). The central role of women in craft production is critical because this research is focused on providing alternatives for Mazahua women in the development of a fair-trade line of Indigenous handmade fashion products targeting middle-class American women with disposable cash. In developing this social entrepreneurial venture, it is important to study Mazahua cultural practices regarding their textile production on the household level.

Mazahua Communities

The Mazahua communities that participated in this study were in the municipality of Villa de Allende in the towns of San Felipe Santiago and Loma de Juarez, the municipality of Valle de Bravo in the town of San Antonio de la Laguna, and the municipality of San Felipe del Progreso in the town of Fresno Nichi. The community of San Felipe Santiago was set up as a base camp for the study in which deep ethnographic immersion took place. The communities of San Felipe Santiago and Loma de Juarez consist of an estimated 12,000 people spread out over the entire LaJoya region in Toluca Mexico as part of the greater Mazahua community of an estimated 136,786 individuals in the State of Mexico (INEGI 2016). Only a small number of Mazahua artisans from each of the municipalities participated in this study based on word of mouth and the current relationships built with the leading woman of each community.

Mazahua Economic and Livelihood Context

Mazahua communities would be considered BoP or Base of the Economic Pyramid communities where individuals make only about $1-5 U.S dollars per day. Referencing the Rangan, Chu & Petkoski (2011) Base of the Pyramid income segmentation, this would categorize Mazahua as falling within the *Subsistence* ($1-3 per day) to *Low Income* ($3-5 per day) levels. Mazahua communities are currently looking for other means to financially support themselves, as they are primarily an agrarian community relying on subsistence farming and manual labor. The community of Loma de Juarez for example, wish to find some way to increase the sales of their traditional stitching crafts on a broader market due to their general lack of income from farming on their relatively smaller plots of land (Independent research study).

According to Hewitt de Alcántara (1984), although the government in the 1970s gave Mazahuas similar amounts of lands to that of non-Indian peasant communities, due to their lack of ethnic acceptance in the broader Mexican society Mazahuas "…could not participate in politics except through the medium of Indian caciques; language barriers kept their children out of school; and lack of alternative sources of income contributed to a fragmentation of family holdings which in the end made farming, without the supplementary income obtained from seasonal migration, an untenable enterprise" (pp. 171-172). In other words, Mazahua not only suffer from a lack of cultural acceptance in mainstream Mexican society but suffer from the lack of political involvement as well as economic alternatives for income.

INEGI (2016) reports that Mexican rural annual incomes average around 26,004 pesos which translates to about $3.70 USD per day and is half of the income in urban areas. In the state of Michoacan (where some Mazahua reside) rural incomes average about 25,326 pesos which translates to about $3.60 USD per day and is slightly lower than the national average (INEGI, 2016). Regarding the economic contribution of livestock and its impact on Mazahua livelihood, Arriaga et al (2005) concludes that the main species of animals kept by households are chickens, donkeys, sheep, turkeys, and cattle (pg. 827). Arriaga et al (2005) goes on to state that in addition to mules and horses some households also keep domestic animals like rabbits, ducks, pigeons, or pigs (pg. 827). Regarding herd size of larger animals like cattle, mules, and horses, Arriaga et al (2005) states that this is determined by the supply and availability of household maize straw which is harvested from their fields (pg. 828). The number of smaller animals vary from household to household due to individual access to animal vaccinations and the types of predators in the region (pg. 830). Arriaga et al (2005), reports that sheep are valuable to the household in providing economic stability since they can be bought, sold, and maintained with small amounts of feed stocks on the common lands and are the responsibility of women, children, and the elder women of individual households (pg. 833). San Felipe Del Progreso was chosen as one of the communities in this research due to its higher levels of economic poverty. According to Fajardo (2011) the community of San Felipe Del Progreso, north of Toluca is considered one of the poorest Mazahua communities. Fajardo (2011) states that 95% of the farmers in this

municipality have the resources to conduct their agricultural activities but only 37.6% have their own animals for plowing their fields (pg. 62). Regarding Mazahua household welfare, Hryciuk (2017) states that “the survival and wellbeing of households, the condition of local communities, investments in infrastructure, etc. depend on two factors: first and foremost money transfers, both from local migrants (with Mexico City as the main destination) and from abroad, and, increasingly, funding and other forms of support (apoyos) available through development and social assistance programmes” (pg. 527).

Mazahua Community Environment Context

Mazahua communities exist in a geographic area of 3723 square kilometers or approximately 72,300 hectares (Perez & Gubler, 1996). Altitudes range from 2760 to 2870m above sea level in this sub-humid climate with an annual mean rainfall of about 800mm from June to September with most of the rain falling in July and August (Fajardo 2011, Arriaga-Jordán et al. 2005). Fajardo (2011) also states that this low unreliable rainfall means that Mazahua subsistence agriculture taking place in these communities is conducted in water restricted areas that influence their land management decision making.

The primary resource unit types are the local streams and community water reservoir sources mainly used for washing clothes, bathing, cooking, home gardening, small freshwater fishery and farming. The secondary resource units are the grasslands mainly for sheep grazing and farming with native grass species such as *navajita (Bouteloua hirsuta), trevi (Muh- lenbergia rigida)*, and “rough” grass (*Sporobolus poiretii*) (classified as excellent, intermediate, and poor in nutritive value for animals), forest trees (fuel, building materials) (Arriaga-Jordan et al. 2005, p. 838). The tertiary resource units are the local non-domesticated plants and seeds used for crafts and individual household gardens. The common tree types are Pine, Cedar, and various fruit trees (such as *ciruela* (plum) (*Prunus domestica L.*), *capulin* (cherry) (*Prunus capuli Cav.), durazno* (peach) (*Prunus persica L.)* or *manzanas* (apple) (*Malus domestica Bork*) (Fajardo, 2011, p. 144).

Regarding resource use, Mazahua farmers no longer have large commercial farms and most maintain smaller farms for subsistence. Average farms are estimated at 3 hectare per family and require modest amounts of water from public resources primarily relying on rainfall (Fajardo, 2011). Water resource use, although modest, has been systematically restricted throughout recent history much having to do with the systematic marginalization of Indigenous peoples in the country. In pre-colonial times Indigenous cultures viewed water as a divine gift from the gods free of charge enabling free access to water (Ávila-García, 2014). Collective water use and management helped to define "territorial links of belonging and identity" (Ávila-García, 2014, p. 4). Indigenous peoples viewed lakes as sources of both material and spiritual assets however during the colonial period the Spaniards viewed them as sources of disease hence leading to the control strategies responsible for their desiccation through drainage to other watershed basins (Ávila-García, 2014). Today, the State government "ignores" Indigenous peoples' water rights while supporting new forms of individual rights from individual water rights to public and private water management (Ávila-García, 2014). According to Ávila-García (2014), the State government promotes the idea that water is an economic good which has a market value and price. Ávila-García (2014) explains that this line of thinking disassociates or omits the socio-cultural dimensions of water and threatens Indigenous perspectives and traditional sustainable water use and management practices. This disassociation has led to grassroots efforts to promote advocacy efforts within Mazahua communities.

On September 15th 2004 Mazahua women banded together to form the *Zapatista Army of Mazahua Women for Water Defense* (Ejército Zapatista de Mujeres Mazahuas en Defensa del Agua) as a means to defend the water rights of the people (Araujo et al. 2011). These Mazahua women organized marches, demonstrations, and a symbolic takeover of the Cutzamala System that eventually led to the realization of certain demands as "band-aid measures" (Ávila-García, 2014). These measures were insufficient in relation to the fact that no compensation was ever made to the Mazahua communities for the benefits seen by the residents in Mexico City from the diversion of Mazahua resources. The primary, secondary, and tertiary resources of the Mazahua

can be seen as central to the Mazahua social ecological system and the center of their vulnerabilities.

Mazahua Institutional Analysis of Vulnerability

In order to better understand how vulnerable Mazahua communities are situated within the institutional arrangements of their social ecological system (SES), an institutional analysis is needed. Because the research data collection on Mazahua artisans was limited to only three municipalities (Villa de Allende, Valle de Bravo, and San Felipe del Progreso), the institutional analysis of these communities is based on series of separate published research studies done on Mazahua Indigenous peoples in the region ranging in topics from environmental legal dispositions to traditional knowledge (Guzmán-Mendoza & Alejandro-García, 2011), livestock agro-diversity (Arriaga-Jordán et al. 2005a), economic influences of livestock diversity (Arriaga-Jordán et al. 2005b), land management and livelihoods assessment (Fajardo et al. 2016, Fajardo 2011), and water conflicts, human rights and gender (Avila-Garcia 2014, Weaver 2011, Araujo et al 2011) in support of the field research that was conducted. In order to support the institutional analysis, additional scholarly articles regarding Mazahua social organization (Paradise & De Haan 2009), social marginalization (Hernández 2012), and traditional vs. governmental institutional arrangements (Palerm-Viquiera & Montes 2011) have been used. The *Robustness Model* (Anderies, Janssen & Ostrom 2004) was used because it views institutions in context to the interrelationships between its four sections of Resource, Resource Users, Public Infrastructure Providers, and Infrastructure. These interrelationships break down into eight components (*harvesting rate, strategic factors, investment, resource impact, feedback structure, co-production, bio-physical disruptions, and socio-economic changes*) that form the inputs and outputs of the system.

The Mazahua region can be seen as a “complex non-decomposable and open system” based on the interactions within both the natural and socio-cultural sub-systems (Serrano Barquín, 2011). Serrano Barquín (2011) goes on to state that the Mazahua Region Complex

System (SCRM) and the communities that exist within it act as elements in the system; the interactions or links of which can be considered as the flows between the elements. Such links and flows, as Serrano Barquín (2011) suggests, influence each element positively or negatively regarding disruptions. According to Anderies, Janssen & Ostrom (2004), social ecological systems that are linked form complex multi-layered adaptive systems that are often “embedded in larger systems.” The authors further state that the Robustness model is particularly useful in analysis when communities have contributed to the infrastructure to cope with both internal and external disturbances. For example, the current water restrictions and poor rainfall which plague Mazahua communities.

Lowered water usage (what the Robustness Model refers to as Harvesting Rate) is evident throughout the Mazahua region. This is due to a multitude of Public Infrastructure influences and the overall amount of resources naturally available. Climate change (what the Robustness Model refers to as Biophysical Disruptions) has contributed to a general lack of rainfall in the region and the increased resource demand in the surrounding densely urban areas (Mexico City & Toluca Metropolitan). This has led to Public Infrastructure reductions (what the Robustness Model refers to as Resource Impact) in resource levels through restrictions on Mazahua water access to provide the urban area with more water.

Mazahua land use (Harvesting Rate) is modest because it is subject to severe soil degradation from maize farming, soil erosion due to steep slopes, severe drought, and frosts (Biophysical Disruptions) according to Fajardo (2011). Public Infrastructure strategies such as government subsidies for chemical fertilizer (what the Robustness Model refers to as Strategic Factors) can impact land resource use provided farmers can afford them however due to the low fluctuating incomes of most Mazahua farmers (what the Robustness Model refers to as Socioeconomic changes) they rely on animal manure but are limited by the numbers of animals they own to provide it (Fajardo et al, 2016).

There are many strategic factors that impact the linkages between Mazahua resource users and the Public Infrastructure Providers in the Mazahua region, the most controversial of which lie in the reduction of indigenous water rights and the marginalization of resource users. The Municipal and State government's strategy (Strategic Factors) to build and support the hydro-electric dams in the rural region to supply the urban population clearly "ignores" the needs of Mazahua communities in maintaining their livelihoods forcing the Resource Users (most notably Mazahua women) to form strategic alliances in defense of indigenous rights. In a similar way, Public Infrastructure Provider strategies (Strategic Factors) such as the PROCEDE program (Program for Certification of Rights to Ejido Lands) have empowered Mazahua women as landowners, elevating them to the position of resource managers. Additionally, the increase in male migrant farmers in search of alternate forms of income (Socioeconomic Changes) have also empowered women to take on the role of family head with the responsibilities to make land management decisions for the family.

Regarding the Mazahua region and its water infrastructure, Serrano Barquin et al. (2011) state that the Cutzamala water system is one of the largest water sources for Mexico City with its 8 cubic meters per second capacity. The Cutzamala water system was developed to provide hydro-electric power and water to Mexico City and extracted water from the basin at a rate of provide 19,000 liters per second through the Tuxpán and El Bosque dams in the Michoacán State, the Villa Victoria, Valle de Bravo, Colorines, Tiloxtoc and Chioelesdo dams, and from the Malacatepec river in the Mazahua region in the State of Mexico (Araujo et al. 2011). Weaver (2010) states that the Cutzamala water system has dried up Mazahua rivers and prevents the community from building aqueducts to support their daily livelihoods (domestic water use, farming, and animal husbandry) in order to provide water to Mexico City's residents. According to Canez-Gonzalez et al. (2015), the Cutzamala Water System provides 15 cubic meters of water per second to Mexico City's 21 million residents and contributes about 24% of the total water to the city (the rest coming from ground water aquifers at 68% and the Lerma System at 8%).

Robustness, although similar to *Resilience*, "measures the amount of change or disruption that is required to transform the maintenance of a system from one set of mutually

reinforcing processes and structures to a different set of processes and structures" (Anderies, Janssen, Ostrom 2004). The institutional analysis of Mazahua communities revealed the historical as well as contemporary issues (i.e. changes and disruptions) that have kept these communities in a state of vulnerability. Governmental policies and governance decisions have continued to marginalize Mazahua communities in terms of their basic rights in spite of efforts to mobilize and voice their opposition to the state. The future robustness of Mazahua SES will rely on continued research that focuses on the governance decisions that enhance the resilience of the ecosystem while producing viable goods and services for the communities that consume them. Some of these produced goods could be based on Mazahua ethic arts and handcrafts.

Mazahua Craft Production

Mazahua artisans of Toluca Mexico are currently producing intricately designed woven sashes and embroidered underskirts. Mazahua woven sashes called "*mbuthrhu"* in the Mazahua Indigenous language of Jñatrjo (pronounced hñatho) or *"faja"* in Spanish are of the most difficult crafts to produce due to their specific process technique called *telar de cintura*. These sashes are about 10 cm in width and 115 to 127cm in length with a medium loop stitch, take about 3-months to complete, and are priced at around $100 USD. Embroidered underskirts called "*mbox kiezhe"* in Jñatrjo or *"enagua"* in Spanish are about 300 cm x 30cm with large loop stitches in the *punto de cruz* and *trenzado* techniques and take about 6 to 8 months to complete. The average price of an underskirt is around $250 USD. The artisans also create other articles like crochet ponchos, embroidered tablecloths, and small accessories using their specific Mazahua cross-stitch that looks like bird tracks ranging in prices from $2-$3 to $40 USD depending on the complexity of its design. As the sale of these crafts is irregular the income for artisans varies and artisans may lower their asking price just to make a sale. Mazahua crafts are produced both for sale as a business to outside customers as well as for personal household consumption.

Conclusion

Mazahua artisan petty-commodity producers in Mexico face many challenges within their SES but how successful they are in meeting those challenges depends on the sum of the social, economic and environmental variables specific to production of their Indigenous crafts as a sustainable entrepreneurial activity. A look into the history of inequity and colonization faced by Mazahua communities helps set the context of the severe poverty they still face today. Looking into the present institutional arrangements of Mazahua communities helps to see how vulnerable these communities are currently situated within their SES especially concerning their continued exploitation regarding their water rights and their political voice. Going into the future, Mazahua success depends on how their sustainable entrepreneurial activities influence their general household livelihood, their concepts of wellbeing (both household and individual), their communities, and their environments. As stated earlier, sustainable entrepreneurship can be seen as the interrelationships between social entrepreneurship, economic entrepreneurship and environmental entrepreneurship and how these interrelationships impact or link with basic human rights-- more specifically Indigenous rights and agency regarding Mazahua artisans and their communities with the ultimate goal of what Sen (1999) refers to as a kind of “sustainable agency.” This research explores the act and process of Mazahua crafting and how these entrepreneurial activities link with how Indigenous artisans make a living from their crafts, how these activities influence their community life, and how these activities fit into sustainable community development through sustainable entrepreneurship. This research looks at how the act and process of crafting is intertwined with Indigenous perspectives of the concepts of livelihood and wellbeing resulting in a proposed conceptual triad of Indigenous crafting, sustainable livelihood, and Indigenous wellbeing in an attempt to indigenize the concept of sustainable entrepreneurship so that it can be better understood and applied by Indigenous artisans as they take on deeper roles in the sustainable development of their communities through the distribution and sales of their crafts. The Indigenization of sustainable entrepreneurship continues the efforts to ensure justice relating to Indigenous rights and agency, equity regarding Indigenous livelihood, and inclusion specifically of Indigenous perspectives and worldviews on wellbeing.

The following three essay papers presented in this dissertation begin the effort to more deeply understand Indigenous perspectives regarding Indigenous artisan life worlds in their ethnic craft production, Indigenous artisan views on sustaining livelihood through crafting, Indigenous pre-colonial cosmological world views of agency, wellbeing, and entrepreneurship, and Indigenous artisan community life and their point of view on the social, economic, and socio-economic aspects of ethnic crafts as petty-commodity producers.

CHAPTER 2

PAPER ONE

Vitu: The Linkages between Indigenous Crafting, Indigenous Wellbeing, and Sustainable Livelihood

Abstract

In order to achieve Indigenous artisan community development through sustainable entrepreneurship, in depth research is first needed to understand Indigenous crafting's interrelationship with sustainable livelihood and Indigenous wellbeing as any community development intervention would affect these. This research investigates the linkages between the act and process of Indigenous crafting, Indigenous Wellbeing concerning spirituality and cultural identity, and sustainable livelihood regarding access to forms of capital. Additionally, this research aims to understand how Indigenous crafting impacts various forms of capital (financial, physical, human, natural, social/cultural, and spiritual) and how these capital impacts affect Indigenous wellbeing with respect to individual spirituality, cultural identity, buen vivir, and placethought resulting in a conceptual framework. This paper then presents the results of an Ethnographic study and the collection of qualitative data (ethnographic observations, semi-structured interviews, and verbal surveys) on Indigenous women artisan petty-commodity producers in four separate Mazahua artisan communities in three different Indigenous Mazahua municipalities in the state of Mexico. This research concludes with a summary of the research findings and discussions regarding how Indigenous Crafting, Indigenous Wellbeing, and Sustainable Livelihood link together and their inter-relational effects on each other both direct and indirect with the objective to indigenize sustainable entrepreneurship so that it may be more adaptable to how Indigenous peoples develop their communities through petty-commodity artisan craft production.

Keywords: Indigenous Crafting, Indigenous Wellbeing, Sustainable Livelihood, Indigenization

Introduction

Handcrafted ethnic arts, made and sold through small-scale entrepreneurial activities in local marketplaces, have been a stable means of income for many Indigenous peoples throughout the world. These handcrafted goods are a culmination of various forms of social capital. Though there are examples of artisan communities that have been successful in leveraging social capital in order to improve their economic wellbeing (financial capital), the potential risks to other forms of capital (human, natural, physical) involved in these small-scale entrepreneurial endeavors have not been well-documented. Additionally, the inclusion of spiritual capital has not been addressed with respect to Indigenous artisan small-scale entrepreneurial activity. Moreover, there are relatively few examples of empirical studies focused on livelihood capitals that are more inclusive of Indigenous worldviews of wellbeing like Buen Vivir, PlaceThought, Spirituality, and Cultural / Indigenous / Ethnic identity. This is important because the success of Indigenous entrepreneurial activities for crafting are influenced by the worldviews of Indigenous artisans and how these worldviews shape and inform their livelihood objectives and activities. This research proposes that the linkages between crafting, well-being, and livelihood are dependent upon the social-cultural objectives of the individual artisan and how these objectives collectively reflect the overall social-sustainability of the Indigenous communities in which they live. In other words, the connections between indigenous crafting, indigenous wellbeing, and sustainable livelihood are established by individual artisans and are deeply rooted in their individual social-cultural perspectives. Indigenous crafting therefore is not merely just a means of making a living, but more of a vehicle through which indigenous peoples can collectively have sustainable livelihoods. The linkages or connections between craft, livelihood, and wellbeing are studied in order to assess crafting as a sustainable “alternative livelihood” option (Coulthard, 2012) for Indigenous people through sustainable entrepreneurship. This research documents the linkages/connections between Indigenous crafting, Indigenous wellbeing, and sustainable livelihood through the inclusion of spiritual capital and Indigenous perspectives on wellbeing (Buen Vivir and Place Thought) with the objective to indigenize sustainable entrepreneurship so that it may be more useful for Indigenous peoples in developing their communities additionally contributing to the body of knowledge in sustainability.

As more Indigenous peoples take on the challenges of sustainable community development for themselves, more research into understanding the linkages between Indigenous crafting (Swain 1993, Tice, 1995, Little 2004, Cruz-Torres 2008), Indigenous wellbeing (Basso 1996, Corntassel 2003, Wills 2007, Gudynas 2011, Watts 2013, Walters & Takamura 2015), and sustainable livelihoods (DfID 1999, ILO 2010) becomes critical. Furthermore, such research will be needed to study how sustainable entrepreneurship affects Indigenous wellbeing with reference to the social, cultural and economic factors specific to poverty alleviation. This research aims to understand how Indigenous crafting impacts various forms of capital (financial, physical, human, natural, social cultural, and spiritual) and how these impacts affect Indigenous wellbeing in connection with spirituality, cultural identity and Indigenous interpretations of buen vivir and place thought in order to support Mazahua communities in their creation of a native or Indigenous people owned and operated fair trade fashion product brand venture in Mexico. Unlike artisan cooperatives which are mainly focused on the distribution and sales of crafts, the purpose of this fair-trade fashion product brand venture called Vitu™ will be to operate as a social enterprise to help alleviate Mazahua poverty as well as to positively impact Mazahua society by helping to revitalize Mazahua language and culture in terms of the making and usage of crafts (key social/cultural concerns of some Mazahua communities).

This social science research and fieldwork was based on answering the following general research query: How might sustainable entrepreneurship (specifically Indigenous entrepreneurship) positively affect human wellbeing (specifically Indigenous wellbeing)? Researching this basic query is essential in determining what impact sustainable entrepreneurship has on BoP (Base of the Economic Pyramid) community development within the context of poverty alleviation. Indigenous crafting is the central focus of this research and the objective of this study is to understand its inter-relationships (linkages) to Indigenous concepts of wellbeing and sustainable livelihood.

Research Questions

There are two main pathways of Indigenous crafting; crafting for household consumption and crafting for sale as a business. This research was based on the following two research questions. 1): In what ways does the act and process of crafting (social relationships, making a living, gender roles, creating, and capabilities) influence, enhance, or affect Indigenous wellbeing (Buen Vivir, Place Thought, Spirituality, and Cultural / Indigenous / Ethnic identity)?, and 2): In what ways does the act and process of crafting (social relationships, making a living, gender roles, creating, and capabilities + material harvesting, materials prep, designing, making, selling, etc.) influence or affect Indigenous livelihood (Natural, Physical, Financial, Human, Social/Cultural, and Spiritual capitals)?

The literature suggests that Indigenous wellbeing concepts center around spirituality (Wills 2007, Walters & Takamura 2015), cultural identity (Corntassel 2003, Anderson et al 2006), buen vivir (Gudynas, 2011, Giovannini, 2012, Albarrán González, 2020), and place thought (Watts 2013, Basso, 1996). The research assumption is that cultural identity may affect perceptions of social-cultural capital further establishing the linkage between Indigenous wellbeing and sustainable livelihood. Answering the first question will provide insights into how Mazahua artisans and family members involved in crafting define wellbeing from an Indigenous perspective and will assess crafting regarding its role in developing collective social-cultural and spiritual capitals. For the second question, livelihood capitals (Financial, Social, Natural, etc.) have specific interrelationships concerning sustainable livelihood as levels of one may negatively or positively affect another (DfID, 1999). The literature suggests that livelihood is best understood through the assessment of six forms of capital; financial, physical, human, natural, social/cultural (DfID 1999, Gregorčič 2009), and spiritual capital (Chu 2007, Lillard & Ogaki 2005). Looking at both the act and process of crafting as an alternative livelihood option will help unpack crafting and its linkages with the six forms of capital and how crafting may contribute to overall sustainable livelihood.

A conceptual framework is developed from the literature review. Semi-structured interviews, verbal surveys, and ethnographic observations were conducted with Indigenous Mazahua artisans of Mexico in order to investigate these two research questions. The data

analysis compares data findings with the conceptual framework based on the literature, with a goal to more accurately map the linkages between Indigenous crafting, sustainable livelihood and Indigenous concepts of wellbeing in the context of Mazahua Indigenous petty commodity artisans in Toluca Mexico.

Study Setting: Mazahua Artisans

This research is set in the artisan communities of the Mazahua Indigenous peoples of Mexico and focuses on the household level where the sense of community develops (Perez & Gubler 1996). Perez & Gubler state that Mazahua who live within households working in cooperation with extended families, where ”compadrazgo” (co-parenthood) develop a sense of mutual help and community service. This sense of community is characterized by a consciousness of duty and obligation of its members to the community that often transcend the individual. Although Mazahuas are theoretical descendants of Aztec peoples, Mazahua do not have any legends about prominent Aztec individuals (Iwańska, 2006). Mazahuas instead, value the social role of the individual over the personal attributes of individuals (Iwańska, 2006). One prominent social role in Mazahua communities is that of artisan who is focused on traditional activities (like craft making) with some artisans being more respected than others based on their skills and knowledge of Mazahua traditional crafting techniques and processes.

According to Perez & Gubler (1996) primarily Mazahua women “tend sheep, card the wool, and weave” while men do other textile related tasks. Fajardo (2011) reports that, due to external socio-economic pressures increasing the migration of male farmers, more Mazahua women are now taking on the role as family heads. Although Mazahua women hold titles to land with less frequency than men, the government strategy known as PROCEDE (Programme for Certification of Ejido Land Rights and Titling of Urban lots) has made it possible for more Mazahua women to inherit land ultimately empowering them to act as land managers (Fajardo, 2011). This empowerment of Mazahua women as indicated by Fajardo (2011) and independent research supports the idea of emerging flexibility in gender responsibilities or replacement in Mazahua communities concerning men’s tolerance towards leadership roles of women. In

developing this social entrepreneurial venture, the study of Mazahua gender related cultural practices in their textile production at the household level is critical. When asked how the men would respond to the empowerment of the women in running the fashion goods venture, the Mazahua men of Loma de Juarez replied that they would be willing to help with various tasks needed to run the business (Independent research study).

Mazahua Artisan Community Life

The field studies for this Applied Project began in the Mazahua artisan community of San Felipe Santiago in Toluca, Mexico. The community consists of about 12,000 people spread out over the region as part of the greater Mazahua community of an estimated 127,826 individuals. Mazahua communities would be considered BoP or Base of the economic Pyramid communities. According to the Base of the Pyramid income segmentation of Rangan, Chu & Petkoski (2011), the Mazahua are categorized as falling within Subsistence ($1-3 per day) to Low Income ($3-5 per day) levels. Mazahua communities primarily rely on subsistence farming and they are currently looking for other means to financially support themselves. All the Mazahua artisan communities had artisans who additionally relied on craft production and sales as an alternative means of livelihood. During the initial visit to Loma de Juarez, artisans inquired about ways in which their traditional stitching crafts could reach a broader market.

Mazahua Community Problems/Issues

Suffering from severe poverty, Mazahua artisans wish to increase their financial capital through some sort of entrepreneurial venture that would utilize traditional stitching and sewing crafts. With primary responsibilities for child rearing and housekeeping what little extra time the women have is often spent socializing amongst themselves while engaging in stitching and crafting traditions. These cultural processes present both opportunities and challenges with regards to livelihood asset production and management. The social capital (i.e. trust and social cohesion) built up through the informal gathering of women for stitching and crafting traditions could be a valuable Indigenous cultural asset to Mazahua artisans, but also a fragile asset if not managed well.

In addition to local constraints on time and financial resources, Indigenous culture is a form of intellectual property that is increasingly under the threat of cultural appropriation, Guest (1995) states that “within the realm of international law, the topic of intellectual property is a high priority, uniting the concerns for self-determination and economic independence” (pg. 111). Indigenous Intellectual property rights (Scrase, 2003) as human or cultural rights (Coombe, 1998) should be considered as a means to preserve both social as well as financial capital within communities specifically concerning the unique Mazahua Indigenous stitching patterns and designs.

Another social asset Mazahua artisans possess is their Indigenous language, but it is endangered. Mazahua artisans speak or have spoken *Jñatrjo* which is considered to be an Indigenous language undergoing slow extinction in Mexico (Mellado, 2008). According to preliminary interviews with Mazahua women artisans in Loma de Juarez, the younger people are slowly beginning to speak more Spanish than Mazahua, because it is easier for individuals to get work (Independent research study). Many young Mazahua women are unable to speak *Jñatrjo* and Mazahua artisans sense that this is an issue because the women mainly teach the children the language.

Indigenous Crafting

Mazahua artisans are widely known for producing intricately designed embroidered sashes and underskirts. The embroidered belts are about 4 inches in width and 45-50 inches in length with medium loop stitches. The embroidered area of the underskirts are about 10-12 inches in width and about 60 inches in length with large loop stitches. Embroidered sashes take about 3-months to complete and cost around $100 USD, while embroidered underskirts take about 6-8 months and cost around $250 USD. Artisans also embroider other articles like tablecloths and small accessories using specific Mazahua cross-stitches that look like bird tracks. Mazahua sashes and underskirts according to preliminary observations and conversations with Mazahua artisans require a higher level of skill and hold specific cultural and spiritual significance because they are worn around the waist or a woman’s “spiritual center” (independent research

study). According to conversations with the leading women and leading man of an artisan community in Loma de Juarez, underskirts are very important to Mazahua women as symbols of womanhood and non-crafting women save up money to purchase one when they come of age.

Indigenous Concepts of Wellbeing

For this research, the concepts of Spirituality, Cultural Identity, Place-Thought, and Buen Vivir are seen as components of indigenous wellbeing. Wills (2007) offers '*Spirituality*' as an additional indicator of personal wellbeing and states that "Spirituality implies that the individual is part of a greater whole, which in turn influences how the individual acts" (pg. 51). Walters & Takamura (2015) specifically incorporate the concept of spirituality in their First Innovations Quadruple Bottom Line framework for Indigenous entrepreneurship intervention stating that "…spirituality as the fourth bottom line must function as a means to bridge knowledge from the past to the present and from the scientific to other ways of knowing" (pg. 82). Walters & Takamura (2015) go on to state that "from an indigenous…knowledge base, spirituality is always a critical component to a person/community/nations' wellbeing" (pg. 86). Using *Spirituality* as an indicator of wellbeing could offer insights into how Indigenous peoples subjectively view wellbeing and how it might be affected by entrepreneurial interventions.

Cultural Identity closely relates to Indigenous subjective wellbeing through the notion of Cultural Efficacy. Houkamau & Sibley (2011) describe *Cultural Efficacy* as a sense of belonging as well as the "ability to draw upon and in turn provide support to others within cultural context" (pg. 392). The authors go on to state that *Cultural Efficacy* is "an extremely important element of social identity" and "vital to the continuation of living culture" (pg. 391). Cultural Identity can be assured as a part of an Indigenous conception of wellbeing through the use of *Cultural Efficacy*. Houkamau & Sibley propose that an Indigenous individual's level of *Cultural Efficacy* can be used to assess intervention outcomes and their influence on subjective wellbeing levels stating that "a high level of cultural efficacy and active [cultural] identity engagement should produce increased subjective wellbeing and related outcomes" (pg. 382). Diener et al (1999) state that a key component of subjective well being (SWB) is *adaptation* or the ability of humans to adapt, making

a person's individual adaptive capacity central to one's subjective sense of wellbeing. Reyes-Martínez (2021) sees a direct link between indigenous cultural participation and indigenous subjective wellbeing specifically in the context of Latin America. They state that cultural participation may be associated with specific needs such as "economic, escape, sensation-seeking, symbolic, aesthetic, mastery, social life, and distinctiveness needs" (pg. 6). Cultural identity through cultural participation (cultural efficacy) involves conceptions of Indigenous wellbeing that include a multitude of social, cultural, political and economic needs. Little (2004) sums this up nicely by treating cultural identity as a process in which individuals "strategically use different identity constructions for political and economic reasons to help maintain their livelihoods" (pg. 6).

Place Thought (Basso, 1996, Watts 2013) is additionally included as another aspect of Indigenous wellbeing due to its non-Euro-Western perspective. Watts states that "Place-Thought is based upon the premise that land is alive and thinking and that humans and non-humans derive agency through the extensions of these thoughts" (pg. 21). In other words, unlike the Euro-Western epistemological / ontological framework that fundamentally separates humans from non-humans, Place-Thought is a pre-colonial perspective or cosmological framework that sees all things as having "thought, desire, contemplation, and will" or what could be defined as agency. Basso (1996) sees Place-Thought as the consideration of the symbolic properties of environmental phenomena in addition to their material properties in a "pre-colonial" Indigenous conception of the man-land relationship. Through the indigenous perspective of Place-Thought, wellbeing can be seen as an inclusive conception that takes into account both humans and non-humans.

Lastly, this research uses the concept of Buen Vivir which brings spirituality, cultural identity, wellbeing, and place thought into a single holistic perspective. Buen Vivir is an Indigenous concept of wellbeing which recognizes aesthetic, cultural, historical, environmental, and spiritual ways to give life meaning. This contrasts with the conventional Western reductionist view of life based primarily on utilitarian values such as economic values and the commoditization of goods (Gudynas, 2011). Albarrán González (2020) additionally sees Buen Vivir as a primary

element of artisan creativity within Indigenous design and as a decolonized approach towards wellbeing for the Global South. She refers to this as an approach focused on *Buen Vivir-centricity*. Buen Vivir thus suggests that an indigenous view of community development through social enterprise is a vehicle for the self-determination of Indigenous peoples (Giovannini, 2012).

Concepts of Indigenous Authenticity

The authenticity of Indigenous artisan crafts involves the complex interrelationships between artisan cultural identity and the crafts they produce. Linkages between the cultural identity of Indigenous artisans and the success of their entrepreneurial activities in crafting revolve around the collectivistic worldviews they possess and how these worldviews shape and inform their social, cultural, and economic objectives / activities. Indigenous identities of artisan petty-commodity producers should be seen as fluid, shaping and being shaped by internal as well as external factors affecting the lived cultural forms, the economic cultural forms, and the political cultural forms in their community landscapes (Little 2004, Larsen & Johnson 2012). These cultural identity forms in turn impact the perceptions of the different concepts of Indigenous authenticity based on *what* is crafted, *where* it is purchased, and *who* has produced the craft. With regard to *what* is crafted, Tice (1995) discusses the "ethnic authenticity" of *mola* designs based on traditional Kuna patterns and motifs, noting that because artisans made these crafts based on cultural history, they were more valued by tourists. The author concludes that these activities and the commercialization of Kuna Indigenous crafts has resulted in the commoditization of Kuna ethnic identity, but contends that the Kuna artisans have successfully leveraged their ethnic Indigenous identity to their collective economic advantage (Tice, 1995). *Where* the crafts are purchased is also important. Little (2004) states that the tourists who shop for crafts at the Mayan Indigenous marketplace perceive it in terms of how culturally authentic these places are– what he refers to as *marketplace authenticity*. The author highlights tourists were almost always suspicious of Mayan craft marketplaces created specifically for tourists (Little, 2004). Lastly, addressing *who* has produced the craft defines authenticity. Swain (1993) describes Mayan artisans as the "knowledgeable producers of ethnic arts," but notes that the

nation state sees Mayan women artisans merely as a “sustainable resource to be exploited as the living reproducers and markers of authenticity” (pg. 43). The notion of “production authenticity” therefore is based on the identity of Indigenous artisans as the state’s producers of authenticity even as their authenticity as producers of Indigenous crafts is questioned. Tice, Little, and Swain all agree that ethnic dress is central to how Indigenous artisan petty commodity producers are identified in the marketplace, and how their Indigenous or cultural identity helps determine what strategies Indigenous artisans use to achieve their socio-economic objectives and goals.

Sustainable Livelihood

The Department for International Development, U. K. (1999) identifies the five forms of capital for sustainable livelihood as Human, Natural, Financial, Physical and Social that form the commonly used *asset pentagon*. For this study six forms of capital were used as indicators of sustainable livelihood to form an asset hexagon. In the context of Indigenous crafting, *human capital* is defined as the access to skilled family or community members in crafting (sewing, embroidery, knitting, weaving, etc.). *Natural capital* is defined as access to forests, streams, pastures, and local plants (for crafting). The definition of *Financial capital* is based on household yearly income, cash savings, livestock while *Physical capital* is defined as access to sewing machines, cars, trucks, surplus of crafting materials (yarn, fabrics, threads, etc.).

Social capital, often defined as access to networks, does not encompass cultural aspects of livelihood especially vital to Indigenous artisans. *Cultural capital*, on the other hand, incorporates many social factors in its definition. Gregorčič (2009) expands on Bourdieu’s original definition and redefines *cultural capital* as “a potential of social knowledge, the power of social integration, or cohesion, which reinstates new forms of (non-capitalist) social relationships (this is *potencia* or creative power)” (pg. 358). The Gregorčič (2009) definition of Cultural Capital expands beyond Bourdieu’s ‘capitalist’ relationships to ‘non-capitalist’ forms of social relationships (social knowledge, social integration, and social cohesion), and so for this research social capital is extended to encompass cultural capital as *Social/Cultural Capital. Social/Cultural Capital* as

one of the forms of capital will better pertain to Indigenous artisan community assessment in that it embeds social assets in the specific context of Indigenous culture and traditions.

The final component of the asset hexagon is *spiritual capital*. Lillard and Ogaki (2005) define *spiritual capital* as "a set of intangible objects in the form of rules for interacting with people, nature, and spiritual beings (God, gods, buddhas, angels, evil spirits as believed to exist by individuals and in different religions) and believed knowledge about tangible and spiritual worlds" (pg. 1). Chu (2007) defines spiritual capital as "the movement of spirit's intelligence activating and creatively expressing through the use of collective innate and intangible personal qualities…[and] is dynamic and foundational to entrepreneurial enterprise…" (pg.71). *Spiritual capital* in the context of this study is defined as artisan access to places of worship, priests, spiritual leaders, and the interaction with spiritual beings. Indigenous perspectives will be critical in extending western methods of livelihood assessment. This study proceeded under the above-mentioned definitions of the six forms of capital; Human, Natural, Financial, Physical, Social/Cultural, and Spiritual.

A conceptual framework diagram (figure 1) has been created to understand the relationships and or linkages between the previous topics discussed in the literature review (Indigenous crafting, Indigenous Wellbeing, and Sustainable Livelihood). This conceptual framework was used as an analytical tool for the data collected then later refined based on the research findings (figure 15).

Conceptual Framework

The following conceptual framework illustrates proposed linkages between Indigenous crafting, Indigenous Wellbeing, and sustainable livelihood (six forms of capital) and the associated literature for each element in the framework:

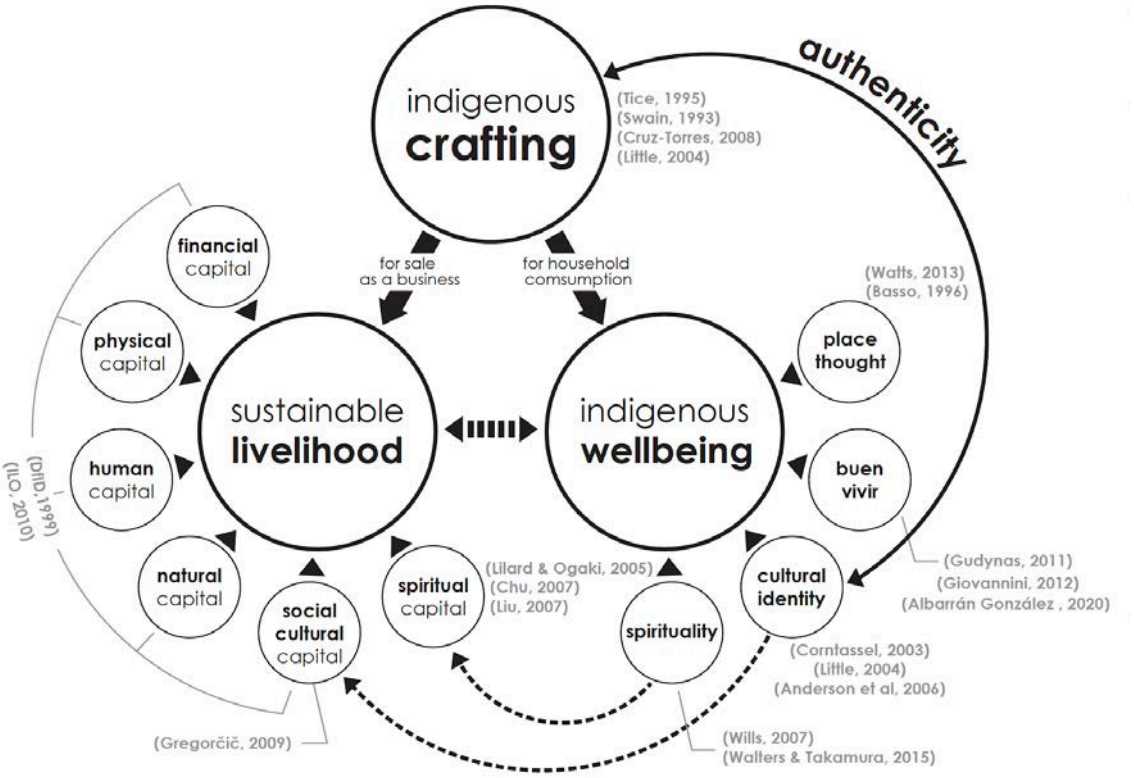

Figure 1: Indigenous Crafting, Sustainable Livelihood, and Indigenous Wellbeing

The conceptual framework presented in figure 1 in addition to representing the linkages between Indigenous crafting, sustainable livelihood, and Indigenous wellbeing also indicates the possible influences or impacts of cultural identity on social/cultural capital, spirituality on spiritual capital, and the potential connections between cultural identity and Indigenous crafting through the notions of authenticity as supported by the literature review (Swain 1993, Tice 1995, Little 2004, and Cruz-Torres 2008). This research strives to expand on this conceptual framework based on literature review with field studies on Mazahua artisans in Mexico with hopes to further *Indigenize* the body of knowledge on crafting as a viable livelihood option towards community development through sustainable entrepreneurship.

Methodology

The ethnographic approach in this study is qualitative and interpretive in order to offer a way to understand local views of Indigenous artisans on concepts of wellbeing and livelihood.

The goal of this approach was to decolonize the research (Smith 2012) and to qualitatively focus on the lived experiences of Indigenous artisans within their individual contexts. Four and a half months of ethnographic field observations, semi-structured interviews (n = 50) and verbal surveys (n = 50) were conducted in four towns located across three municipalities; Villa de Allende (towns of San Felipe Santiago and Loma de Juarez), Valle de Bravo (town of San Antonio de la Laguna), and San Felipe del Progreso (town of Fresno Nichi). All Mazahua municipalities are located in the State of Mexico in Mexico (see Figures 3-7).

Several weeks focused on making connections and building trust in Mazahua communities and interviews and surveys were done intermittently over the 4.5 months. Field notes in the form of a daily research journal and several MB (megabytes) of visual ethnographic data (digital photographs and video) were collected over the entire 4.5-month period. The first phase of semi-structured interviews focused on the process and act of crafting and the second phase (verbal surveys) focused on artisan self-assessment rankings of their livelihood assets.

Unit of Analysis

The unit of analysis for this research is the individual artisan (Figure 2). Individual Mazahua artisans can be seen as nested within their specific community (either kinship or friendship-based), which would be further nested within a greater Mazahua municipality.

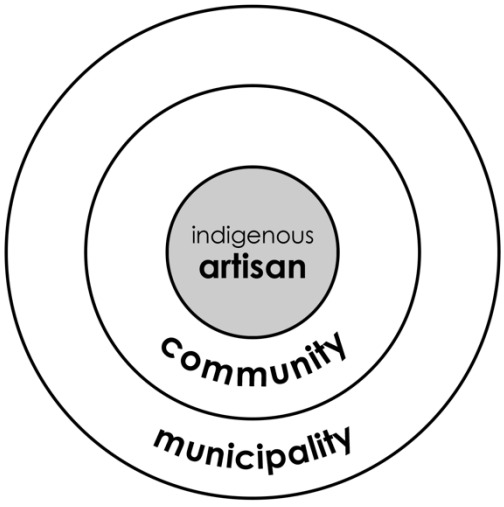

Figure 2: Unit of Analysis

Sampling Strategy

Two separate opportunistic snowball (O'Leary, 2014) sampling frames were used across four towns from three Mazahua municipalities in a location stratified sampling strategy for the semi-structured interviews and the verbal surveys. Figure 3 depicts the thirteen Mazahua municipalities based on Serano, Barquin et al., (2011). Figures 4 through 7 show the four participating artisan communities (Loma de Juarez, San Felipe Santiago, Fresno Nichi, and San Antonio de la Laguna) within the three Mazahua municipalities of Villa de Allende, San Felipe del Progreso, and Valle de Bravo. Only highly skilled artisans participated in the study and artisans were asked to self identify whether they could create the more difficult and culturally significant Mazahua underskirts called *mbox kiezhe* in Jñatrjo (*enagua* in Spanish) and sashes called *mbuthrhu* in Jñatrjo (*faja* in Spanish) in order to determine this. Data collection stopped once 50 individual artisans had participated.

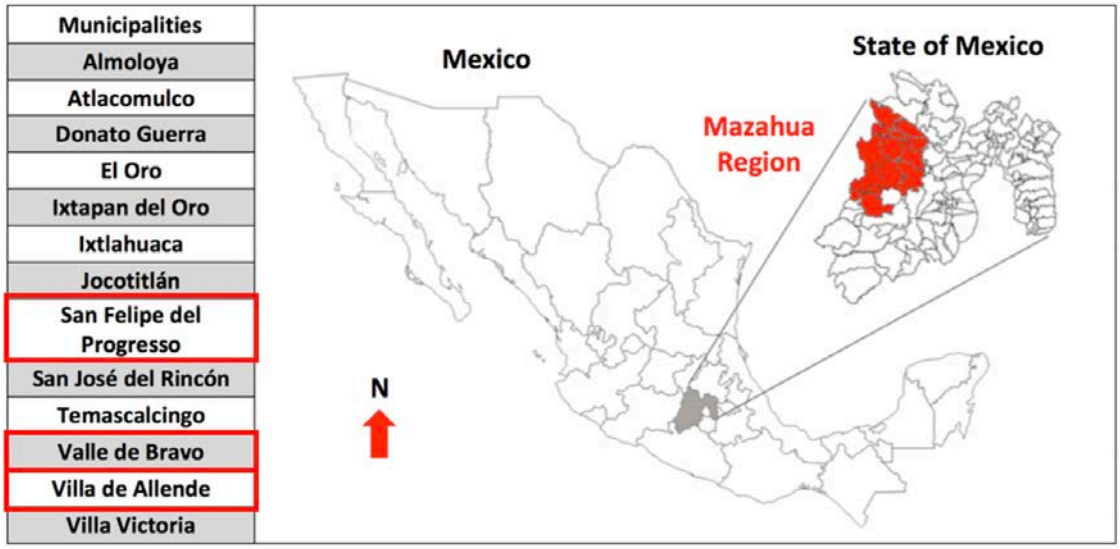

Figure 3: Three Mazahua Municipalities (diagram based on Serano Barquin et al., 2011)

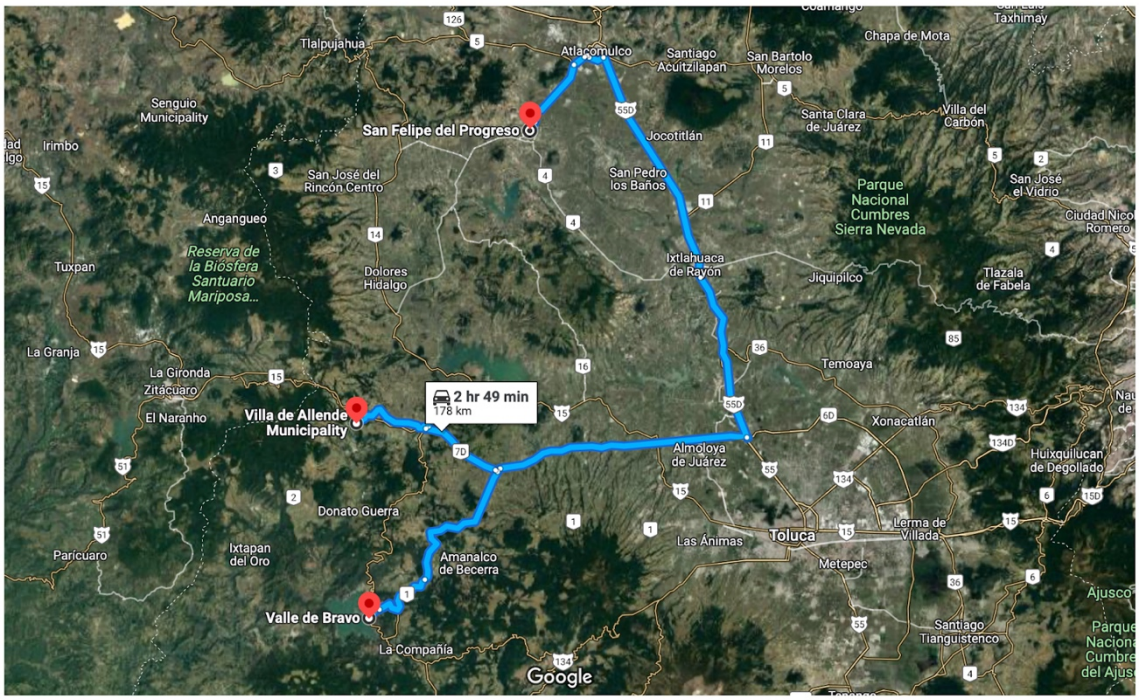

Figure 4: Travel Route between Municipalities (google maps)

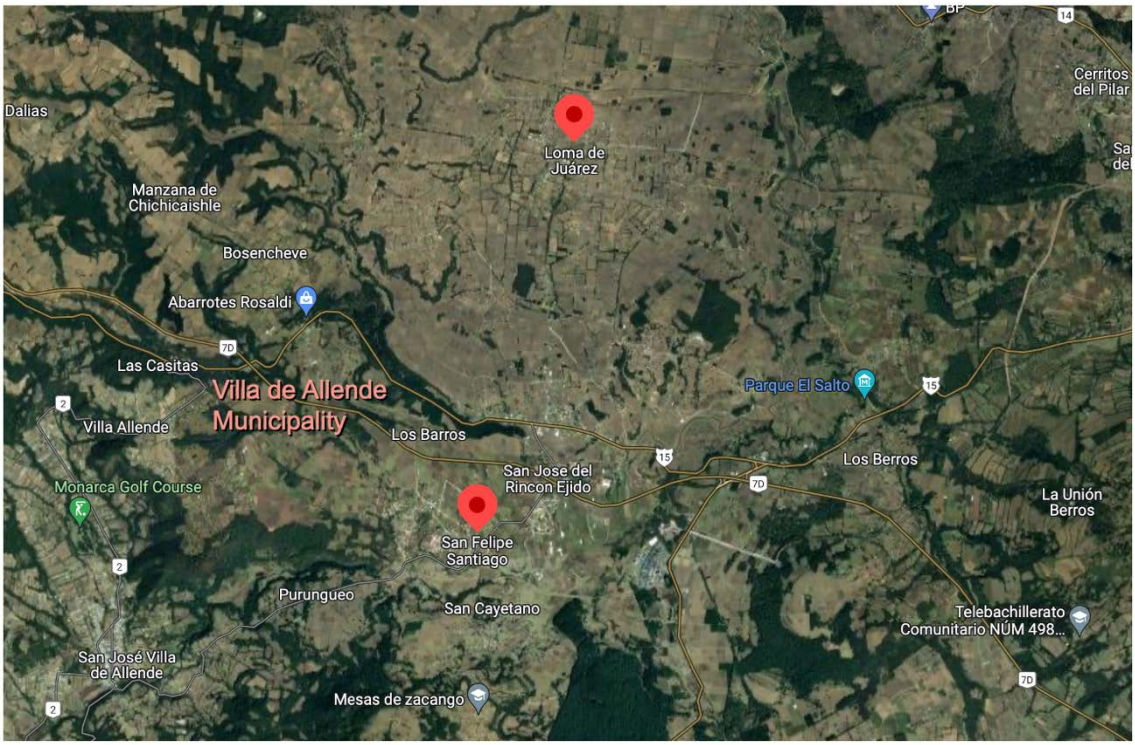

Figure 5: Loma de Juarez & San Felipe Santiago in Villa de Allende (google maps)

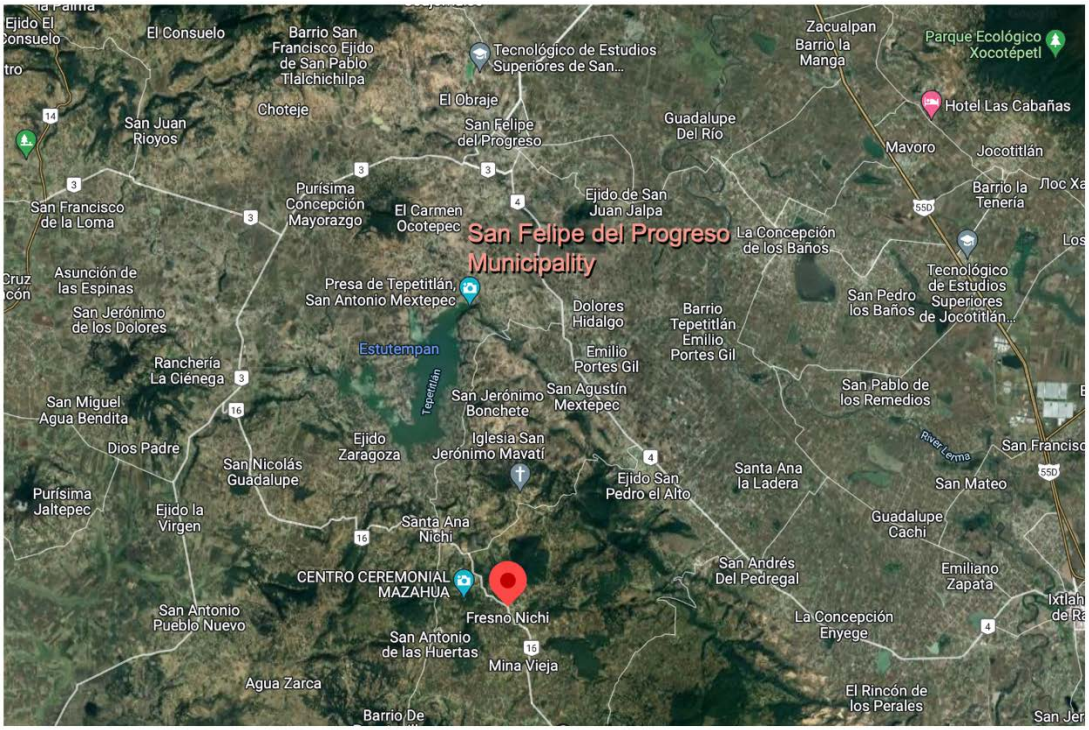

Figure 6: Fresno Nichi in San Felipe del Progreso (google maps)

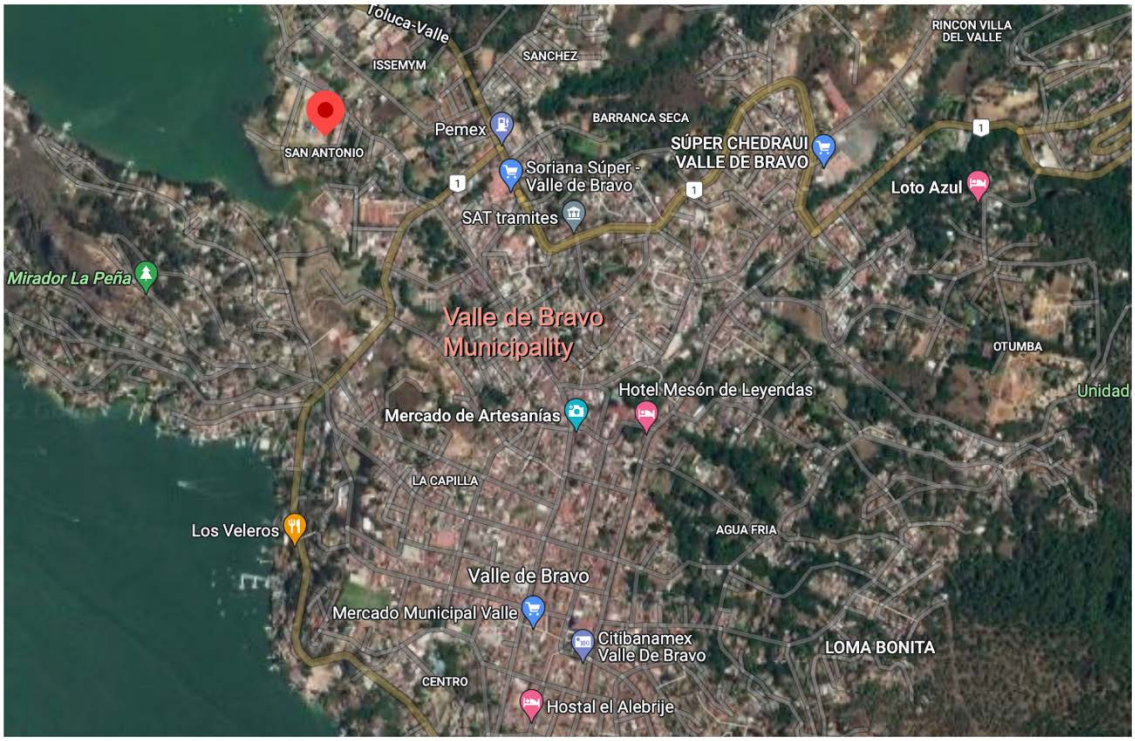

Figure 7: San Antonio de la Laguna in Valle de Bravo (google maps)

Data Collection and Analysis

Ethnographic methods that captured the emic views of artisans were used in order to understand how the act and process of crafting relates to artisan views of wellbeing and the relationship of crafting on livelihood capital access. Semi-structured interviews (n = 50) focused on the process and act of crafting and provided insights into how underskirts were made (process) and how artisans experienced underskirt crafting (act) with reference to their physical, emotional, financial, spiritual, and cultural impacts. Mazahua woven sashes (*mbuthrhu or faja*) were also assumed to be difficult crafts to produce. Semi-structured interviews with artisans that can produce sashes were difficult to achieve through snowball sampling as artisans reported that there were only a few artisans left in their communities. The few that were done provided insights into how sashes were made (process) and how these artisans experienced sash crafting (act) regarding its physical, emotional, financial, spiritual, and cultural impacts. Exact numbers of skilled artisans that can produce Mazahua sashes in each community was not assessed.

The semi-structured interviews were also used to reveal Mazahua artisan insights and focused on the specific topics such as the Meanings of Patterns, Stitching/Crafting Circles, Spiritual Beliefs, Relationship between Crafting and Wellbeing, Cultural Identity, Crafting for Financial Livelihood, Physical & Natural Capital for Crafting, and Human Capital for Crafting. Artisans spoke openly about how they made their crafts (process) and what their experiences were in the making of their crafts (act). Each interview was held in a private room with the artisan, researcher, and translator and lasted between one and one and a half hours. Artisans were encouraged to show the crafts they made. If an artisan did not bring a craft to show, a sample was provided to view in order to spark more conversation and to help address specifics about craft (its production, design, and cultural significance as an article of traditional wear). Artisans were also asked about the relationships between their crafts and the making of them with their sense of wellbeing (social relationships, relationship with cultural identity, sense of creative expression and fulfillment, etc.). For the analysis of interview data, specific interview questions were chosen as a proxy measure or attribute that would represent a particular form of capital

(human, natural, financial, physical, social/cultural, and spiritual). These questions were chosen based on the most robust and or complete response regarding the forms of capital in order to simplify the data for analysis.

In addition to the semi-structured interviews, a series of thirty-minute verbal surveys (n=50) were undertaken in order to develop an understanding of Mazahua artisan satisfaction levels regarding their livelihood assets (Natural, Physical, Human, Social/Cultural, Financial, and Spiritual). Robeyns (2003) cites Jasek-Rysdahl (2201) regarding the use of “asset-mapping” as a means of assessing a community’s inventory of its member’s capabilities (potential to improve life) (pg. 32). The verbal surveys were used to map Mazahua artisan livelihood assets in an attempt to assess the inventory of these assets for each of the fifty artisans studied. Multi-variant value data spider maps were used to synthesize Mazahua assets across each of the 6 capitals measured in this study. It is theorized that livelihood capitals (Human, Natural, Financial, Physical, and Social) have specific interrelationships in that increases in one capital may lead to increases or decreases in another causing stresses (DfID, 1999).

These interrelationships can be viewed in the context of individual levels of capability on a scale (e.g 1 being low and 10 being high). Through these verbal surveys artisans were asked to self-assess their overall capabilities (access) for each capital, providing individual spider maps for each artisan, which were later analyzed at both individual and aggregate levels. A scale with both numeric and ‘emoji’ facial expressions associated with each number from 1 to 10 was developed and used for verbal surveys (see Figure 8). Artisans were asked rating questions and instructed to also look at the emoji scale when ranking. This proved to be successful in helping artisans rank their overall access to the six forms of capital.

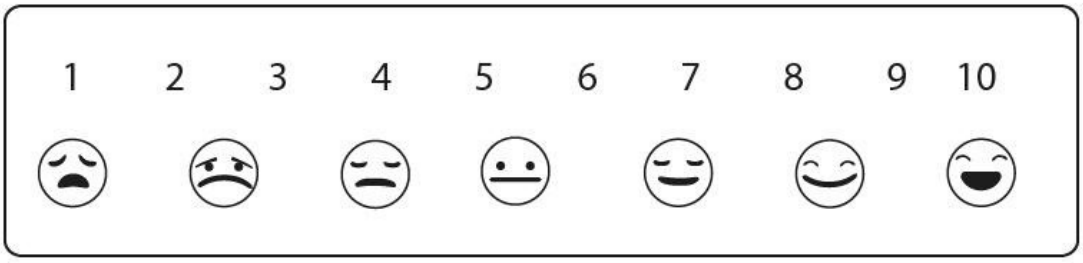

Figure 8: Verbal Survey 'emoji' facial expressions and 1-10 ranking scale

Finally, in order to triangulate the data collected in the semi-structured interviews and verbal surveys, four and a half months of continuous ethnographic field observations from the beginning of March to the end of July 2019 were conducted simultaneously in four Mazahua artisan communities in the State of Mexico. A visual ethnography was conducted through photo and video documentation of artisan life. Field notes in the form of a daily research journal documented the researcher's personal reflections on what was observed. The visual ethnography and field notes provided a deeper contextual level of data regarding artisan community life (social relationships, making a living, gender roles, creating, and capabilities + material harvesting, materials prep, designing, making, selling, etc.). Table 1 shows the relationship of the two research questions for this study in relation to the data collection methods and their role in addressing the research questions.

Research Question	Data Collection Method		Role
In what ways does the act and process of crafting (social relationships, making a living, gender roles, creating, and capabilities) influence, enhance, or affect Indigenous wellbeing (Buen Vivir, Place Thought, Spirituality, and Cultural / Indigenous / Ethnic identity)?	Structured Interviews	Ethnographic Observation	Structured Interviews allowed the researcher to focus on questions specific to the process of crafting (production, materials, and techniques) as well as the act of crafting (artisan attitudes, beliefs, and motivations) and their linkage with Indigenous concepts of wellbeing.
			Ethnographic Observation allowed the researcher to embed himself in the artisan communities under study in order to better develop an emic perspective on artisan community life (craft production for business outside and craft production for household consumption).
In what ways does the act and process of crafting (social relationships, making a living, gender roles, creating, and capabilities + material harvesting, materials prep, designing, making, selling, etc.) influence or affect Indigenous livelihood (Natural, Physical, Financial, Human, Social/Cultural, and Spiritual capitals)?	Verbal Surveys		Verbal Surveys allowed the researcher to more efficiently explain the topics of Livelihood Capitals so that artisans could understand what they would be ranking and how they would rank through examples explained verbally.

Table 1. Research Questions and role of Data Collection Methods

Results

The following results are based on the semi-structured interviews (n = 50) focused on the process and act of crafting and verbal surveys (n=50) on Mazahua artisan satisfaction levels regarding their livelihood assets (Natural, Physical, Human, Social/Cultural, Financial, and Spiritual). Ethnographic field observations in four Mazahua artisan communities are integrated with these results. The age range of the artisans interviewed, surveyed, and observed were between 19-81 years old. The semi-structured interviews took place in the four towns of San Felipe Santiago (n = 10), Loma de Juarez (n = 8), San Antonio de la Laguna (n = 18), and Fresno Nichi (n = 14). The verbal surveys also took place in the four towns; San Felipe Santiago (n = 8), Loma de Juarez (n = 18), San Antonio de la Laguna (n = 8), and Fresno Nichi (n = 14). There was some overlap between the respondents for the interviews and the surveys; all 10 of the interviewees in San Felipe Santiago were the same for the surveys, 6 of the interviewees were the same in Loma de Juarez, 5 of the interviewees were the same in San Antonio de la Laguna, and 7 of the interviewees were the same in Fresno Nichi for the surveys. The semi-structured interviews data analysis used proxy questions as representative of capitals selected by the robustness of responses and was organized within ten themes using frequencies and descriptives coded and analyzed in MS Excel. The verbal survey data on capital rankings was scaled from 0-10 and was separated by location for analysis. Individual artisan rankings were analyzed in MS Excel and set into spider diagrams.

1.0 Overall Process and Act of Crafting

Highly skilled artisans were targeted for the Phase 1 interviews which focused on the process and act of crafting in order to answer the two research questions. It was confirmed that Mazahua embroidered underskirts (*mbox kiezhe* or *enagua in Figure 9*) were of the most difficult crafts to produce due to their process techniques (*punto de cruz & trenzado*) and the higher level of skill needed to produce them. The interviews revealed that Mazahua woven sashes (*mbuthrhu or faja in Figure 10*) were the most difficult Mazahua crafts to produce due to their specific process technique (*telar de cintura*). However, artisans also described this process technique as

going extinct and that there are only a few artisans left who can produce them. Out of the fifty artisans interviewed only six artisans said they could make a sash. The semi-structured interviews with artisans also revealed the specialized tools and techniques used in making sashes (process) and artisan views on their physical, emotional, spiritual, cultural, and financial experiences in making them (act). Artisans were encouraged to specifically address how their crafts impacted their sense of wellbeing as well as how they impact their livelihoods as an entrepreneurial activity. Artisans spoke at length about how crafting integrates into their daily lives and their challenges in making a living out of craft production as a supplement to their family incomes.

Figure 9: Mazahua embroidered underskirt (mbox kiezhe or enagua)

Figure 10: Mazahua woven sash (mbuthrhu or faja)

1.1 Stitching

Based on the 4.5 months of observational data, Mazahua patterns like the Mazahua Star depicted in Figures 11 and 12 were found to be arithmetic or based on the counting of stitches or threads. In this way, Mazahua embroidery can be seen as a unique combination of the digital and the analog in that each digit is placed by the hand of the artisan in the creative process. A Mazahua embroidered underskirt is roughly 300cm x 25cm and takes about 6-8 months to complete. The Mazahua Star alone is made up of 520+ separate stitches. There are 9 cross stitches (36 separate stitches) in 1 square cm of the underskirt. A typical underskirt will have 67,500 cross stitches or 270,000 separate stitches. It has been estimated that a Mazahua artisan will make about 10-20 underskirts in her lifetime (approximately 10-20 years). In that time period the artisan would have made 2.7 – 5.4 million separate stitches using the *Punto de Cruz* technique.

Figure 11. Mazahua Star Pattern Stitching Observation

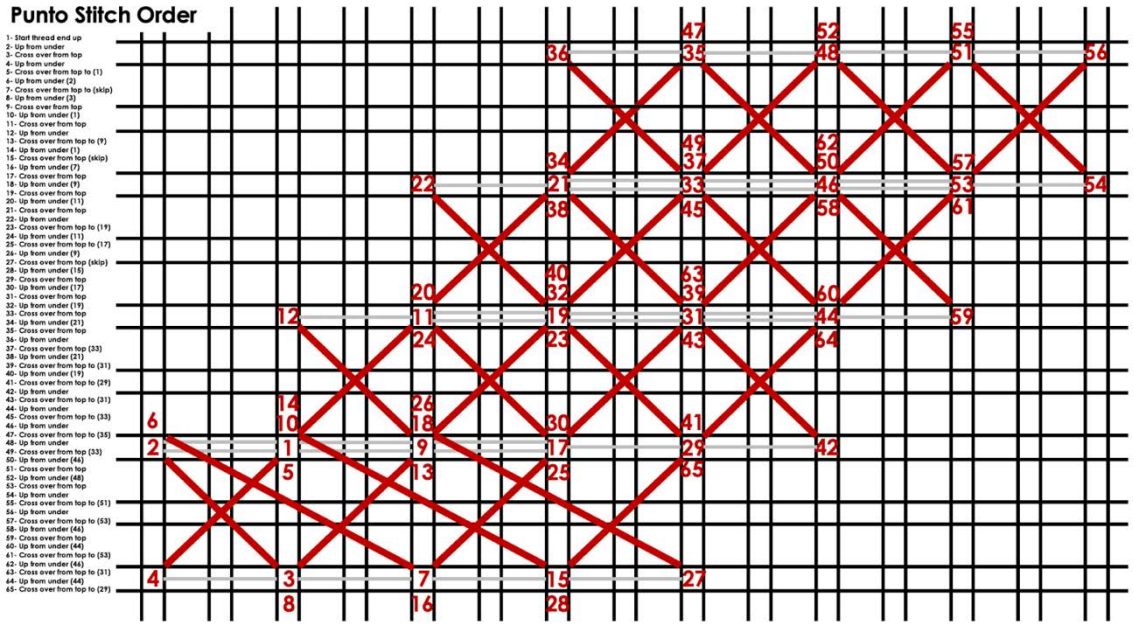

Figure 12. Mazahua Star Stitch Analysis (one of eight diamond shapes)

Mazahua artisans were observed using small duplicate patterns on scraps of cloth as a kind of ‘cheat sheet’ in order to remember the numbers of stitches of each pattern using the *punto de cruz* technique (Figure 13). These Mazahua ‘cheat sheets’ with enlarged hand embroidered patterns on them are used as a stitch counting guide when artisans are reproducing the pattern on a fabric at a much smaller scale. Cheat sheets also provide a living record of the patterns used

and are shared between artisan family members and artisan friends. Figure 14 shows a Mazahua artisan counting stitches (threads) on a 150-year-old sash (mbuthrhu) in order to create a newer sash using the *telar de cintura* technique. Older crafts (sashes and underskirts) such as those inherited from previous generations in the artisan's family are often used as patterns for newer crafts since the artisan only needs to count the number of stitches to be able to reproduce them.

Figure 13. Mazahua artisan counting stitches using *punto de cruz* technique

Figure 14. Mazahua artisan counting stitches using *telar de cintura* technique

1.2 Spirituality: Spiritual Beliefs

The following question probed connections between crafting and faith for Mazahua weavers; "*does the crafting process have any spiritual meaning to you? If so, why? If not, why?"* Temples, churches, and places of worship are present throughout Mazahua communities. About sixty-eight percentage (34/50) of respondents reported attending these places of worship and half (25/50) reported getting spiritual advice from pastors or priests. About one third of the weavers interviewed (36% or 18/50) mentioned traditional beliefs and the spiritual healing powers of the Mazahua underskirt or patterns. One weaver (age 40) described this perspective as "*Yes. ….. When I have bad dreams I use a recently finished skirt as a pillow to cure the bad dream. I*

learned this from my grandmother so this is why I do this. It really works. But it has to be a new and clean underskirt."

Several of the Mazahua artisans interviewed (76% - 38/50) did not associate their crafting with spiritual meanings. One woman (age 30) stated "*No, because nobody taught me any meaning of these clothes", and another (age 49) said "it's not a spiritual thing. I have watched my mother do this and it is like a hobby. Growing up we had to do these crafts as girls to pass the time."*

Some artisans additionally mention Christian or Catholic associations with their crafting (10% or 5/50 artisans). For example, one weaver (age 37) stated "*The spiritual connection is that God gave me my talents to make these things…"* Artisans were observed wearing the crafts (underskirts and sashes) they specifically created for festivals at church dances, parades, and when social gatherings occurred. A 66-year-old weaver described these decisions as "*Yes, …we wear the clothes at religious celebrations in the community so there is a connection to the spiritual. We also put Mazahua dress on the Virgin Mary."*

1.3 Crafting and Wellbeing

Artisans reported that crafting activities were like therapy (52% or 26/50 artisans) in that they felt their time doing their crafts allowed them to escape their worries. One artisan (age 37) said "*When I do my crafts it is like my therapy because I forget my troubles".* When asked what was the most enjoyable aspect of crafting, another artisan (age 63) responded "*It is like therapy because I can forget my problems. When I do it I feel I can live longer without heartbreak and bad feelings."* Artisans noted that crafting requires concentration and focus (22% or 11/50 artisans). One artisan (age 40) said that "*I use this as a hobby not to think of other things. I spend time to do my crafts. I have to count and concentrate so I don't think of other things."*

When asked about how they felt doing their crafts, artisans reported a feeling of satisfaction from the act and process of crafting 54% (27/50). Artisans indicated they felt motivation 42% (21/50) while making their crafts anticipating the end results and one artisan (age 27) described her feelings by stating that "*...because I can start another one and the feeling and*

motivation of this. Finishing isn't a motivation but starting a new one is." Almost forty percent of artisans (19/50 artisans) also described feeling a sense of happiness. An artisan (age 47) mentioned that "*I'm happy because I know I'm going to wear the piece when I'm finished. I have 35 completed underskirts."* Artisans felt that crafting was a productive use of time (28% or 14/50 artisans), and 22% (11/50 artisans) experienced a sense of relaxation.

1.4 Cultural Identity

In response to the question "*Do you feel your craft or weaving [dress] affects/impacts your cultural identity? Why?"* 88% responded in the affirmative (44/50 artisans). One artisan (age 36) replied "*Yes, because it is traditional and everyone can see your culture. Everyone can see you are from Loma de Juarez. It is a visual representation of Loma de Juarez beauty which is different and better than other communities I feel. Loma de Juarez is the best and most beautiful."* A strong majority of artisans reported that they wore their traditional Indigenous clothing daily (86% or 43/50 artisans). About 22% of respondents indicated that they were able to identify where a woman was from by just looking at their Mazahua traditional dress and underskirt (22% or 11/50 artisans). An artisan (age 54) describing her daily walks stated *"On the way, I look at others to find out where they come from and they can see where I'm from. I always dress traditional. I wear the complete dress with the sash but inside."* Another artisan (age 54) replied *"...I feel proud to wear it [the poncho] since I know how to make one of these ponchos and you can't find this in any other place and it is also hand made. I can identify other peoples' towns by what they are wearing."* Artisans also mentioned that they were asked to or required to be dressed in traditional Mazahua in order to receive government financial assistance (16% or 8/50 artisans). One artisan (age 35) described her experience of wearing traditional dress as rare, stating *"I wear [traditional] dresses, but only at special times when I receive government services and my little girl also wears a traditional dress."*

2.0 Human Capital for Crafting

The proxy questions; *"Tell me about the process of making this craft?", "How did you learn them?", and "How important are elders in the process of crafting?"* were chosen based on the most robust responses having to do with human capital. It must be noted again that the population sample focused on highly skilled artisans and so most of these artisans relied primarily on themselves as human capital to do their crafts. When asked about skilled or knowledgeable artisans 16% (8/50 artisans) referred to their mothers or grandmothers as an additional human capital resource. None of the artisans referred to their children as a human capital resource for crafting although almost one third (32% 16/50 artisans) indicated that they teach, have taught, and or will teach their children how to craft. Only 26% (13/50) reported that they knew how to use a sewing machine and 18% (9/50) said they would like to learn. The following questions allowed artisans to describe their crafting process; *"Tell me about the process of making this craft? How did you learn them?"* One artisan (age 58) replied "*I know how to make yarn from sheep's wool because my grandmother taught me but I go to my town to buy materials to make a skirt. I know how to dye the wool. I know how to make a sash. My grandmother taught my mother to make a sash and my mother taught me."* Another question addressed human capital more directly; *"how important are elders in the process of crafting?"* One thirty-seven-year-old artisan said "*yes, I talk to my mother, grandmother and neighbors and talk about techniques, exchanging samples of patterns.*

2.1 Natural Capital for Crafting

The following proxy question for natural capital; *"what processes do you participate in?"* was chosen based on responses for Natural Capital with reference to the availability of grasslands for sheep to produce wool and native plants for dying yarn. Natural capital access does not appear to be an issue due to the fact that artisans said they preferred to purchase industrial yarn in a variety of colors at their local craft shop instead of making yarn. A 43 -year-old artisan in describing her process said "*I don't know how to make yarn but my mother knows how. My mother could probably teach me."* Another artisan (age 63) stated "*I buy the material, already colored yarn, in the local market and if I can't find what I need I go to San Felipe. I know how to*

dye yarn but it is easier to buy colored yarn." One artisan (age 64) mentioned how yarn is no longer made from sheep's wool in her community; "*I use store bought yarn. An old man in my town used to make the yarn but he died and this is no longer done. I don't know how to dye the yarn."* When asked if artisans dye yarn, only 6% (3/50) said they harvested domestic plants from the environment to dye yarn.

2.2 Financial Capital from Crafting

The proxy question chosen for financial capital was; "*how important are cash savings in the process of crafting?"* When asked if they saved any cash for their crafting from sales, 34% (17/50 artisans) said 'yes.' These artisans invest profits from craft sales as a business to purchase materials for future projects. Artisans were asked "*How important are cash savings in the process of crafting?"* to which one artisan (age 43) replied "*I save 20-30 pesos per week for crafts. At the end of the month I count how much I have to buy materials."* A twenty-two-year-old artisan spoke of how she determines the amount she should invest back into her crafts stating "*I calculate the types of products I need to produce for example, I will invest 150 pesos from a 300 pesos wallet sale. The rest of the money I use for the house expenses. I always maintain the investment part."* Similarly, another artisan (age 32) stated "*Yes, I save about 5000 pesos to invest in materials."* The vast majority of artisans 66% (33/50 artisans) however, do not save cash from sales. A nineteen -year-old artisan reflected upon this stating *"No, I don't have a savings. I invest money from sales into materials about 1000 pesos per month."* Instead of saving, artisans often resort to using any reserves from other businesses or livelihood activities to purchase materials or from craft sales. Almost half of the artisans 48% (24/50 artisans) reported owning livestock as a financial investment.

2.3 Physical Capital for Crafting

The proxy question "Artisans were asked if they had a sewing machine and most said 'no' 80% (40/50). Crafting materials like yarn and fabrics are bought and sold in local marketplaces in the Mazahua communities and are seldom produced by hand from sheep's wool

by artisans. As seen in Table 2, artisans interviewed (88% or 44/50 artisans) prefer to purchase industrial yarns (Physical Capital) instead of making yarn from sheep's wool and felt that their crafts are not impacted by the lack or abundance of Natural Capital (plants and animals). All of the artisans interviewed 100% (50/50 artisans) said that they have purchased industrial yarn. Out of those, 6% of the artisans (3/50 artisans) said that they usually purchase sheep's wool to make yarn and only sometimes buy industrial yarn. Based on the field observations (4.5 months), artisan access to these marketplaces appear to pose no barrier to crafting problems as artisans can walk or take taxis if they do not own or have access to a car or truck.

2.4 Social/Cultural Capital: Stitching/Crafting Circles

Artisans were asked *"do you do crafting activities alone or with others? Why? (how many others) Where? (public place or private)"* and this was used as a proxy question for the analysis. Based on the semi-structured interview data, stitching/crafting circles are informal. Most of the stitching/crafting activities observed over the 4.5 months of field studies were impromptu (unplanned) and either kinship or friendship-based. Stitching/crafting activities happen when women drop by to socialize with each other and can happen anytime throughout the day at one's home, at bus stops, in waiting rooms, at school events, etc. Only 14% of the artisans interviewed (7/50 artisans) reported that they primarily crafted in friendship-based stitching/crafting circles. A much larger proportion of Artisans reported usually crafting alone (66%), while 12% (6/50 artisans) only craft with other family members. Based on the observational studies, gossip, family talks, and spiritual hymn singing are the common activities in addition to discussing and doing embroidery/crochet within these circles. A young artisan (age 22) stated *"I work with my mother and mother-in-law. I ask them questions on how to make and to correct my mistakes,"* while a thirty -year-old artisan replied *"Alone, because it's not common in my community to do crafting in groups."* When asked, an elder artisan (age 81) made a distinction between crafting techniques stating *"when making a sash I work alone. But sometimes there is a lot of work and I work with other women on the project like pillows, scarves, etc. For dresses and sashes we work alone. I work with about 5 people if I work at home. If I have to go somewhere to work on a project there*

will be more but I don't know how many." Another artisan (age 47) described her activities in crafting for sale as a business stating "*I take the work from the workshop back to my home and work alone at home. I work outside on the patio."* Similarly, an artisan (age 50) said *"I work with my sisters. Each sister makes their own poncho when we have work to make money. Usually three of us work together when a job comes in. We work outside when it's not the rainy season. I need a bright place to work because it is difficult to see the stitches."*

Forty four percent (22/50 artisans) of the artisans interviewed said they did not speak their language (Jñatrjo). Additionally, 64% of the artisans interviewed (32/50 artisans) expressed some concern for the loss of their culture (specifically the making and wearing of traditional underskirts and sashes). The semi-structured interview data results also suggest that few artisans have knowledge of their cultural history (i.e. Mazahua culturally significant stories) because this Indigenous knowledge has been lost over the generations. What has remained however is the exchange of crafting techniques and processes through the generations. A forty-three-year-old artisan spoke of her reasons for continuing her craft activities stating *"Yes, because if we stop doing this craft we lose our culture."* Echoing this another artisan (age 54) said "*Yes, because I know the techniques are getting lost because younger women are not wearing them. I feel I'm contributing to keep this craft. My age women are only the ones who wear the dress because no one is buying them anymore and we have to make other things to sell [like these things] at my shop."* Although many artisans voiced concerns for the loss of their culture, some communities still firmly practice their traditions. A thirty-two-year-old artisan expanded on this stating "*In my community our Mazahua culture is not at risk. In my family we have 3 generations of women doing our crafts. I will teach my daughter to continue and tell them it's our tradition. Boys and girls also do embroidery in our community."*

2.5 Spiritual Capital: Meaning of Patterns and Cultural Knowledge

Analysis indicates that very few artisans knew of the cultural meanings and significance of the patterns they create. The age of the artisan was not a limiting factor of cultural knowledge

as the age range of the artisans in this study was between 19-81 years old. Some older artisans had no knowledge while some younger did and vice versa. Artisans have knowledge of and belief in the traditional meanings or significance of Mazahua patterns (18% or 9/50 artisans) however, 82% (41/50) reported having no knowledge of culture or belief in the spiritual meanings of the Mazahua patterns. When asked "*How important is knowledge of Mazahua traditions like the stories or meanings of the patterns you use?"* one sixty-six-year-old artisan stated *"I know nothing about our Mazahua culture. My father never spoke about the Mazahua."* Similarly, another artisan (age 64) stated *"I don't have enough knowledge of Mazahua culture. I don't know about Mazahua history. I didn't talk with my grandmother or grandfather. I would like to know more."* The meanings of the particular patterns used in crafts were also addressed and a thirty-six -year-old artisan replied *"I'm pretty sure the patterns have meaning because they are antiques but I don't know them"* while another artisan (age 22) mentioned *"I only know of the Mazahua Star. I don't know if my mother or grandmother know."* In contrast, some artisans felt that there were no particular meanings to the Mazahua craft patterns and one sixty-four-year-old artisan stated *"No, there's no meaning to the patterns. These are only figures I like."*

For those individuals (8/50 = 16%) who had knowledge of the meaning of Mazahua patterns, only one weaver (2%) felt they had deep knowledge of the pattern meanings. A thirty-two-year-old artisan stated *"I know about this [spiritual meanings], in the school they taught me about our culture and the meanings of the figures. The Mazahua star was the image of our county. The Mazahua Star used to be the image of the San Felipe Del Progreso municipality. The county takes responsibility to teach everyone about our culture. The star has the 4 cardinal points. The Jarra plant is used to make Pulque which is the drink of the gods. The Mazahua Guide is the curved Camino. The outer Camino are the houses of the towns (pueblo). The Carita is the classic border stitch made up of little faces."* Comparably, a forty-year-old artisan stated *"The Mazahua Star is a guide. I use the Tree of Life as a figure."* When asked about which animals she used, another artisan (age 26) said *"Only the horse because they are from here. The Mazahua Star represents the Mazahua we have inside us (inner Mazahua)."* Although eight of the

fifty artisans stated that they had knowledge, artisans did mention that their mothers or grandmothers have (or had) such knowledge.

In order to assess the spiritual connections (including ancestral connections) with craft this question was asked; "regarding crafting, does it have any spiritual meaning to you? If so, why? If not, why?" One 35-year-old artisan responded "*yes, because my mother knows about traditions and I want to show my kids and I want to continue the culture and traditional dress. I learn from my mother...My mother learned how to make traditional skirts from my grandmother. They continue to make these kinds of traditional dresses."*

2.6 Crafting and 6 Capitals:

The following Table 2 describes artisan responses to proxy questions regarding human, natural, financial, physical, social/cultural, and spiritual capitals by the four Mazahua communities and then the entire sample. Proxy questions from the interviews were chosen based on the most robust and complete responses regarding the forms of capital. Three questions were chosen for human capital based on the multiple dimensions of human capital involved in crafting (making, learning, and elders). One question was chosen for natural capital to address the crafting process (what is used), one for financial capital, and one for physical capital. Two questions for social/cultural capital were chosen to address the social aspects (who is involved) and the cultural aspects (how artisans feel) regarding their crafts. Finally, one question was chosen for spiritual capital. Table 2 also indicates the total percentage of responses to the proxy questions per community as well as the entire sample of artisans (n=50) in the semi-structured interviews.

Proxy Questions related to Capitals	San Felipe Santiago Community (10 Artisans)	Loma de Juarez Community (8 Artisans)	San Antonio de la Laguna Community (18 Artisans)	Fresno Nichi Community (14 Artisans)	Total % of Artisans (N=50)
Human Capital: Tell me about the process of making this craft? How did you learn them? How important are elders in the process of crafting?	**90%** (9/10) mentioned mothers, grandmothers, family members, elders as skilled or knowledgeable artisans.	**75%** (6/8)	**94.4%** (17/18)	**100%** (14/14)	**90% (45/50)**
Natural Capital: What processes do you participate in? Why? (why don't you do other processes?)	**30%** (3/10) of the artisans use indigenous plants to dye their yarn.	**0%** (0/8)	**0%** (0/18)	**0%** (0/14)	**6% (3/50)**
Financial Capital: How important are cash savings in the process of crafting?	**70%** (7/10) of the artisans save money for crafting materials.	**62.5%** (5/8)	**22.2%** (4/18)	**7.1%** (1/14)	**34% (17/50)**
Physical Capital: What processes do you participate in? Why? (why don't you do other processes?)	**90%** (9/10) of the artisans purchase industrial yarn instead of making it from sheep's wool.	**100%** (8/8)	**72.2%** (13/18)	**100%** (14/14)	**88% (44/50)**
Social/Cultural Capital: Do you do crafting activities alone or with others? Why? (how many others) Where? (public place or private)	**70%** (7/10) of the artisans prefer to craft alone.	**100%** (8/8)	**72%** (13/18)	**92.8%** (13/14)	**82% (41/50)**
Social/Cultural Capital: Regarding crafting, do you feel it contributes to your Mazahua culture? Why?	**60%** (6/10) of the artisans expressed concern for the loss of culture.	**87.5%** (7/8)	**66.6%** (12/18)	**28.5%** (4/14)	**58% (29/50)**
Spiritual Capital: How important is knowledge of Mazahua traditions like the stories or meanings of the patterns you use?	**20%** (2/10) of the artisans have knowledge of culture or belief in the spiritual meanings of patterns.	**50%** (4/8)	**38.8%** (7/18)	**35.7%** (5/14)	**36% (18/50)**

Table 2: Four Mazahua Community Artisan Semi-structured Interview Responses on Capitals

The data from semi-structured interviews shows that there are differences and similarities in how each of the four Mazahua communities of artisans view the 6 forms of capitals. In describing their craft process, a high percentage of artisans mentioned their mothers, grandmothers, family members, and elders as skilled or knowledgeable artisans. These individuals can be considered the Human capital involved in the crafting process. The community of Fresno Nichi had 100% (14/14 artisans) that mentioned these types of Human capitals followed by San Antonio de la Laguna at 94.4% (17/18 artisans) then by San Felipe Santiago at 90% (9/10 artisans), then lastly Loma de Juarez at 75% (6/8 artisans). Out of the total artisans interviewed 90% (45/50) artisans mentioned mothers, grandmothers, family members, and elders as skilled or knowledgeable artisans. Natural capital was found to be unexpectedly low regarding its use in the process of crafting. The communities of Loma de Juarez, San Antonio de la Laguna, and Fresno Nichi mentioned that they did not use the indigenous plants in their environments to

dye yarn (0%) while only San Felipe Santiago had artisans that did use local plants for dyeing yarn 30% (3/10 artisans). Only 6% (3/50 artisans) of the artisans participating in the interviews mentioned use of local plants for dyeing yarn. Financial capital had a varied response from all four communities regarding cash savings for crafting. San Felipe Santiago reported 70% of their artisans (7/10) had cash savings for crafting, followed by 62% of the artisans (5/8) in Loma de Juarez, then 22.2% of the artisans (4/18) in San Antonio de la Laguna, and lastly 7.1% of the artisans (1/14) in Fresno Nichi. A total of 34% (17/50) artisans reported having a cash savings for crafting. The Physical capital used in the crafting process was found to be industrial yarn. All of the artisans in both the communities of Loma de Juarez 100% (8/8) and Fresno Nichi 100% (14/14) reported use of industrial yarns while 90% (9/10) in San Felipe Santiago and 72.2% (13/18) of the artisans in San Antonio de la Laguna reported use of industrial yarn. It was found that 88% (44/50) of the artisans in the interviews used industrial yarns instead of making yarn from sheep's wool. The social aspects of Social/Cultural capital was assessed by asking if artisans crafted alone or with others. All of the Loma de Juarez artisans 100% (8/8) responded that they work alone followed by 92.8% (13/14) artisans in Fresno Nichi, 72% (13/18) in San Antonio de la Laguna, and 70% (7/10) in San Felipe Santiago. The total number of artisans that crafted alone was 82% (41/50 artisans). The cultural aspects of Social/Cultural capital was assessed by asking if crafting contributed to culture. Loma de Juarez had the largest number of artisans 87.5% (7/8) who indicated concern for the loss of Mazahua culture preceded by 66.6% (12/18) of the artisans in San Antonio de la Laguna, 60% (6/10) of the artisans in San Felipe Santiago, and 28.5% (4/14) of the artisans in Fresno Nichi expressing concern. The concern for cultural loss was voiced by over half of the artisans 58% (29/50). Lastly, Spiritual capital was assessed by asking artisans about their knowledge of the spiritual meanings in their crafts. Exactly 50% (4/8) of the artisans in Loma de Juarez reported knowledge of spiritual meanings of patterns/motifs while 38.8% (7/18) artisans in San Antonio de la Laguna, 35.7% (5/14) in Fresno Nichi, and 20% (2/10) in San Felipe Santiago reported such knowledge. In total, 36% (18/50) of the artisans interviewed said that they had knowledge of the spiritual meanings of their crafts.

The act and process of crafting may have strong linkages with Mazahua artisan livelihood in connection with Human, Social/Cultural, and Spiritual capital based on the artisans' higher rankings of these capitals in the Verbal Surveys conducted. The distribution of individual Mazahua artisan rankings of capital from each community taken from the verbal surveys is illustrated in Figure 15. As data collection was by word of mouth (snowball sampling), a different number of respondents participated from each community.

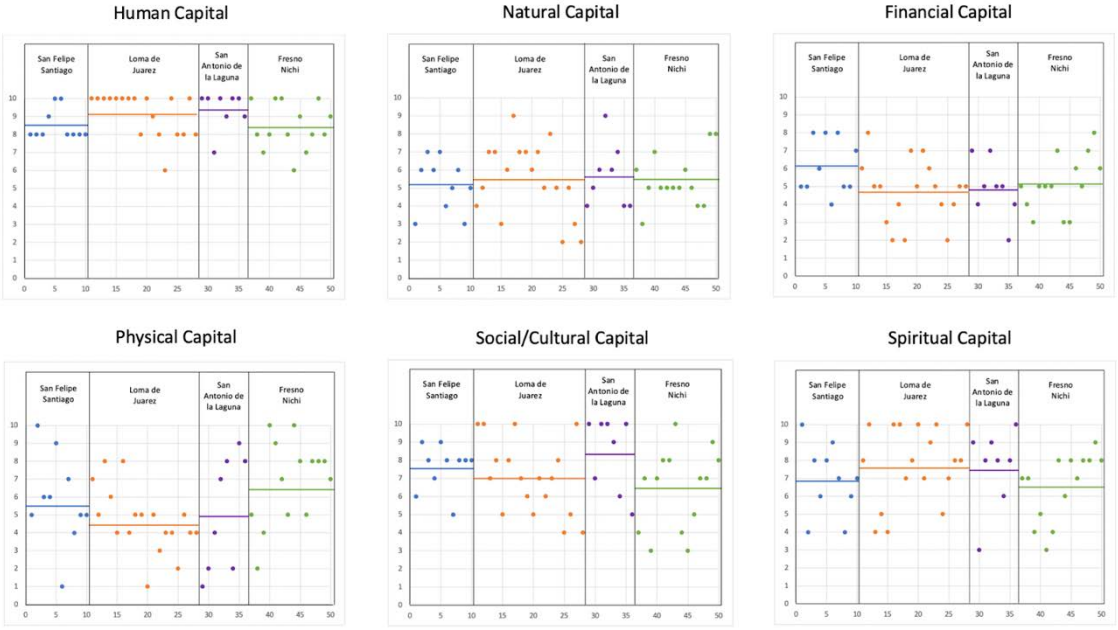

Figure 15. Mazahua Artisan Verbal Survey Ranking Distribution of Capitals

Table 3 shows the Standard Deviation, Median, and Mean of the 6 forms of capitals as ranked by the artisans from the four communities. Physical capital had the largest standard deviation between communities. Loma de Juarez rated Physical capital the lowest (Mean 4.66) and Fresno Nichi the highest (Mean 6.85). Spiritual capital had the second largest standard deviation between the communities. Fresno Nichi rated Spiritual capital the lowest (Mean 6.57) and Loma de Juarez the highest (Mean 7.77). Close behind Spiritual capital, Social/Cultural capital had the third highest standard deviation between the communities.

Capitals	San Felipe Santiago Community (N=10)	Loma de Juarez Community (N=8)	San Antonio de la Laguna Community (N=18)	Fresno Nichi Community (N=14)	Total SD (N=50)	Total MEDIAN (N=50)	Total MEAN (n=50)
Human Capital	SD: 0.84 MEDIAN: 8 MEAN: 8.50	SD: 1.20 MEDIAN: 10 MEAN: 9.16	SD: 1.06 MEDIAN: 10 MEAN: 9.37	SD: 1.28 MEDIAN: 8 MEAN: 8.42	**1.17**	**9**	**8.86**
Natural Capital	SD: 1.47 MEDIAN: 5.5 MEAN: 5.20	SD: 2.03 MEDIAN: 5.5 MEAN: 5.44	SD: 1.76 MEDIAN: 5.5 MEAN: 5.62	SD: 1.45 MEDIAN: 5 MEAN: 5.42	**1.69**	**5**	**5.42**
Financial Capital	SD: 1.52 MEDIAN: 5.5 MEAN: 6.10	SD: 1.74 MEDIAN: 5 MEAN: 4.72	SD: 1.64 MEDIAN: 5 MEAN: 4.87	SD: 1.56 MEDIAN: 5 MEAN: 5.14	**1.66**	**5**	**5.21**
Physical Capital	SD: 2.52 MEDIAN: 5.5 MEAN: 5.80	SD: 1.81 MEDIAN: 4.5 MEAN: 4.66	SD: 3.22 MEDIAN: 5.5 MEAN: 5.12	SD: 2.34 MEDIAN: 7.5 MEAN: 6.85	**2.46**	**5**	**5.61**
Social/Cultural Capital	SD: 1.26 MEDIAN: 8 MEAN: 7.60	SD: 2.04 MEDIAN: 7 MEAN: 7.05	SD: 2.06 MEDIAN: 9.5 MEAN: 8.37	SD: 2.24 MEDIAN: 7 MEAN: 6.42	**2.03**	**7**	**7.36**
Spiritual Capital	SD: 1.96 MEDIAN: 7 MEAN: 6.90	SD: 2.12 MEDIAN: 8 MEAN: 7.77	SD: 2.19 MEDIAN: 8 MEAN: 7.62	SD: 1.86 MEDIAN: 7 MEAN: 6.57	**2.04**	**8**	**7.21**

Table 3. Four Mazahua Community Artisan Verbal Survey Capital Rankings

Artisans rated their access to Human capital the highest (Mean of 8.8, S.D. of 1.17) out of the other forms of capital. Natural capital was ranked second lowest (Mean of 5.42, S.D. of 1.69). Financial capital was ranked lowest out of the six capitals (Mean of 5.21, S.D. of 1.66). Physical capital (Mean of 5.61, S.D. of 2.46) ranked a bit higher than Natural capital. Artisans ranked Social/Cultural capital access the second highest (Mean of 7.36, S.D. of 2.03) after Human capital. Mazahua stitching/crafting circles also serve as social circles within which social networks take place and the exchange of cultural knowledge on crafting techniques, patterns, and processes. These social stitching/crafting circles provide an opportunity for family interaction within kinship-based circles and socialization in friendship-based circles. Figure 16 Illustrates the mean averages of capital access rankings from the four Mazahua artisan communities and figure 17 depicts the total Mean of Mazahua artisan (n=50) rankings of capital assets as related to their crafts and crafting activities based on the proxy questions.

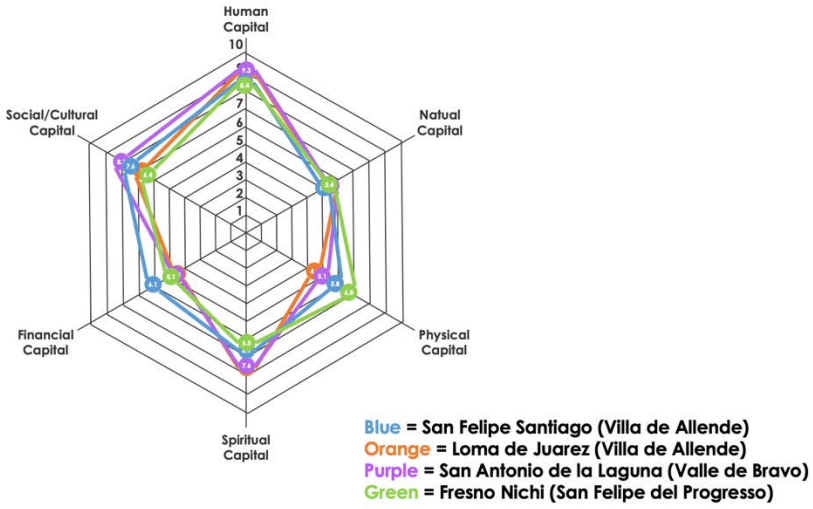

Figure 16: Mazahua Artisan Capital Access Rankings from Four Communities

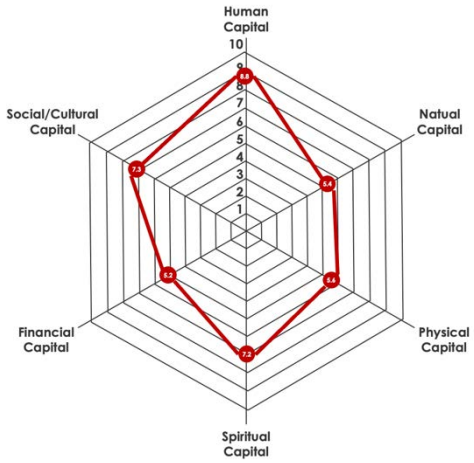

Figure 17: Spider Diagram for Mazahua Artisan Total Averages of Capital rankings

Mazahua artisans ranked Spiritual capital access (Mean of 7.2, S.D. of 2.04) the third highest out of the six capitals. This high ranking is supported by the semi-structured interview data (n=50) where artisans reported that the act and process of Mazahua crafting can be seen as the making of connections to ancestors and family members who have passed away like mothers and grandmothers. Several artisans reported thinking of these family members when they did their crafts while others spoke of the spiritual powers of their crafts and the spiritual gifts of crafting talent that was bestowed on them from God. The wearing of crafted underskirts and

sashes at religious festivals was also noted in the observational study as an important activity that provided Indigenous identity and spiritual satisfaction. Here, Mazahua cultural identity is expressed through crafting for both household consumption and sales as a business as many artisans felt that they could identify where an artisan was from based on their traditional dress and the style (patterns, techniques, colors) of the types of crafts they made. Cultural identity was also indicated by artisans as critical to financial income from crafting (Financial capital) as many reported that they were expected to wear their traditional dress in order to participate in government sponsored events. Artisans reported income from crafting between 200 to 1000 pesos per week with 100 to 300 pesos per sale. Artisans were not comfortable about discussing their annual incomes outside of their crafts and so no data regarding total household income was collected.

Conclusion

This Ethnographic research study provided a *local* perspective of Indigenous Mazahua crafting process and activity in the context of small-scale entrepreneurial endeavors in order to analyze crafting through an Indigenized lens as an alternative and or additional livelihood option outside subsistence farming. This lens provided a way to view sustainable entrepreneurship from the point of view of the Indigenous artisan to see how these artisans as petty-commodity producers achieve wellbeing and livelihood through their crafts. Results suggest that Indigenous crafting serves the dual purposes of personal creative output that impacts artisan wellbeing and cultural production and sales that impacts individual livelihood.

The first research question in this study asked “In what ways does the Act of Crafting influence, enhance, or affect Mazahua wellbeing?” The semi-structured interviews and verbal surveys indicated that Mazahua artisans view the act of crafting as psychological “therapy” allowing the artisan to have creative expression while also providing relaxation, happiness, and satisfaction in addition to a sense of focus, concentration which are considered forms of mindfulness attributed to wellbeing (Grabovac, Lau & Willett 2011, Tarrasch 2015). The act of crafting can be seen as building psychological resilience for Mazahua artisans. Based on the

observations conducted, the actual act of crafting helps to instill a feeling of family as stitching/crafting circles are often kinship-based and serve as a social activity providing social interactions, community involvement, and a sense of belonging.

Crafting and the artisan's relationship with their natural ecosystem environment (forests, fields, and streams) has changed from previous generations. Mazahua artisans today prefer to purchase industrial yarns in a variety of modern colors rather than producing yarn from natural sheep's wool then dying it with local plants foraged from the land as their grandparents did because it is easier and takes less time to do so. This dependence on industrial yarns and chemical dyes may have inadvertently reduced Mazahua artisan dependence on nature in the act and process of creating their Indigenous crafts. The question comes to mind as to whether Mazahua artisans could strengthen their craft's connections with nature if they were to explore a renaissance of traditional craft processes (making yarn from sheep's wool and dying natural yarn using Indigenous plants) and how these connections could enhance their social, cultural, and spiritual wellbeing with respect to Indigenous concepts like Place Thought. In other words, could the reification of cultural preservation as embodied in the production of naturally made ethnic crafts improve artisan wellbeing as well as increase livelihood? Place Thought was observed to exist in the continued use of animal and other natural motifs like stars and plants (corn and agave) and further research into the ethno-aesthetics of Mazahua artisan crafts is needed to more deeply understand craft's linkages with Place Thought and Indigenous wellbeing.

Artisans in general were observed to prefer the brighter modern industrial colors to the more muted natural dyes from Mazahua traditional plant dyes although a variety of yarn colors are available at local craft shops and marketplaces. The majority of contemporary crafts observed, specifically the *mbox kjezhe* underskirts, have brighter more vibrant colors today as opposed to the older more traditional underskirts from the past made from handmade naturally dyed yarn. Young Mazahua artisans can be seen wearing vibrant colorful patterns to reflect more festive moods.

A large number of artisans reported that they felt their crafts and crafting activities contributed towards the preservation of their Mazahua culture. These comments illustrate how

Mazahua artisans internalize their crafts and crafting as efforts for the sake of cultural production and maintenance. As a result of low use of Natural capital through the use of industrial yarns, the concepts of Place Thought (Basso 1996, Watts 2013) and Buen Vivir (Gudynas 2011) and the connection they bring to wellbeing may no longer directly link with Mazahua artisan craft production. Instead, Indigenous wellbeing may be interpreted by Mazahua artisans via Physical capital as the production and preservation of Mazahua culture through the concept of Cultural Efficacy (Houkumau & Sibley 2010). Additionally, this Physical capital is used toward artisan subjective wellbeing (Diener et al 1999, Houkumau & Sibley 2010) as expressed through personal artisan satisfaction and feelings of accomplishment.

The linkage between spiritual wellbeing and crafts is questioned as the majority of artisans did not feel there were any spiritual meanings to the patterns they created, although about a third of the artisans did mention knowledge of the meanings of the patterns or of the spiritual healing powers of the crafts they produced. Spirituality and spiritual wellbeing and its relationship with the act and process of Mazahua crafting will require additional research to determine how artisan spiritual wellbeing is enhanced.

The cultural identity of individual artisans was observed to impact artisan wellbeing by developing a sense of belonging to a community. The data analysis suggests that Indigenous crafts (its act and process) forms the core of artisan ethnic identity which influences artisans' sense of community, sense of satisfaction/accomplishment, and sense of cultural efficacy–all vital to Indigenous wellbeing. Traditional dress is central to Mazahua artisan identity. Many Mazahua artisans expressed pride and even empowerment in wearing their community's traditional dress. Some of the interviewed artisans expressed concerns that younger artisans were beginning to wear more western clothing rather than traditional dress which brings to question the future of Mazahua artisan identity concerning how their traditional dress will continue to enhance wellbeing through future generations of artisans.

The second research question in this study asked "In what ways does the Act and Process of Crafting influence or affect Mazahua livelihood?" In this research, Mazahua livelihood is defined as the artisan's access to six forms of capital (Human, Natural, Financial, Physical,

Social/Cultural, and Spiritual). Human capital access was ranked the highest of the six capitals. This high ranking may have resulted because highly skilled Mazahua artisans rely on themselves and their skilled family members in craft production. Although these artisans are highly skilled, the data suggests that entrepreneurial training or sewing machine training could help to increase Mazahua artisan Human capital even further especially in crafting cooperatives and future craft ventures that could be developed.

Mazahua artisans reported that their craft sales supported their financial income (Financial capital) in some respects. Although only about a third of the artisans reported having any savings, many artisans said that they invested what little money they had in their crafting materials (Physical capital). Both the semi-structured interview and verbal survey data results indicate that crafting impacts artisans' perceptions of their access to things like fire wood, yarn, dyes, etc. which in the development literature is viewed as Physical capitals. The development of a future Indigenous craft venture and the impacts it will have on Human, Natural, Financial, and Physical capitals will need to be further explored. The literature on development trade-offs suggests that increases in one capital may lead to increases or decreases in another causing stresses. How a future Indigenous craft venture will impact artisan livelihood must also be further explored as there will always be risks to social/cultural capital associated with turning the social/cultural asset of ethnic arts and crafts into a business to create financial capital.

Discussion

The following conceptual framework shown in Figure 18 is a revision of the previously shown conceptual framework (Figure 1). The original conceptual framework (Figure 1) was used as an analytical tool for the data analysis. The analysis resulted in a revision to the conceptual framework. This revision is presented to specifically show how Mazahua artisans in this study view crafts and crafting activities in terms of their linkages between sustainable livelihood and concepts of wellbeing:

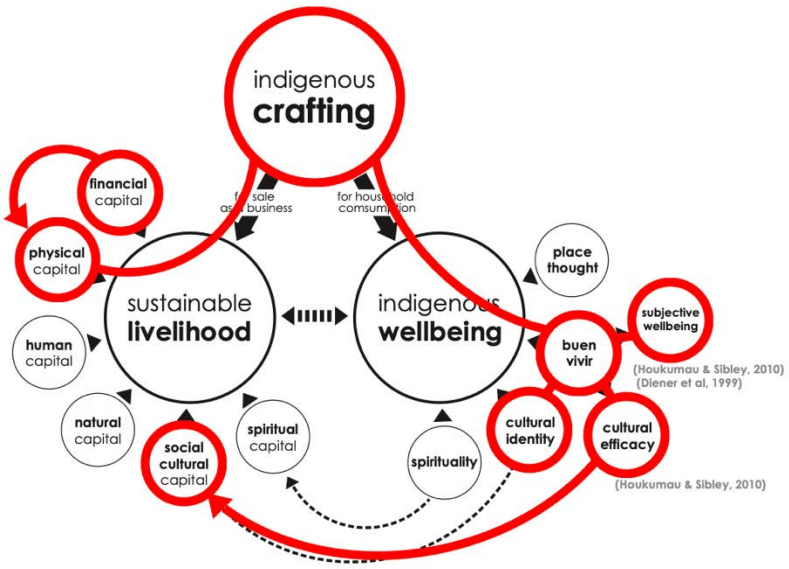

Figure 18. Revised Conceptual Framework

Contrary to the literature reviewed regarding the production of textiles (Perez & Gubler, 1996), the data collected in this study suggests that Mazahua artisans may no longer cull wool from their sheep to make yarn as well as no longer harvest Indigenous plants from their environment to make dyes and prefer instead to purchase cheap industrial chemically dyed yarns from their local marketplaces. This activity shifts artisan dependence on the natural resources provided by their environments (natural capital) to the purchase of goods like industrially produced yarn (physical capital). Figure 18 shows how Physical capital may have replaced Natural capital in the production of crafts and how this replacement may have shifted the linkage between natural capital and wellbeing to physical capital. In other words, Mazahua artisan use of industrial yarn may have reduced artisan's dependence on nature regarding craft production. This reduction could possibly affect Mazahua artisan's views of wellbeing. Concepts like Place Thought (Basso, 1996, Watts 2013) and Buen Vivir (Gudynas, 2011, Giovannini, 2012, Albarrán González, 2020) that strongly tie wellbeing to the environment are now brought to question and may have less relevance to Mazahua crafting however more exploration is needed to confirm this. Natural capital, although not necessarily harvested from the environment, does appear in the Mazahua crafts as motifs of animals and plants.

Although artisans noted that crafting requires concentration and focus which are considered forms of mindfulness attributed to wellbeing (Grabovac, Lau & Willett 2011, Tarrasch 2015), based on the results of this research, wellbeing with regards to craft production appears to have more to do with subjective wellbeing (Diener et al 1999, Houkamau & Sibley 2011). This is evidenced by the fact that artisans often referred to crafting as a way of coping with personal issues much like an adaptive capacity towards psychological resilience. Additionally, the concept of Buen Vivir takes on more of what Houkamau & Sibley (2011) refer to as *cultural efficacy* in that Mazahua artisans, according to the data, view the act of crafting as a way to participate in the maintenance and preservation of their culture. The concept of Buen Vivir that most notably incorporates the wellbeing of nature shifts to one of the wellbeing of culture or more specifically Mazahua artisan cultural preservation and sustainability.

Future Research

This research focused on the linkages between Indigenous crafting, sustainable livelihood, and Indigenous wellbeing in the context of social entrepreneurship in an attempt to understand how craft entrepreneurship might indigenize sustainable entrepreneurship for Indigenous artisans and their communities, with a goal of leveraging their already significant craft production to alleviate poverty and preserve their Indigenous language and culture. Questions emerge regarding how entrepreneurial crafting activities will positively and negatively impact household social relationships, gender roles, and social cultural and financial capital access. Additional questions regarding Indigenous artisan wellbeing in respect of Indigenous identity needs further investigation. The concept of authenticity suggested in the literature needs exploration specifically regarding how artisans view their crafts (ethno-aesthetics) and how consumers of crafts (tourists) view craft value. Mazahua artisan wellbeing regarding craft production and their relationship with nature also needs further exploration. Could the return to natural yarn production from sheep's wool and the natural dyeing of yarn with Indigenous plants bring artisans closer to nature and in turn raise their levels of wellbeing? Regarding capital access, the data analysis shows that a small sample of Mazahua artisans do have access to a

range of types of capital already. Currently the act and process of Mazahua crafts for sale as a business provide relatively small amounts of financial capital requiring little human capital (labor) and physical capital (crafting supplies), but when these activities scale up as with a venture start-up there may be important changes. Taking a social activity that has deep cultural meaning like Indigenous crafting and intensifying it to a business venture could have both positive and negative effects on artisans, their households, and their communities. What happens to human capital when artisans are faced with larger production orders of crafts for sale? Will increases in financial capital due to craft sales lead to increases in physical capital or will physical capital be stressed? If natural capital is to be used in the craft production process (return to hand culled wool and naturally dyed yarn) how will this impact artisan relationships with nature and their concepts of wellbeing? These questions and more must be addressed as Vitu™, the fair-trade fashion product brand venture described in the introduction of this paper, moves forward and begins to be co-developed with Mazahua artisans.

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CHAPTER 3

PAPER TWO

Vitu™: Indigenous Adaptive-Transformative Agency as a means of Indigenizing Sustainable Entrepreneurship for the Improvement of Household Wellbeing and Livelihood

Abstract

Sustainable entrepreneurship is based on Euro-Western perspectives, concepts, and ideas. This becomes problematic when sustainable entrepreneurship experts and researchers are working together with Indigenous peoples in pursuit of sustainable community development. Sustainable community development has been framed in terms of community agency, which is consistent with political idealist perspectives that emphasize agency over structure. However, both sustainable entrepreneurship and structure-agency dualism stem from Euro-Western individualism. Sustainable entrepreneurs are seen as individual enterprise creators exercising individual agency. Although more relational concepts of agency have been formulated, they fall short of capturing the collectivistic, interconnected nature of Indigenous communities. This paper seeks to indigenize the concepts of sustainable entrepreneurship and agency to make them more useful for Indigenous communities. An argument is built on Indigenous perspectives of agency (Indigenous Adaptive-Transformative Agency) and wellbeing (Buen Vivir). Verbal survey data (n=50) on Mazahua Indigenous artisan capital access is used in support of a fair-trade Indigenous fashion goods venture called Vitu™ that would increase the collective agency of Indigenous women artisans. Vignettes on Mazahua women artisans of Toluca Mexico supported by semi-structured interviews (n=50) and case studies on Indigenous Kuna artisans help bring into focus the key issues of agency, wellbeing, and livelihood. 4.5 months of observational study provide context to how Mazahua artisans currently exercise adaptive and transformative agency. Lastly, the Vitu™ venture is proposed as a more culturally sensitive approach to ensuring justice, equity and inclusion for indigenous peoples through its focus on capacity building for household livelihood and wellbeing in the context of small-scale sustainable entrepreneurial activities.

Keywords: Adaptive agency, Transformative agency, Indigenous Wellbeing, Sustainable Entrepreneurship, Indigenization

Introduction

Indigenous community development through small-scale entrepreneurial activities such as cultural craft-based venture creation provides a means to explore the application of sustainable entrepreneurship and its impacts on livelihood and wellbeing. Vitu™ is proposed here as an Indigenous women owned and operated fair trade fashion goods venture based on Mazahua ethnic arts and crafts in Mexico. This venture was co-designed with Indigenous Mazahua artisan communities. A main argument of this paper is that the creation of Indigenous ventures like Vitu™ can contribute to *indigenize* sustainable entrepreneurship. As a concept and practice, "sustainable entrepreneurship" has been based on Euro-Western perspectives and worldviews, which lead to challenges in its application by Indigenous communities. Despite these challenges, sustainable entrepreneurship can support Indigenous enterprises, which have been found to significantly contribute to community development by improving the quality of life of Indigenous peoples (Vázquez Maguirre, Portales, & Velásquez Bellido 2018). Sustainable entrepreneurship, however, needs to consider that quality of life for Indigenous peoples involves more than just raising the standard of living and involves concepts of wellbeing and exercising collective agency (Kite & Davy 2015).

The concepts of Sustainable Entrepreneurship, agency, and wellbeing are all founded on Euro-Western notions of individualism (Chirkov et al 2003, Harper 2008, Moroz et al 2010, Pelling 2011,), and this goes cross current to Indigenous communities that are generally collective and interconnected (Apgar, Argumedo, & Allen 2009, Larsen & Johnson 2012). What is needed is a way to indigenize these concepts. The *Indigenization Process* is one marked by the application of Indigenous knowledge and methodologies as a means to develop and define new theoretical frameworks, new data collection methods and broadening the existing literature (Chilisa & Tsheko 2014). Indigenizing sustainable entrepreneurship, and other Western concepts such as agency

and wellbeing, through the infusion of Indigenous-based approaches and perspectives can facilitate and enhance their in situ applicability as well as to potentially co-produce new knowledge.

As Indigenous communities pursue more entrepreneurial activities, we need to ask how their aspirations and visions of agency and wellbeing are impacted both positively and negatively by global and local socio-cultural-political structures. The first step to indigenize Sustainable Entrepreneurship is to emphasize agency over structure, which is consistent with critical theories and political idealist perspectives focused on people's emancipation from oppressive power structures (Manuel-Navarrete, 2010), and Indigenous emphasis on emancipation from colonialism. Political idealism challenges political realist perspectives, which portray human agency as severely limited by social dynamics out of any agent's control. The idealist perspective focuses on the link between social-ecological structural dynamics and emancipatory agency (Manuel-Navarrete and Buzinde, 2010).

The second step consists of expanding the very notion of agency beyond the individual towards the collective and beyond the human towards the social-ecological. Both political realism and political idealism are based on Euro-Western perspectives of human agency. Although somewhat distant from Indigenous perspectives, the idealist approach is more consistent with decolonization and Indigenous rights, including efforts to "co-create" their futures towards sustainable development in their communities through entrepreneurial activities. In the context of entrepreneurship, Harper (2008) advocates a kind of "entrepreneurial agency" that is not just centered on the individual agent but shared amongst entrepreneurial teams and argues that this expansion of the concept of agency moves beyond conventional concepts of individualist agency dominating the field of entrepreneurship. Likewise, Peredo and McLean (2013), call for the need to "enlarge our understanding of entrepreneurship in ways that allow for different cultural embodiments" and argue for the acknowledgement of how Indigenous cultures create value that may be different from standard (Euro-Western) conceptions of economic theory (pp. 614-615). Euro-Western concepts such as sustainable entrepreneurship, agency and wellbeing must be

seen through an Indigenous lens so that they can have greater value to Indigenous peoples, specifically Indigenous artisans who seek to create Indigenous enterprises.

More expansive entrepreneurial concepts of agency (collective agency, adaptive agency, transformative agency) can help Indigenous people who seek community development through their entrepreneurial activities. At the same time, sustainable entrepreneurship approaches can benefit from concepts of human agency that more closely adhere to Indigenous social-cultural perspectives such as Place-Thought and Buen Vivir to reframe sustainable entrepreneurial agency as a collective/communal activity. Fieldwork from Mazahua artisan entrepreneurship helps to illustrate this leading to three frameworks and the proposal for an indigenized form of agency (i.e. Indigenous Adaptive-Transformative Agency). Through an extensive literature review the concept of Indigenous Adaptive-Transformative Agency is offered as a means to Indigenize sustainable entrepreneurship. Additionally, an argument for the adoption of Indigenous Adaptive-Transformative Agency is made through examples from field studies conducted with Mazahua Indigenous petty-commodity artisans in Toluca Mexico and their entrepreneurial crafting activities by focusing on how these activities link to their livelihoods and sense of wellbeing.

This paper offers a discussion on extending human agency to the collective through the incorporation of Place Thought and Buen Vivir with the purpose to explore the impact of the socio-cultural-political structures that influence and are influenced by the use of six forms of capital in enabling or acting upon Indigenous collective agency, then concludes with proposing Vitu™ as a fair-trade Indigenous fashion goods venture based on the Indigenized concept of Indigenous Adaptive-Transformative Agency. Indigenous Adaptive-Transformative Agency is offered as a tool to focus on capacity building in the context of Indigenous household livelihood and wellbeing and a more culturally sensitive approach to ensuring justice, equity and inclusion for indigenous peoples in the context of small-scale sustainable entrepreneurial activities. Through this proposed Indigenous enterprise, Indigenous Adaptive-Transformative Agency can be seen as a way of Indigenizing sustainable entrepreneurship so that Indigenous crafting communities of practice can fulfill their aspired household wellbeing and livelihood outcomes.

Methods

Ethnographic observational study was conducted in the Mazahua artisan communities of Toluca Mexico for 4.5 months which provided social, cultural, and local context (structure and agency complex) for the future development of the Vitu™ fashion goods venture. In order to determine how the various forms of capital affect or are affected by structure and agency for this paper, semi-structured interviews (n=50) were conducted with Indigenous Mazahua artisans in four communities in three municipalities in Toluca Mexico in the State of Mexico. Proxy questions were used in the semi-structured interviews to gauge artisan use of six forms of capital in the act and process of crafting traditional articles. Verbal Surveys (n=50) were also conducted in the four Mazahua artisan communities regarding six capital access rankings on a scale from 1 to 10 (1 being low access and 10 being high). A scale with added 'emoji' facial expressions was developed and brought to the verbal survey sessions. Artisans were asked rating questions and instructed to also look at the emoji scale when answering. Due to the time required to build relationships and trust in the Mazahua communities to search out participants for this research, respondents were capped off at 50 for the semi-structured interviews and verbal surveys. An opportunistic snowball (O'Leary 2004) location stratified sampling provided the respondents for this study. This study focused on skilled artisans between the ages of 19-81 years old who can create the more difficult and culturally significant Mazahua underskirts and sashes. Both semi-structured Interview and verbal survey data were separated by location, coded, then analyzed using MS Excel. Verbal survey data were set on a 0-10 scale then put into spider diagrams.

Extending Human Agency to the Collective

The indigenization of sustainable entrepreneurship begins with adopting an approach that expands the focus on individual human agency to the social ecological systems where humans reside. Manuel-Navarrete (2010) states that, "human agency refers to people's ability to shape the sociopolitical structures which constrain their actions and the reasons for acting as they do" (pg. 782). In an attempt to integrate the concept of human agency within the framework of social-

ecological systems, Manuel-Navarrete & Buzinde (2010) go a step further in their consideration of *socio-ecological agency* that "characterizes human beings as ecological actors, social actors and individuals all at the same time" (pg. 136). In essence, the concept of socio-ecological agency expands human agency concerning these multiple scales of action (ecological, social, and individual). The authors state that socio-ecological agency "requires an understanding of reflexivity" and "involves the emergence of a collective form of self-reflection about our shared identity" (pg. 143). More specifically, socio-ecological agency provides a "fundamental interconnectedness" where the "biophysical facts are significantly shaped by social construction, while at the same time social phenomena are shaped by stimuli and constraints from the biophysical world" (pg. 138). On one hand, the multiple dimensions of ecological, social and individual actors in the SES are recognized and could provide (Western-based) perspectives to better integrate with Indigenous individuals and communities that could help them mobilize their efforts/actions at multiple scales. On the other hand, Indigenous individuals and communities, due to their collective worldviews, strive for 'interconnectedness' and the pursuit of socio-ecological agency can offer leverage in their positions in the balance between the social and biophysical worlds in which they live. The concept of social ecological agency moves the concept of human agency to that of the social ecological system which could resonate with the collective interconnected worldviews of Indigenous peoples.

The collectivistic nature of Indigenous communities and the worldviews of the individuals that comprise them requires yet another way to expand the concept of agency. Chari-Joseph et al (2018) states that collective agency and its resulting actions arise from the "beliefs, intentions, perspectives, values, and interactions" in the relationships between individuals illustrating the important role individual agency plays as a set of "socially shared beliefs, values, and norms that justify and motivate" them as actors in the market (pg. 2). Within Indigenous artisan communities, the capacity of artisans to act as individual actors in pursuit of their agency depends on their cultural belief systems and perceptions of self-identity based on their Indigenous cultural perspectives that are influenced by the structures of their social cultural environments and the

interactions they have within them. In other words, the capacity of individual Indigenous artisans depends on the collective actions of individual artisans whose belief systems and self-identity are influenced by their collective communities and the interconnected relationships that exist within their boundaries. The Indigenization of sustainable entrepreneurship, in the context of Indigenous small-scale entrepreneurial activities, therefore begins with considering the social of social ecological systems and the redefining of the concept of human agency to that of an individual's capacity to collectively take actions and make choices within the collective community and its external influences (both social and biophysical).

Exercising collective agency implies taking collective action on multiple dimensions of agency. Coulthard (2012) cites Lister (2003) with reference to her four axial dimensions of agency; everyday, strategic, personal, and political/citizenship agency. Everyday agency refers to the daily decisions regarding how individuals make a living (pg. 3). Strategic agency concerns the decisions individuals and communities make on long-term strategies (pg. 3). Personal agency relates to individual choice and political/citizenship agency relates to the ability of people to create greater change in their situation (pg. 3). Indigenous individuals and communities through an understanding of the interrelationship of agency and collective action can begin to negotiate "collectively" on an everyday, strategic, personal, and political/citizenship level. This collective negotiation can be seen as a kind of collective form of agency. Bandura (2000) explains that the increasing interdependence of social cognitive functions like efficacy and actions has set a precedence on the exercising of collective agency. He goes on to state that the shared beliefs of people in their collective action to reach their desired aspirations and outcomes is key to collective agency. As Indigenous perspectives tend to be collective regarding actions, the coupling of agency with collective action through collective agency seems prudent and appropriate as processes for Indigenous communities and communities of practice in their determination and pursuit of their desired outcomes. The idea of using collective action to exercise collective agency in community development therefore has the potential to better resonate with the collectivistic nature of Indigenous peoples and their communities.

The collective actions of Indigenous peoples exercising their collective agency can be seen as a means of self-determination through Indigenous perspectives. Larsen & Johnson (2012), through their discussion of Indigenous Geography, further unpack the human – nature relationship and the production of knowledge but from an Indigenous perspective. They go on to discuss the "places" that exist in the "co-production of knowledge" which they refer to as *the existential* (sense of being present in place), *the social* (sustained interpersonal fluid and non-linear engagement), and *the conceptual* (a holistic reality interconnecting humans and non-humans in a "storyscape"). Larsen & Johnson (2012) state that "the existential sense of place is deepened by realizing that the land is alive, populated by beings and locales possessing an agency directly evident in their capacity for change" (Larsen & Johnson 2012, pg. 7). In other words, non-human agency can exist and that the awareness and acceptance of non-human consciousness is essential to the process of Indigenous research discovery and collaboration in the context of transformative capacities (Larsen & Johnson, 2012). Larsen & Johnson (2012) conclude with the idea that awareness of place helps to ground both the human-nature relationship and the production of knowledge with the realization that both nature and knowledge are ever shifting, transforming, and evolving through space and time. It is through this realization that Western research and the Indigenous or Native "lifeworlds" can co-exist and co-produce new knowledge in a *decolonized methodology* (Smith 2012) that more directly and positively affects the Indigenous communities involved. Likewise, Kimmerer (2014) describes the fundamental Indigenous belief that the earth is populated with "non-human persons" and that the world would be different if we extended agency from humans to other species. She furthers that the concept of "reciprocity" is core to the idea of non-human agency in that giving back to the environment produces equilibrium. Through a coupling of Indigenous concepts of collective self-determination with that of non-human agency, Indigenous individuals and their collective communities can better bridge the gap between Western and Indigenous forms of existential knowledge and belief systems. Manuel-Navarrete, Buzinde, and Swanson (2021) discuss the importance of co-producing knowledge horizontally in the context of Indigenous peoples and Western researchers where Indigenous forms of knowledge are brought to an equal level or status with Western

sciences. The authors cite Diaz et al (2015) who state that the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) defines Indigenous knowledge systems as “a cumulative body of knowledge, practice and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment” (Diaz et al 2015 pg. 13, as cited in Manuel-Navarrete, Buzinde, and Swanson, 2021). These forms of horizontally co-produced knowledge have at their core the pursuit of collective agency which leads to collective self-determination of Indigenous peoples through the incorporation of the Indigenous or *collective* worldview that fundamentally recognizes human and non-human existence as integral to an awareness of *place*. Collective action as a means of exercising collective agency can in essence be seen as a form of collective self-determination that can ultimately lead to new forms of existential co-produced knowledge and belief systems between Euro-Western and Indigenous forms of knowledge.

There are actually several forms of knowledge and belief systems in the collectivistic *life-worlds* of Indigenous peoples that Euro-Western researchers in sustainable entrepreneurship must consider in their horizontal co-production of knowledge with indigenous communities. Whyte (2017) uses the term ‘Indigenous knowledges’ to encompass IK (Indigenous knowledge), TK (traditional knowledge), IKE (Indigenous knowledge of environment), and TEK (traditional ecological knowledge). Kimmerer (2011), in her book chapter titled *Restoration and Reciprocity: The Contributions of Traditional Ecological Knowledge*, notes that TEK is not only important to the aforementioned reciprocity with the ecosystem (the indigenous belief systems of restoration) but also vital to the revitalization of indigenous language and culture and the development of place-based sustainable economies as mentioned goals. In other words, one of the key goals of an *indigenized* sustainable entrepreneurship could be the revitalization of Indigenous languages and culture through TEK or place-based sustainable enterprise creation when considering its application in the co-development of Indigenous communities.

Indigenized Agency as Place-Thought

As previously discussed, Indigenous forms of knowledge are intertwined with human and non-human agency (Larsen & Johnson 2012, Kimmerer 2014), involve an understanding of Indigenous knowledges (Whyte, 2017) and are tied to an awareness of place (Larsen & Johnson 2012). In line with this, Watts (2013) examines how "agency is circulated through human and non-human worlds in the creation and maintenance of society from an Indigenous point of view" and the idea of *Place-Thought* as a means to access the "pre-colonial mind" of Indigenous peoples. Watts begins with a focus on Indigenous human origin stories and states that "these historical accounts…speak to the common intersections of the female, animals, the spirit world, and the mineral and plant world" and the interactions between these worlds as a single "society" (pg. 21). Watts states that grounded on the idea that the landscape possesses independent thought, Place-Thought is where humans and non-humans derive agency (pg. 21). In other words, unlike the Euro-Western epistemological / ontological framework that fundamentally separates humans from non-humans (the culture-nature or human-nature dialectic) where only humans have agency, Place-Thought is a pre-colonial perspective or cosmological framework that sees all things as having thoughts, desires, contemplation, and independent will or what can otherwise be deemed "agency." Here the concept of agency is taken to a final pre-colonial mind-set stage in which a full recognition and acceptance of Indigenous life-worlds is realized and accepted. The pre-colonial (not decolonized) cosmological perspective of *Place-Thought* can be yet another indigenized as well as a "well-established" position for Indigenous individuals and communities to take when in development negotiations with external governments and organizations in the actualization and preservation of agency and wellbeing in Indigenous lifeworlds (local natural environments, Indigenous lands, and cosmological perspectives).

Indigenized Wellbeing as Buen Vivir

Pre-colonial cosmological perspectives of Indigenous wellbeing must also be considered as an integral part of human and non-human Indigenous life-worlds. Buen Vivir can best be defined as a concept that "includes the classical ideas of quality of life, but with the specific idea

that well-being is only possible within a community" (Gudynas, 2011, pg. 441). Gudynas adds that the idea of community in Buen Vivir extends to cohabitation with nature as well as other humans. Gudynas further states that the concept of Buen Vivir should not be viewed as a non-western centric concept but instead one that is open to the benefits of critical Western approaches like the feminist perspective that acknowledges the agency of women that most Indigenous traditions have difficulty with (Gudynas, 2011, pg. 445). In short, Buen Vivir should be seen as an Indigenized concept of wellbeing that "acknowledges… several ways to give value, such as [a]esthetic, cultural, historical, environmental, spiritual and so on" rather than the conventional Western reductionist view of life based primarily on utilitarian values (Gudynas, 2011, pg. 445). Gudynas ends by stating that Buen Vivir advocates the breakdown of the human-nature dialectic where "nature becomes part of the social world, and political communities could extend in some cases to the non-human" (Gudynas, 2011, pg. 445). Here Indigenous individuals and communities can come full circle with regards to various forms of agency (both human and non-human) and how they are part of a greater concept of wellbeing fully "rooted" in Indigenous ways of knowing (IK, TK, and TEK), yet fully open to Western concepts that can apply or can be accepted into it. The concept of Buen Vivir is provocative because it sets an Indigenized path towards sustainable development that is empathetic to both Indigenous and Euro-Western knowledge, ideology, and perspectives framed in a cosmological worldview that is as contemporary as it is traditional.

Indigenous Application of Agency through Sustainable Entrepreneurship

The indigenization of sustainable entrepreneurship as demonstrated in the previous two sections is founded on the idea of the co-production of knowledge and the mutual respect and equal acknowledgement of both Euro-Western and Indigenous concepts and perspectives. As with concepts of wellbeing like that of Buen Vivir which allows for the adoption and acknowledgement of multiple perspectives, there is the concept of *Adaptive Agency* that finds ways to integrate or adapt contemporary and traditional structures. Adaptive agency can be seen as the "critical" component in the decision-making process within organizations in that it is

through learning that agency becomes reflexive leading to critical thinking and reasoning (Pelling 2011). Pelling further states that “reflexivity implies strategic decision-making (of an entrepreneurial individual…)” (pg. 65). As Indigenous individuals and communities further engage in entrepreneurial activities, Adaptive agency will provide the reflexive pathways needed for increasing what Pelling calls ‘adaptive ingenuity’ also vital to Indigenous entrepreneurs (both individuals and communities) as they negotiate their positions between institutions and the environment. Pelling (2011) cites Freire (2000 [1969]) who defines adaptive ingenuity as “finding new ways to fit within and gain advantage from dominant structures without challenging them” (as cited in Pelling 2011, pg. 60). Pelling (2011) states however that reflexive adaptation in the context of challenging existing structures may instead be strengthened through the development of what he refers to as ‘shadow networks’ (pg. 66). Indigenous entrepreneurs can find reflexive ways in which to deal with the institutional structures they face while also strengthening their own collective community positions through adaptive agency. An example of Indigenous application of Adaptive agency can be seen in the case of the Kuna artisans of the San Blas islands in Panama as described by Tice (1995). Here, the Indigenous artisans formed their *Mola* cooperative as a response to their exploitation from intermediaries (local merchants). The author states that the *mola* cooperative established in the 1960s was designed to increase Kuna women artisan’s income by allowing them to gain local control over the distribution of income from their *mola* sales (pg. 101). Tice (1995) points out that the five key issues Kuna women artisans had to face through their cooperative were; 1) leadership, 2) the role of men, 3) capital access, 4) transportation, and 5) competition. The *Mola* Cooperative and its women members had to face each of these obstacles in a reflexive way in order to adapt to these pressures while simultaneously achieving their goals. Although the term “Adaptive Agency” was not used nor necessarily recognized by the Kuna women, their actions to negotiate through these obstacles without directly challenging the intermediaries is evidence of the Adaptive Agency they demonstrated. Tice (1995) provides an example of leadership through her description of Pilar, a Spanish fluent Indigenous Kuna woman, who would have normally been controversial in the community had it not been for the member’s recognition of the importance of having a

cooperative representative who could speak the dominant language. Pilar, as the leader of the cooperative, did extensive travels to other regions, learning and participating through seminars while also directly interacting with “traditional” political leaders (both Kuna and Non-Kuna) in San Blas (pg. 110-111). Her ability to work *with* instead of against the dominant structures as well as her willingness to learn from her interactions demonstrates how Pilar exercised her community’s adaptive agency for the betterment of the cooperative. For the Mola Cooperative, the role of men (male mola producers) had been a continuous conflict. In some cooperatives, women were not always given permission to travel to outer island workshops because it was thought unusual for women to travel without their spouses or male relatives; however, a particular cooperative was able to resolve this strategically by inviting male *mola* producers to accompany them on the trips (pg. 111). The women of this cooperative exhibited ‘adaptive ingenuity’ (Pelling, 2011) in their solution to the cultural structures obstructing their agency that ultimately ended up with benefits to both parties in the conflict (male *mola* producers and female *mola* producers). Access to capital was yet another challenge the Mola Cooperative faced. Initially, the cooperative was unable to get a bank loan due to the fact that the banks had no loan category in which to place them (pg. 103). This lack of financial capital was solved through the cooperative’s application to an Inter-American Foundation grant (IAF) that eventually provided $30K of working capital that the cooperative could use for expansion, diversification, lowering production costs, educational/income-generating opportunities, and increasing women’s political participation (pg. 103). Here, the Kuna women artisans were able to adapt to the economic structures (institutions) that prevented them from growing their cooperative due to financial capital restraints by seeking out non-traditional funding sources outside of the country’s financial system rather than resorting to protests and demonstrations in front of local banks.

Transportation of large amounts of cash was another challenge the *mola* cooperative faced since delays were often due to having to wait for when trusted family members would be traveling to Panama City (where most of the sales took place) from the artisan local towns/villages (Tice 1995). As a result, a strong *shadow network* (Pelling, 2011) was developed consisting of trusted family members and other trusted people (shop owners, Kuna politicians,

etc.) in the community (pg. 112-113). Indigenous Adaptive Agency is exhibited in this example in how the “reflexive adaptation” of the *mola* cooperative was indeed strengthened by Kuna artisan development of a strong shadow network of trusted community members in the transport of cash. Lastly, competition was a challenge that affected all Kuna *mola* producers whether male intermediary or female cooperative members. Male intermediaries (traders) posed a competitive threat to the cooperatives because they worked outside of the cooperative purchasing non-cooperative produced *mola*. According to Tice, the cooperative leadership was successful in convincing the male intermediaries that cooperative membership would provide both skills as well as economic benefits regarding cash returns on *mola* sales. The strategy worked and the cooperative no longer suffered from competitive conflicts with male intermediaries as both parties began to work together. Through Indigenous Adaptive Agency, the Kuna women artisan petty-commodity producers of San Blas were able to collectively transform their limiting patriarchal structures to provide entrepreneurial recognition and benefits to all parties involved.

The transformation of existing systems and institutional structures is a necessary step toward sustainable entrepreneurship within SES. Westley et al. (2013) introduce the idea of *Transformative Agency*, defined as the role of individual agency in achieving transformation in complex adaptive systems. Essential to developing transformative agency are the activities of institutional entrepreneurship that Westley et al. (2013) describe as “the efforts of individuals who seek to change the institutions governing a particular domain in the interests of realizing particular goals of their own” (pg. 2). Westley et al. (2013) states that “research shows that there are networks of individuals contributing in different ways to collectively navigate transformation” (pg. 10). These network efforts described by Westley et al (2013) are not unlike the Pelling (2011) *shadow networks* discussed in *Adaptive Agency*. Westley et al. (2013) furthers that “institutional entrepreneurs are highly sensitive to the context in which they work, and seek to guide, rather than commandeer, transformation using skills and strategies appropriate to this kind of agency” (Westley et al. 2013, pg. 10). Similar to the Randell (2016) notion of translating aspirations to outcomes, through *Transformative Agency* institutional entrepreneurship takes a more active role beyond the leadership role. Westley et al. (2013) state that “shifting from the notion of leader to

that of entrepreneur usefully moves the focus from the leader-follower relationship to the endeavor itself, and to the imperative of seizing opportunities and mobilizing resources that will gain support for innovations critical to transformations of social-ecological systems" (pg. 2).

Indigenous artisan petty-commodity producers would greatly benefit from utilizing Transformative agency to negotiate the institutional structures in their collective entrepreneurial pursuits. Tice (1995) states that the "collective efforts of a number of Indigenous groups have used the capital from craft sales to improve their quality of life" (pg. 186). She goes on to state that "these groups have shown resilience and creativity at the local level in the face of national and international forces that often exploit and impoverish local regions" (pg. 186). Cavanagh & Mander (2004) state that "in indigenous societies, the majority participate in activities that offer sustenance but are often not integrated in the national or global market. In rural areas, most make a living off the land, often engaged in subsistence agriculture or small-scale entrepreneurial activities that do not offer regular incomes" (pg. 97). Anderson et al (2006) report that "many indigenous people see entrepreneurial activity as a central element in support of this multi-objective endeavour, clearly aligning themselves with the purposes of both social and economic entrepreneurship, all in a context in which particular histories, cultures and values play a prominent role" (pg. 1). Anderson et al (2006) define Indigenous Entrepreneurship as "the enterprise related activities of Indigenous people in pursuit of their social/cultural determination and economic goals" (pg. 2). Hindle et al (2007) define Indigenous Entrepreneurship as an "activity focused on new venture creation or the pursuit of economic opportunity or both, for the purpose of diminishing Indigenous disadvantage through culturally viable wealth creation" (pg. 7). In short, the definitions of Indigenous Entrepreneurship align with the entrepreneurial aspects of Transformative Agency and can help Indigenous artisans exercise their self-determination in pursuit of both economic and cultural goals through its application in their Indigenous entrepreneurial activities.

Transformative Agency's shift from leader to entrepreneurial activity (Westley et al. 2013) fits nicely into the framework of Indigenous Entrepreneurship and the activities of Indigenous

groups involved in entrepreneurial activities in negotiating the structures that limit them. Larsen & Johnson (2012) describe Indigenous research as “fundamentally about transformations particularly those leading to greater prospects for individual and collective self-determination both within and beyond the community” (Larsen & Johnson 2012, pg. 5). Transformative Agency’s focus on transformations and the agents of transformation of social ecological systems could have far reaching implications to Indigenous research. As more Indigenous individuals and communities take on entrepreneurial activities that impact or are impacted by their institutional arrangements (structures), the notion of an Indigenous Transformative Agency with its focus on “sustainable” institutional entrepreneurship through social cultural determination could find application in the management and governance of Indigenous artisan social-ecological systems.

The aforementioned examples of Adaptive and Transformative agency application demonstrate that these Euro-Western concepts can have application in Indigenous entrepreneurship as they align with Indigenous entrepreneurial activities with reference to Adaptive agency’s reflexive building of shadow networks, its emphasis on adaptive ingenuity to find alternatives to challenging existing structures, and Transformative agency’s focus on shifting from individual leader to collective entrepreneurial activity. The indigenization of sustainable entrepreneurship therefore does not only mean the introduction of Indigenous knowledges (concepts and perspectives like *Place-Thought* and *Buen Vivir*) but also the facilitation of ways to apply Euro-Western concepts and perspectives that are sensitive to the institutional arrangements (structure-agency complex) of Indigenous communities regarding their Indigenous entrepreneurial activities.

Indigenous Application of Agency through Capitals

As established in the previous sections, the Euro-Western concepts of agency, through an Indigenized perspective, can be seen as adaptive capacities that enable individuals to act collectively to fulfill livelihood and wellbeing aspirations within their combined social and biophysical worlds. In order to more deeply investigate the nature of the relationship between agency and the structures of the social-biophysical world of Indigenous peoples, an analysis of

the institutions that form the structures of the structure-agency complex must be done. The following theoretical diagram (*Figure 19*) depicts the relationship of structure to agency and their individual influences on institutional outcomes and community outcomes (Randell 2016). Not all institutional outcomes benefit the community and not all community outcomes align with institutional outcomes.

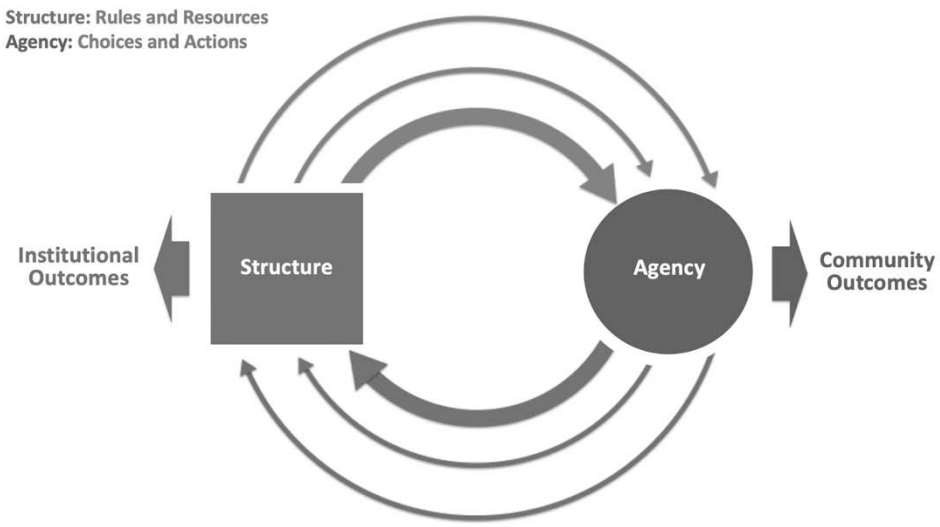

Figure 19: Diagram of the Structure-Agency Complex inspired by Randell (2016)

In the study of the structure-agency complex, Randell (2016) specifically focuses on Social, Financial and Human capital as dimensions of or tools for agency. In short, Randell sees social, financial, and human capitals as critical enablers in exercising agency in lieu of structural constraints in the pursuit of aspirations and the capabilities/capacities of individuals to turn them into outcomes. Pierre Bourdieu (1986) in his seminal book chapter titled *Forms of Capital*, defines the forms of capital as falling under the categories of economic, cultural, or social capital. Through an indigenized perspective, the entire scope of livelihood most likely involves a combination of a variety of different types of capital. Lillard and Ogaki (2005) define spiritual capital as “a set of intangible objects in the form of rules for interacting with people, nature, and spiritual beings (God, gods, buddhas, angels, evil spirits as believed to exist by individuals and in different religions) and believed knowledge about tangible and spiritual worlds” (pg. 1). Chu (2007) defines spiritual capital as “the movement of spirit’s intelligence activating and creatively

expressing through the use of collective innate and intangible personal qualities…[and] is dynamic and foundational to entrepreneurial enterprise…" (pg. 71). Chu (2007) further defines Spiritual Capitalism as the "use of inner assets such as imagination, intuition and persistence, all directed by intention and intensified by focus and an inner certainty of success" (pg. 62). The addition of Spiritual capital to the more common forms of capital (Physical, Financial, Human, Natural, and Social/Cultural) is more inclusive to the collective indigenous cosmological view of the landscape as populated by both humans and non-humans (Basso 1996, Escobar 2001, Larsen & Johnson 2012, Watts 2013).

Figure 20 indicates the relative position of all six aforementioned forms of capital (Physical, Financial, Human, Natural, Social/Cultural, and Spiritual) in relation to institutional and community outcomes in the interplay between structure and agency as described by Randell (2016). Each form of capital sits on a pathway between structure and agency. The positions or placement of each capital in Figure 20 are hypothetical but allude to the influences of structure and agency upon them.

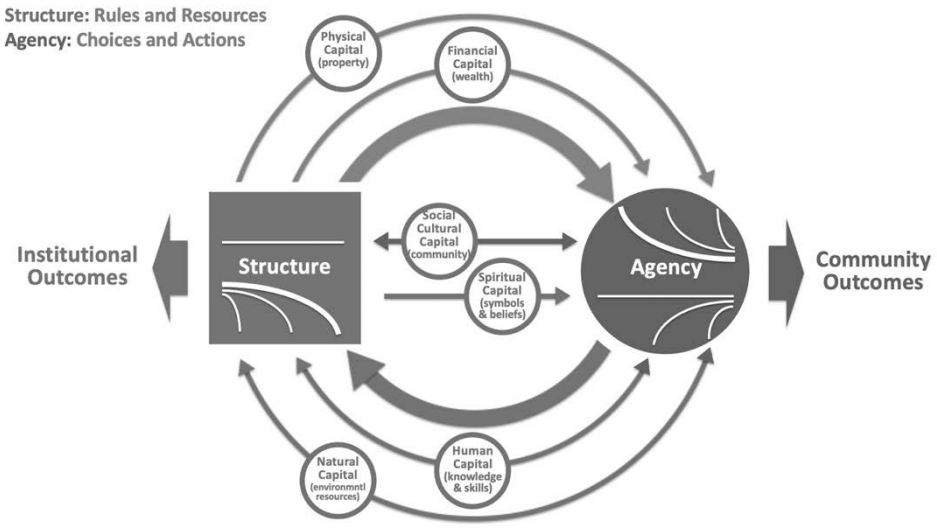

Figure 20: Structure-Agency Complex Integrating Six Forms of Capital

The inclusion of the Euro-Western concept of capitals is necessary in the co-production of knowledge with Indigenous communities. Here an attempt to Indigenize the concept of capital

use in the Structure-Agency complex is reflected in the addition of spiritual capital that is more sensitive to Indigenous pre-colonial cosmological views and perspectives.

Results

Indigenous Agency

In the 4.5 months of ethnographic observational study in the Mazahua artisan communities of Toluca Mexico for this paper, Dalia, the leading woman artisan of the San Felipe Santiago community in the Mazahua municipality of Villa de Allende, was observed exercising Indigenous Adaptive Agency through her networking with a craft sales intermediary (local non-Indigenous merchant) connected with the Dr. Simi Foundation (a Mexican non-profit) in order to gain access to nutritional, medical, and psychiatric services that are practically non-existent in her community. The nearest hospital would be about a 2-hour drive by car to downtown Toluca from Dalila's community in San Felipe Santiago. Through the shadow networks involving these specific intermediaries, the community now receives monthly free care packages of healthy foods such as lower saturated fat cooking oils, healthy grains, and foodstuffs as well as lectures on nutrition/hygiene and access to medical, dental, and psychiatric services via the Dr. Simi Foundation. By exercising adaptive agency through the development of mutually beneficial relationships (shadow networks) with intermediaries who sell indigenous crafts, Dalila and her Mazahua artisan community of San Felipe Santiago were able to transform the existing health service systems and structures of their community and subsequently the health and wellbeing of their artisans.

In another observation in the municipality of Valle de Bravo, Mazahua artisans formed the Mazahui Cooperative led by a non-Indigenous woman founder in order to help the nearby communities of San Antonio de la Laguna and San Simon de la Laguna. Leading women and artisans from both communities joined the Mazahui Cooperative due to the high competition of intermediaries in the tourist town of Valle de Bravo. Through the Mazahui Cooperative and the efforts of the non-Indigenous woman founder the Mazahua artisans of San Antonio de la Laguna

and San Simon de la Laguna are now able to have a competitive advantage in selling their crafts (embroidered pillow covers, place mats, etc.) to the local hotels and restaurants while getting access to the Mazahui Cooperative's child daycare, children's education, and business training services.

In the municipality of San Felipe del Progreso in the town of Fresno Nichi, a Mazahua artisan cooperative was established by a highly educated Mazahua woman artisan named Ines. Indigenous Mazahua women are of the poorest in Mexico and it is extremely rare to have an education beyond middle or high school. Ines, the founder of the Fresno Nichi cooperative, spoke both Mazahua and Spanish and achieved a Master's degree in Social Sustainability. Through her high educational level she was able to create her cooperative as well as to develop the needed business relationships in San Felipe del Progreso (the neighboring tourist town) in order to provide economic benefits to her Indigenous artisan community. Ines, the Fresno Nichi Mazahua cooperative leader, like the controversial Spanish speaking leading woman Pilar of the Kuna as described by Tice (1995), exhibited Indigenous Adaptive Agency by establishing business relationships in the tourist town of San Felipe del Progreso through her education and ability to network ultimately bridging the gap between the Indigenous artisans and the non-Indigenous businesses within the structures limiting the artisan community of Fresno Nichi.

Much like the Kuna of San Blas as described by Tice (1995), the Mazahua artisans of Villa de Allende, Valle de Bravo, and San Felipe del Progreso were able to collectively transform the limiting economic and social structures in their communities to gain entrepreneurial recognition and benefits through Indigenous Adaptive Agency and their capacity for reflexive adaptation. In all the previous examples of the Kuna of San Blas and Mazahua artisan communities, Indigenous leading women artisans sought ways to adapt to the limitations they faced by building a variety of networks that required the use of novel partnerships rather than the challenging of existing structures that limited their entrepreneurial activities in crafting and in each case these reflexive efforts can be referred to as examples of Indigenous Adaptive Agency in the context of sustainable entrepreneurship.

As in the previous examples of Pilar an Indigenous Kuna women artisan of San Blas who would have been considered a “controversial” female artisan leader due to her ability to speak Spanish, the leading Mazahua woman artisan Ines of Fresno Nichi who could have been isolated from her community because of her high-level education both utilized Transformative Agency in quickly moving the focus from their “leadership” of their artisans to the “entrepreneurial” tasks of mobilizing equality in artisan representation in gaining financial capital for their respective artisan communities.

Cultural Preservation

The interview data (n=50) collected in the Mazahua artisan communities in Toluca Mexico, regarding social-cultural determination, suggest that individually and collectively Mazahua artisans believe that their crafting endeavors directly contribute to the preservation of Mazahua culture. Artisans voiced concerns for the Mazahua culture in that 76% of the artisans (38/50) reported that they felt their crafts and crafting activities helped to preserve Mazahua culture. Here Mazahua artisans, as agents of transformation, actively exercise their Indigenous Transformative Agency through their crafting endeavors as a means to transform or sustain their culture and fortify their cultural institutions (Indigenous traditions, Indigenous language, etc.).

Capitals

In order to determine how the various forms of capital affect or are affected by structure and agency for this paper, semi-structured interviews (n=50) were conducted with Indigenous Mazahua artisans in four communities in three municipalities in Toluca Mexico in the State of Mexico. In the semi-structured interviews, respondents were asked about any connections between the act and process of crafting traditional articles and their access to the six forms of capital. The financial capital of Mazahua artisans was addressed by asking if they saved any cash for their crafting from sales and 34% (17/50 artisans) said ‘yes.’ These artisans invest profits from craft sales as a business to purchase materials for future projects. A large number of artisans 66% (33/50 artisans) do not save cash from sales and resort to using reserves from

other businesses to purchase materials (Physical capital). Here financial capital can be seen as critically impacting the agency of artisans in maintaining their crafting activities. Mazahua artisan financial capital is somewhat liquid as many do not have savings (other than minimal livestock) and any surplus funds from primary income (construction, farming, etc.) is quickly used to support and maintain the artisan's crafts but only after it is used for primary Physical capital (food, children's school expenses, etc.).

Regarding Physical capital in relation to crafting activities, artisans were then asked if they had a sewing machine and most said 'no' (80% or 40/50 artisans). For Human Capital, only 26% (13/50 artisans) reported that they knew how to use a sewing machine and 18% (9/50 artisans) said they would like to learn and be trained on how to use a sewing machine (Social/Cultural capital). According to the interviews, Physical capital in the form of crafting materials like yarn and fabrics are bought and sold in local marketplaces in the Mazahua communities and suggests that artisans no longer produce them by hand from sheep's wool. Artisan access to these marketplaces appear to pose no problems as artisans can walk or take taxis if they do not own or have access to a car or truck (Physical capital).

Natural Capital regarding the availability of grasslands for sheep to produce wool and native plants for dying yarn was not an issue due to the fact that artisans preferred to purchase inexpensive industrial yarn in a variety of colors at their local marketplace. Social/Cultural Capital was addressed by artisans regarding their knowledge of cultural traditions and their ability to speak their Indigenous Mazahua language. Concerns over the loss of Mazahua culture (the making and use of crafts) is evidenced by the large number of artisans (64% or 32/50 artisans) mentioning the loss of Mazahua traditions. In connection with this, many artisans (82% or 41/50 artisans) said that they had no knowledge of the cultural meanings of the patterns and figures used in their crafts and 44% (22/50 artisans) of the artisans interviewed did not speak their Indigenous language (Jñatrjo).

Lastly, Spiritual Capital was found to link with Mazahua crafts and crafting as 36% (18/50 artisans) of the artisans reported said that they did associate their crafting with spiritual meanings. On occasion, some artisans (10% or 5/50 artisans) mentioned a Christian or Catholic association

with their crafting and some (36% or 18/50 artisans) mentioned traditional beliefs and the spiritual healing powers of the Mazahua underskirt or its patterns.

Verbal survey data (n=50) collected on Mazahua Indigenous artisans for this research show that between the four Indigenous artisan communities participating (San Felipe Santiago, Loma de Juarez, San Antonio de la Laguna, and Fresno Nichi), Spiritual capital ranked between 6.5-7.7 on a scale from 1 to 10 where 10 was the highest. The surveys show that the communities of San Felipe Santiago, Loma de Juarez, San Antonio de la Laguna, and Fresno Nichi only slightly differ regarding attitudes towards access to Natural capital (0.4 difference from lowest to highest), Spiritual capital (1.2 difference from lowest to highest), and Human capital (0.9 difference from lowest to highest). As seen in Figure 21 the communities of San Felipe Santiago and Fresno Nichi more significantly differ in access to Financial, Social/Cultural, and Physical capital at 1.4, 1.9, and 2.2 difference respectively.

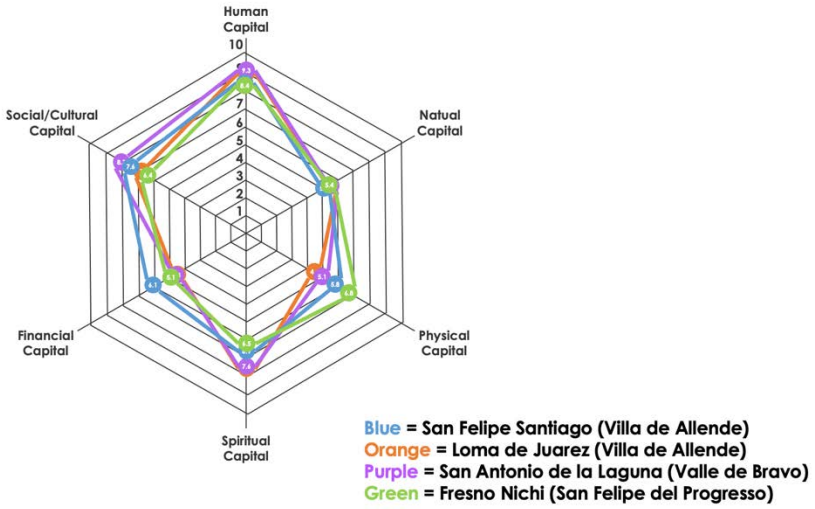

Figure 21: Mazahua Artisan Capital Access Rankings from Four Communities

Overall, the four communities of Mazahua Indigenous artisans in Toluca Mexico differ only slightly relative to how they rank capital access in the context of their entrepreneurial crafting activities with Financial capital being the overall lowest which suggests that Mazahua artisan communities suffer the most from lower Financial capital which may be used for Physical capital needs. Additionally, verbal survey data results indicate that Mazahua artisan communities enjoy

higher levels of Human, Social-Cultural, and Spiritual capital in the context of their crafting endeavors; however, artisans may benefit from the development of more entrepreneurial skills (social capital) in order to increase their financial capital access.

Based on the literature review, semi-structured interviews, verbal surveys, and 4.5-months of ethnographic observation, the following Table 4 shows how the 6 forms of capital map to the concepts of Buen Vivir, Place-Thought, Adaptive agency, and Transformative agency in the context of Mazahua artisan craft production. Table 4 indicates how artisans use each form of capital as enablers of Buen Vivir as wellbeing and creativity, Place Thought as a mutual respect for and reciprocity to the land, Adaptive agency as reflexivity and learning, and Transformative agency as transformative actions that impact the institutions affecting Mazahua artisan communities.

Capitals	Buen Vivir	Place Thought	Adaptive Agency	Transformative Agency
Human Capital	Creativity of the artisans within the community (Albarrán González, 2020) (Personal, Citizenship level)	Artisan collective ccommunities of practice representing a region (Personal, Strategic, & Citizenship level)	Artisan collective alliances and shadow networks with craft intermediaries (Strategic level)	Skilled artisans participating in craft as collective cultural preservation (Strategic & Citizenship level)
Natural Capital	Collective wellbeing of the natural environment; abundance of plants, sheep grazing fields, and sheep for crafting (Everyday, Personal, & Strategic level)	Mutual respect between artisans and the land through individual & collective reciprocity (Personal & Citizenship level)	Artisans/collective community ingenuity to adapt to existing resource access (Everyday, Strategic, Personal, & Political/Citizenship level)	Artisans as institutional entrepreneurs in transforming collective resource access (Everyday, Strategic, Personal, & Political/Citizenship level)
Financial Capital	Artisans investing income from craft sales to purchase crafting materials for their creative enterprise. (Everyday, Personal, & Strategic level)	Artisans investing income from craft sales to preserving the land collectively (Strategic & Citizenship level)	Artisans contributing funds for collective community to use for religious events (Personal & Citizenship level)	Leading artisans as institutional entrepreneurs creating ventures (Strategic, Personal, & Political/Citizenship level)
Physical Capital	Artisans sharing sewing machines to help their collective community (Everyday, Personal, & Citizenship level)	Artisans regulating wood harvesting from the forests to collectively maintain them (Everyday, Strategic, Personal, & Political/Citizenship level)	Artisan shadow networks with craft intermediaries for collective health (Everyday, Strategic, Personal, & Political/Citizenship level)	Artisans using industrial yarn in their crafts as collective cultural preservation (Everyday, Strategic, Personal, & Political/Citizenship level)
Social/Cultural Capital	Crafting used to increase subjective wellbeing through focus & mindfulness (Everyday & Personal level)	Place/region connection through crafting as collective community identity (Everyday, Strategic, Personal, & Political/Citizenship level)	Artisans teaching/learning traditional skills and language through crafting (Everyday, Strategic, Personal, & Political/Citizenship level)	Artisan community development through social enterprise (Giovannini, 2012) (Strategic & Political/Citizenship level)
Spiritual Capital	Indigenous creative spirit developed through act and process of crafting (Everyday, Strategic, Personal, & Political/Citizenship level)	Potential spiritual connection with landscape via act/process of crafting (Everyday, Strategic, Personal, & Political/Citizenship level)	Spiritual connections developed with others to reduce frictions with outsiders (Everyday, Strategic, Personal, & Political/Citizenship level)	Moving from individual spirituality to developing collective community spirituality (Everyday, Strategic, Personal, & Political/Citizenship level)

Table 4: Six Capital Use; Buen Vivir, Place Thought, Adaptive, & Transformative Agency

Each of the six capitals are seen as tools that affect artisan agency on an everyday, strategic, personal, and or political/citizenship level (Lister, 2003 as cited in Coulthard, 2012). As demonstrated in Table 4, by placing the concepts of Buen Vivir, Place Thought, Adaptive agency, and Transformative agency in the context of how Indigenous artisans use capitals to enable

different forms of agency provides a way to see how these Indigenous and Euro-Western concepts are actionable. Putting together the concepts of Buen Vivir, Place Thought, Adaptive agency, and Transformative agency provides clarity so that community development can be inspired to focus more on relationality and Indigenous collectivity which will make the concept of agency more actionable for indigenous communities ultimately maximizing artisan use of capitals.

Discussion: Indigenous Adaptive-Transformative Agency as a means to Indigenize Sustainable Entrepreneurship

A new notion of agency is needed that fully respects Indigenous concepts of wellbeing, Indigenous sense of place, collective community, and is centered on learning, reflexivity, and entrepreneurial activity focus. Indigenous Adaptive-Transformative Agency is based on the concepts of Adaptive agency (Pelling, 2011) and Transformative agency (Westley et al 2013). Adaptive Agency, as Pelling (2011) describes, is characterized by the adaptive act of learning that incorporates critical thinking, reflexivity, and ingenuity in navigating institutional arrangements without challenging them. Transformative Agency as Westley et al. (2013) describe, is agency involving institutional entrepreneurs focused on transforming complex adaptive systems with a de-emphasis on leaders-followers and an emphasis on collective tasks and outcomes. Both Adaptive and Transformative agency, as shown in the cases of the Kuna and Mazahua artisans and their craft cooperatives, can be used as a powerful lens through which to focus strategic decision-making in the pursuit of adaptive pathways to resilience in the relationship between structure and agency in social ecological systems. Some of the limitations for Indigenous entrepreneurs (individual artisans and artisan communities) regarding exercising their Adaptive agency will involve certain capacities and their development. One of these capacities is the ability of individuals and groups to think strategically and critically. Strategic and critical thinking skills are essential for the decision-making associated with Adaptive agency and must be obtained independently from one's level of education. In other words, Adaptive agency is not just achieved by the educated and or the elite. The operating assumption is that most rural Indigenous communities at the base of the economic pyramid are illiterate or have lower levels of education

(primary or lower). This should by no means be seen as a measure by which Adaptive agency can be realized by Indigenous individuals and communities. Other capacities such as the ability to build interpersonal relationships, the ability to think empathically, and the capacity for design thinking must also be made possible to attain. As Pelling (2011) suggests, 'learning' sits in the core of Adaptive agency and so the challenge will be to build a culture of learning within Indigenous communities so that they may truly realize and exercise their Indigenous Adaptive agency.

This paper has proposed the concept of Vitu™, an Indigenous women owned and operated fair trade fashion goods venture based on Mazahua ethnic arts and crafts in Mexico that will explore the production and sales of indigenous co-designed goods for the development of Indigenous Mazahua artisan communities through *indigenized* sustainable entrepreneurship. Indigenous Adaptive-Transformative Agency will be core to the Vitu™ Indigenous enterprise and will be used as a critical tool for artisans in using capitals in exercising agency to fulfill their collective aspired livelihood and wellbeing outcomes. The Vitu™ Indigenous enterprise, through Indigenous Adaptive-Transformative Agency, will have at its foundation a culture of learning where artisans can build the adaptive capacities that they need to help them better negotiate their existing institutional arrangements reflexively and without having to challenge them directly.

Indigenous Adaptive-Transformative agency, much like the *shadow networks* of Adaptive agency, uses networking to individually and collectively transform institutional arrangements. Indigenous Adaptive-Transformative agency seeks the innovations that can transform SES and guide towards building support of such institutional innovations within an entrepreneurial mindset. Because Indigenous Entrepreneurship research is fundamentally concerned with transformations that lead to individual and collective self-determination (Larsen & Johnson, 2012) Indigenous communities would greatly benefit from Indigenous Adaptive-Transformative Agency as a tool to better understand leadership roles in the management and governance of Indigenous social-ecological systems. The concerns regarding the concept of Indigenous Transformative Agency involve the potential clash between the Western concepts of individual "leader," "entrepreneur," and "transformation" (as aspired outcome) with the Indigenous concepts of "collective self-

determination," "Indigenous entrepreneur" and collective "wellbeing" (Buen Vivir). The likelihood that these concepts and their respective definitions would differ greatly (as they do) will pose problems in their ability to be applied *in situ*. Additional questions about the fundamental worldview differences (Euro-Western vs. Indigenous) regarding "social-ecological system approaches," "sustainability approaches," and "sustainability measures" must also be considered prior to any fruitful discussions between SES researchers and Indigenous communities. Lastly, concepts of livelihood (forms of capital) may not easily translate to life in Indigenous communities as these concepts may be laden with Euro-Western beliefs and values systems and so SES researchers must carefully assess the application of these types of sustainability measures.

Indigenous Adaptive-Transformative Agency's combination of Adaptive Agency's allowance for multiple perspectives views (like that of Buen Vivir and Place-Thought) with Transformative Agency's institutional entrepreneurial focus (transitioning from leadership to entrepreneurial activity outcome) will be ideal for Indigenous communities to achieve their sustainable entrepreneurship goals and aspired community outcomes regarding their definitions of livelihood and wellbeing through a more Indigenized perspective. Vitu™'s application of Indigenous Adaptive-Transformative Agency has the potential to provide Mazahua Indigenous artisan communities, entrepreneurial experts, and SES researchers with an indigenized means to navigate as well as negotiate the complex institutional arrangements that either positively or negatively affect communities in their Indigenous, social, and sustainable entrepreneurial endeavors ultimately leading to the Indigenization of sustainable entrepreneurship. Vitu™ will support the use of Traditional Ecological Knowledge (Kimmerer, 2010) as one of its key sustainable entrepreneurship goals will be the revitalization of Mazahua Indigenous language and culture in addition to raising the quality of life of Mazahua artisans.

The data collected for this research focused on six forms of capitals in order to assess Indigenous artisan livelihood and wellbeing. Although previous research specifically focused on Social, Financial and Human capital as tools for agency, the addition of Spiritual, Natural, and Physical capital helped to integrate closer to Indigenous perspectives of both human and non-human agency (Manuel-Navarrete & Buzinde 2010, Larsen & Johnson, 2012, Kimmerer 2014),

Place-Thought (Basso 1996, Escobar 2001, Watts 2013), and Indigenous Entrepreneurship (Anderson et al. 2006, Hindle et al. 2007). The clear challenge of implementing a study on capital assets in relation to structure and agency will be in the measuring of said assets. As stated earlier, further research into measurement scales and tools will be required. After the Vitu™ enterprise is established, a secondary study must be conducted to see if any changes have taken place concerning artisan access to capitals. What happens to Human capital when Financial capital is raised through craft sales? Will Financial capital continue to be transferred to Physical capital? Will the current relatively higher levels of Social, Human, and Spiritual capitals increase or decrease once the venture takes off and why? These are but a few of the questions needed to be asked and their answers could have direct impact on understanding the benefits and challenges of indigenized sustainable entrepreneurship and its future application in Indigenous community development. Regardless, the Vitu™ Indigenous enterprise stands as a future model for indigenized sustainable entrepreneurship and has the potential to provide a more culturally sensitive approach to ensuring justice, equity and inclusion for indigenous artisans in the context of their small-scale craft-based *sustainable* entrepreneurial activities.

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CHAPTER 4

PAPER THREE

Living Crafts: Understanding Crafting, Community Life, and Sustainable Entrepreneurship through Indigenous Perspectives on Communities of Practice

Abstract

The crafting of cultural goods and ethnic arts are steady alternative means for making a living within many poverty-stricken Indigenous communities throughout the world. These crafting activities however are often small-scale and only offer supplementary income. If these crafting activities are increased to the level of sustainable entrepreneurship they may have a greater impact in sustainable community development regarding poverty alleviation however, not without considerable risks to social capital that has direct and indirect influence on human and financial capitals. In order to help mitigate these potential risks, an analysis of the relationships between Indigenous crafting and Indigenous community life is needed. This paper investigates the linkages between Indigenous crafting, community life, and sustainable entrepreneurship through an Indigenous perspective of communities of practice in an attempt to “Indigenize” sustainable entrepreneurship so that Indigenous communities, researchers, as well as outside organizations can better apply its principles towards Indigenous artisan community development while also protecting Indigenous society and culture. Through extensive literature review, this paper examines how the act of Indigenous crafting, as carried out by individuals within families and by families within Indigenous communities, links with the social aspects (social capital, social spaces, etc.) of community life. This research also looks at how community life links with the economic (entrepreneurial) aspects of Indigenous crafting as Indigenous entrepreneurship and Indigenous innovation. Lastly, this research investigates the socio-economic aspects (gender roles and Indigenous cultural identity) in the context of sustainable entrepreneurship. This research theorizes that the concept of communities of practice offers a lens through which to view Indigenous crafting activities and by doing so sustainable entrepreneurship can be indigenized to become more usefully applied to sustainable community development in alleviating poverty while

also lowering risks to social capital by supporting the social aspects of craft production and the cultural identity of indigenous craft artisans and their communities.
Keywords: Indigenous Crafts, Sustainable Entrepreneurship, Social Relations, Cultural Identity, Indigenization, Communities of Practice

Introduction

The crafting of cultural goods and ethnic arts are steady alternative means for making a living within many poverty-stricken Indigenous communities throughout the world. These crafting activities however are often small-scale and only offer supplementary income to artisans. Additionally, Indigenous crafting plays an equally important role in the social-cultural fabric of Indigenous community life beyond just making a living. In other words, craft artisans, otherwise known as *petty-commodity producers* (Tice, 1995) are uniquely situated in the intersection of cultural goods and ethnic arts creation, distribution and sales for economic benefit, as well as household creation and consumption for important social-cultural benefits. Sustainable entrepreneurship as a tool for community development can be seen as the sum of social, economic, and environmental entrepreneurship (Tilley & Young, 2006) and has the potential to scale up the activities of craft artisans to help alleviate poverty while also potentially revitalizing Indigenous culture and language through leveraging Traditional Ecological Knowledge (Kimmerer, 2011). The use of sustainable entrepreneurship in creating Indigenous craft enterprises to improve artisan livelihood is however not without risks. Taking a social-cultural asset like Indigenous crafting and transitioning it to a business could have both positive and negative impacts on Indigenous artisan communities regarding the balance between social, human, financial and other capitals. In order to help mitigate the potential negative impacts of scaling up a social-cultural activity like crafting to that of an enterprise (Indigenous venture), an analysis of the critical linkages between Indigenous crafting and Indigenous community life and capital access is needed. Moreover, this analysis will reveal how deeply the layers of Indigenous community life are embedded in the creation and sales of these cultural goods and ethnic crafts.

The role of Indigenous artisan social capital (how it influences human, financial, and other capitals), how artisans make a living, the gender roles that influence their daily existence, and their cultural identity as individual artisans as well as communities of artisans each play a significant role in the production, distribution, and sales of Indigenous crafts as an entrepreneurial activity. This research theorizes that if Indigenous crafting activities are viewed in respect of communities of practice, they can be more easily transitioned to Indigenous ventures with lower risk to social capital, making a living, and artisan identity within the Indigenous communities involved as its contribution to sustainability science. By viewing Indigenous crafting enterprises as communities of practice, sustainable entrepreneurship can be more usefully applied to sustainable community development in alleviating poverty while also supporting social capital, financial capital, the cultural identity of individual artisans as well as the communities of artisans involved, the creativity of artisans, their learning, and their *Indigenous innovations* (Walters & Takamura 2015) as sustainable entrepreneurs.

In order to examine how the act of Indigenous crafting carried out by individuals within families and by families within an Indigenous community in the context of sustainable entrepreneurship specifically link with other aspects of community life such as social capital, making a living, gender roles, and cultural identity, a thorough literature review is needed to first understand the reasons by which small-scale entrepreneurial activities are conducted in Indigenous communities and how these activities, as communities of practice, contribute to the social fabric of life for Indigenous artisans and their production of ethnic crafts. In short, the success of Indigenous crafting as a means of sustainable entrepreneurship first requires a deeper investigation on the multi-dimensional social roles crafting plays in Indigenous artisan communities. Understanding how crafting activities as communities of practice link with the specific social, economic, and socio-economic aspects of Indigenous community life from an Indigenous perspective will help “Indigenize” sustainable entrepreneurship so that Indigenous communities, researchers, as well as outside organizations can better apply SE principles towards Indigenous artisan community development through the creation of Indigenous enterprises.

Social Aspects of Indigenous Crafting

Indigenous crafting (its production, sales, and consumption) is the central topic of this research. Crafting of ethnic arts is an established form of supplemental and mixed cash income for many Indigenous peoples and their communities globally based on the commoditization of ethnic arts and crafts (Swain 1993). Tice (1995) refers to these individuals or communities as 'artisan petty-commodity producers' and states that the term 'artisan,' regardless of how specific or expansive the definition, is not a homogenous group of individuals. Each Indigenous artisan community engaged in the crafting of ethnic arts has characteristics unique to their particular social, cultural, and historical contexts (Swain 1993, Tice 1995, Little 2004, Cruz-Torres 2008) that ultimately influence and are influenced by a multitude of aspects of their community lives. Tice (1995) goes on to state that "approaches used to study crafts or artisans have both mirrored and influenced wider conceptual debates within the social sciences" (pg. 9). The social issues surrounding crafting as a sustainable entrepreneurial activity cannot be discarded as trivial especially as more Indigenous artisans become petty-commodity producers in the commoditization of their ethnic crafts to improve their communities.

Social Entrepreneurship as Sustainable Entrepreneurship

The social aspects of Indigenous craft production as small-scale entrepreneurial activities are critical to its sustainability. Dees (1998) describes the concept of social entrepreneurship as a means to self-determination through a social mission driven by innovation. In the context of sustainable development of communities, social entrepreneurship takes on an even broader definition encompassing concepts of social sustainability and social innovation otherwise known as *Sustainable Entrepreneurship*. Tilley and Young (2006) define sustainable entrepreneurship highlighting the multitude of variables in its interrelationship with social entrepreneurship, economic entrepreneurship, and environmental entrepreneurship and contend that the route to sustainable development is not based on any one social, economic, or environmental perspective or foci but on their sum. Schaltegger and Wagner (2011) describe sustainable entrepreneurship

as a focus on the skills of the entrepreneur to use fundamental entrepreneurial activities to achieve social innovation. They go on to broadly define sustainable entrepreneurship as “an innovative, market-oriented and personality driven form of creating economic and societal value by means of break-through environmentally or socially beneficial market or institutional innovations” (pg. 226). Here sustainable entrepreneurship can be seen in a broad sense as a means to achieve social and environmental benefits and value. Schaltegger and Wagner (2011) describe sustainable entrepreneurs as individuals who exhibit personal mastery (personal growth and learning) and see their professional life as “a creative act.” Indigenous artisans who see their entrepreneurial activities as a creative means to achieve their aspirational societal goals (both community and institutional outcomes) can be considered sustainable entrepreneurs however, what is lacking in the concept of sustainable entrepreneurship in the context of Indigenous artisan petty-commodity production is market scale.

Cavanagh & Mander (2004) in their book titled *Alternatives to Economic Globalization: a Better World Is Possible* state that the majority of Indigenous communities engage in activities to sustain themselves but these activities do not reach the national or global market (pg. 97). They go on to say that most of these rural communities make a living off the land through subsistence agriculture or small-scale entrepreneurial activities with irregular income (pg. 97). These “small-scale entrepreneurial activities” can be seen as “economic alternatives” (Cavanagh & Mander, 2004) to traditional forms of subsistence. Coulthard (2012) refers to these as ‘alternative livelihoods’ which are “conceptualized as different capability sets from which people have to choose” (pg. 5). Coulthard furthers that the adaptation strategy of livelihood diversification is decided upon based on agency and the influences of social relationships and social structures (pg. 6). The lack of market scale of Indigenous artisan petty-commodity producers is problematic to the development of Indigenous enterprise. Severe income inequality of rural communities affects people's ability to obtain economic resources leading to instability and so striving for greater equity will help reinforce the sustainability of communities (Cavanagh & Mander 2004). The social stability of artisan communities therefore depends on alternative livelihood options like

crafting and adaptive strategies focused on the social aspects of social innovation and social sustainability through sustainable entrepreneurship.

Social Capital

Another social aspect of Indigenous craft production is social capital. Randell (2016) defines social capital "as the actual or potential resources available to an individual based on his or her network of connections to other individuals" (pg. 270). Regarding past examples of migration and the search for alternative livelihoods, Randell points out that migrants rely on substantial social networks as resources to attain their preferred outcomes or "aspirations" (pg. 284). The Department for International Development (1999) states that in addition to networks, social capital also involves people's membership to formal groups that operate under agreed upon rules and norms and the relationships and the exchanges built within these groups. In addition to social capital, Randell (2016) also focuses on Financial and Human capital as dimensions of or tools for agency in the pursuit of aspirations and the capabilities/capacities of individuals to turn them into outcomes. She defines financial capital as wealth assets and income, and human capital as knowledge, skills, and health (pg. 270). In short, social, financial, and human capitals are enablers in exercising agency in lieu of structural constraints. Social capital affects financial capital by increasing incomes and savings as well as knowledge and knowledge sharing through networks that impact human capital (DfID, 1999). Social capital is considered the most influential form of capital regarding the transformation of existing structures and processes that affect communities due to the fact that social capital can be seen both as products of structures and processes as well as producers of structures and processes (DfID, 1999). In other words, social capital as networks for Indigenous artisans help to build organized groups (communities of artisans) to pursue common outcomes and aspirations while social capital as organized groups in turn build social relationships and networks for artisans.

Social Spaces, Places, and Landscapes

The social relationships and networks of artisans who engage in the small-scale entrepreneurial activities of crafting ethnic arts often take place within or near their communities (i.e. marketplaces) which are the social spaces (structures or institutions) in which social relations are built. Little (2004) refers to these artisan place-based activity contexts as “social-spatial practices” (pg. 79). Little expands on this and states that “in each of these social contexts, global processes both subjectify and objectify” artisans and that their “identity constructions…are structured around the overlapping constellations of social relations embedded in local, regional, national, and global spaces” (pg. 16). In other words, ethnic/Indigenous artisans are bound by the “structures of power” (Little 2004) that exist on many scales and that the marketplace is important to ethnic/Indigenous artisans because it is a place where their identity is developed and where their social life meets their economic life. The marketplace is more than just a space where monetary transactions happen and that they should be thought of as spaces (landscapes) where social relationships between different social classes and ethnicities develop and shape each other.

The impacts of social class distinction and hierarchy cannot be avoided especially in the context of Indigenous ethnic artisans and the relationships they build within the marketplace. In the case of Mayan artisans and their small-scale entrepreneurial activities, Little (2004) cites Friedlander (1975) who suggests that “indigenous culture is tied to lower-class status rather than to distinct cosmological, material, and value systems” and states that “no matter how successful a Maya vendor becomes, in the racial class of Guatemala, he or she will always be socially and structurally positioned in the lowest class” (pg. 156). Although this unfortunate social structural reality may be true, Little (2004) makes a point to mention that the marketplace is fluid and characterized by the flows of the population, commodities, and the media asserting that the idea that a “bounded community” is no longer a valid one (pg. 185). Appadurai (1996) further supports this notion and sees these landscapes as the convergence of “ethnoscapes,” “technoscapes,” “financescapes,” “mediascapes,” and “ideoscapes" noting that each act on each other in a continuous flux of changing “global cultural flows.” Indigenous artisans simultaneously negotiate their ethnicity within the ethnoscape (landscape based on ethnic identity) of the marketplace,

leveraging it to their advantage in building personal identity while also ensuring personal financial stability within the financescape (landscape of financial transactions) of artisan-tourist exchanges in the sale of their crafts. As artisans move to e-commerce, web technologies in the technoscape (landscape characterized by technologies) will begin to influence their craft cooperatives and Indigenous ventures where their identity in the mediascape (landscape influenced by the media) will help drive entrepreneurial success. Ideoscapes (landscape based on various ideologies) for the Indigenous artisan will continue to expand as artisans begin to interact, collaborate, co-create, and co-produce knowledge with the government, non-government organizations, SES researchers, and entrepreneurship experts in the development of their communities through the transfer and exchange of both Euro-Western and Indigenous ideas (beliefs and cosmological perspectives), knowledges (epistemologies and ontologies), processes, and methods (strategies and tactics) regarding their livelihoods and wellbeing.

Little (2004) cites the work of Watanabe (1992) who defines the “type I” community as one characterized by the continuous social interactions of individuals who are linked both through their common language and history to a physical place (pg. 186). As Indigenous artisans who engage in the entrepreneurial crafting of ethnic arts, Little (2004) explains that “the place they come from, the other people within it, their physical interactions with the place, and their interrelationships with the people there help constitute themselves as a people and as part of a community” (pg.200). In other words, Indigenous artisans and their participation in the marketplace directly impacts their sense of identity and their sense of belonging to an organized community (social capital) honed by their social interactions and social interrelationships with various other people and classes found in that market landscape.

Social Spaces as Communities of Practice

Such organized groups of individuals within the social spaces of Indigenous craft artisans can be considered communities of practice. Wenger (2000) states that communities of practice are “the basic building blocks of a social learning system” (pg. 229). Those who participate in

communities of practice define their required competencies given their specific context (Wenger, 2000). Wenger (2000) further states that;

> "Communities of practice grow out of a convergent interplay of competence and experience that involves mutual engagement. They offer an opportunity to negotiate competence through an experience of direct participation. As a consequence, they remain important social units of learning even in the context of much larger systems. These larger systems are constellations of interrelated communities of practice." (Wenger 2000, p. 229)

In line with Little's views that the "bounded community" is no longer valid, Wenger (1998) states that boundaries actually "create new interplays of experience and competence" and are "the locus of the production of radically new knowledge" (pg. 254). In other words, boundaries between communities of practice act as the hot spots for skills, learning, and innovation (Wenger, 2000). Innovation, specifically *Indigenous innovation,* is "vital to the development of sustainable Indigenous entrepreneurial ventures" (Walters & Takamura, 2015, pg. 79). Walters & Takamura (2015) state that *Indigenous Innovation* can be produced in communities through the focus on factors unique to Indigenous peoples. They define these Indigenous factors as community, spirituality, sustainability, and entrepreneurship (pg. 92). The boundaries between organized Indigenous crafting activities as communities of practice could have the potential to create Indigenous innovation depending on the social processes involved.

Similar to Indigenous crafting activities, communities of practice involve the social process of participation. Wenger (1998) defines participation as a "complex" and "active" process that necessitate "doing, talking, thinking, feeling, and belonging" (pg. 56). The author goes on to state that one's participation in communities of practice is a "source of identity" (pg. 56). This supports Little (2004) and his assertions regarding how the Indigenous artisan marketplace helps develop the artisan's identity constructs mentioned previously. Lave and Wenger (1991) describe the process of '*legitimate peripheral participation*' through which new members activate their

learning in communities of practice as they become full members then later senior members over time. Lave and Wenger further that the sociocultural practices within communities of practice lead to learning knowledgeable skills. As young ethnic women engage in ethnic crafting activities within artisan communities of practice, they not only gain knowledge of important sociocultural skills but also develop their sense of identity as an ethnic/Indigenous artisan.

Communities of practice also involve the process of reification that Wenger (1998) defines as the "process of giving form to our experience by producing objects that congeal this experience into "thingness'" (pg. 58). Reification processes include "making, designing, representing, naming, encoding, and describing, as well as, perceiving, interpreting, using, reusing, decoding, and recasting" all of which could be considered the practice and processes associated with the crafting of ethnic arts (pg. 59). Participation and reification are "tightly interwoven" processes that depend on each other. Wenger (1998) states;

> "Participation and reification both require and enable each other. On the one hand, it takes our participation to produce, interpret, and use reification; so there is no reification without participation. On the other hand, our participation requires interaction and thus generates short-cuts to coordinated meanings that reflect our enterprises and our takes on the world; so there is no participation without reification." (Wenger 1998, p. 66)

Communities of practice develop identity and meaning through the complex interplay between participation and reification, moreover as these communities of practice exist within greater systems of coexisting communities of practice it is important to realize the power and influence they possess in transforming society through social capital (DfID, 1999) in both positive and negative ways in line with the continuous flux of changing flows within the human landscape of social relations discussed by Little (2004) and Appadurai (1996). Through Indigenous artisan participation in crafting communities of practice, they can reify sustainable livelihood as ethnic arts and crafts which will ultimately lead to more sustainable small-scale entrepreneurial

outcomes. Additionally, what binds Indigenous artisans to a particular place or space may not just be their language and common history (Watanabe, 1992 as cited in Little 2004) but also their common social practices regarding the production of their ethnic crafts that constitute their sense of identity and community.

Sociology of Art in Crafting Communities of Practice

The study of the social aspects of ethnic craft production impacting artisan identity and community focuses on the aesthetic decisions of artisans. Tice (1995), with reference to the Kuna ethnic craft communities of practice in San Blas, states that research on *molas* produced by the Kuna has led to the understanding of the "ethno-aesthetics" of the Kuna (pg. 56). Van Damme (1991) defines ethno-aesthetics as "the sociology of art in preliterate civilizations" and goes on to state that the term "ethno-aesthetics" has become more narrowly defined as 'aesthetics' in anthropology and the general ethno-scientific approach to the study of art (pg. 173). Ethno-aesthetics focuses on the 'emic' or Indigenous perspectives on aesthetic categories and principles (Van Damme 1991). Borggreen (2010) states that "ethno-aesthetics imply that certain types of aesthetics are seen, not as products of cultural activities or exchange, but as emerging from an essential and inherent sense of artistic creation related to the ethnicity of that particular people" and furthers that this aesthetic is "related to anthropology because indigenous people are often assumed to be more in direct contact with a kind of creative spirit…" (pg.7). Ethno-aesthetics, therefore offers a way to view the specific artisan craft practices within Indigenous communities of practice in order to better understand how these practices reflect Indigenous or ethnic identity constructs.

Tice (1995) reports that Kuna artisans started to create new designs in the *molas* that were influenced by the increased flows of people, money, and goods through their changing socio-economic environment (ethnoscapes and financescapes). As a result, the complexity of the *mola* designs increased (Tice, 1995). Tice (1995) also reports observations of mola designs based on modern cartoon characters like Bugs Bunny as evidence of the influence of the changing social environment. In a 4.5-month observational study of Indigenous Mazahua artisans

in Toluca Mexico, artisan embroidered underskirts called *enagua* were observed to evolve from traditional Mazahua animal and iconic motifs to more modern video game and animated characters like Pikachu and Tinkerbell (unpublished research study). Here, the ethno-aesthetics of Mazahua artisans and their designs of their traditional underskirts was observed to be influenced by the *technoscapes* and *mediascapes* (Appadurai 1996) which have exposed young artisans to videogames and animated movies in popular culture resulting in modern contemporary underskirt motifs based on videogame and animated movie characters. Understanding the ethno-aesthetics present in the reification of Indigenous identity as ethnic arts and craft can potentially provide the innovation found at the boundaries between communities of practice (Wenger, 2000) situated in the ethnoscapes, mediascapes, and technoscapes (Appadurai, 1996) within which they exist. In other words, ethno-aesthetic research has the potential to tap into the Indigenous "creative spirit" (Borggreen, 2010) of Indigenous artisans involved in the small-scale entrepreneurial activities of crafting ethnic arts that could provide the learning and innovation (Wenger, 2000) or "Indigenous Innovation" (Walters & Takamura, 2015) vital to Indigenous communities of practice.

Social Spaces as Cooperatives

Wenger (1998) states that communities of practice require social spaces to "support the work of engagement, imagination, and alignment" (pg. 237). These physical and virtual spaces are what Wenger (1998) refers to as "facilities of engagement" or "interactional facilities." Crafting cooperatives can be seen as the social spaces that facilitate Indigenous crafting communities of practice. Tice (1995) discusses at length the development and use of a Kuna cooperative stating that due to a $30,000 grant from the Inter-American Foundation, the cooperative was able to "(1) expand membership; (2) further diversify products sold by the cooperative; (3) lower production costs; (4) develop new educational and income-generating opportunities for members; and (5) increase women's participation in politics" (pg. 103). In short, cooperatives not only provide the physical social space (facilities of engagement) but also the virtual social spaces (interactional facilities) needed to develop the learning and innovation (Wegner 1998, Walters & Takamura

2015) within Indigenous crafting communities of practice that can in turn positively impact the success of small-scale entrepreneurship in these artisan communities.

Economic Aspects of Indigenous Crafting and Sustainable Entrepreneurship

Understanding the economic aspects of Indigenous crafts (how Indigenous artisans make a living) and how these activities link with concepts of sustainable entrepreneurship is necessary if artisans wish to develop their small-scale entrepreneurial activities through the commercialization of craft items. Tice (1995) explains that the Kuna Indigenous artisans, who are known internationally for their innovative approaches to solving their economic development problems, provide a good case study of Indigenous artisans who have managed control of their economic resources of land, and tourism, in the commercialization of their crafts (*molas*). Likewise, Little (2004) states that Mayan vendors believe that "when someone wears an item of clothing from Santa Catarina, then somebody from Santa Catarina has made money and has had control over the production of the item" (pg. 240). Both Tice and Little speak of economic or production "control" of artisan crafts which are critical to the success and sustainability of small-scale entrepreneurial activities of crafting ethnic arts. Little (2004) further describes the interactions of Maya vendors stating that vendors try not to bargain and usually offer their bottom price when faced by tourists who offer a low price. Maintaining control over price ranges of crafts for sale directly impacts how artisans make a living selling their crafts. Tice (1995) describes the impetus for the development of the previously mentioned Kuna cooperative as a reaction to the realization that women artisans were being exploited by intermediaries. In summary, Tice reports that how much a Kuna artisan will commoditize their *molas* directly relates to household subsistence-based livelihood production and migration factors. In other words, when subsistence-based livelihood production is low due to external factors (poor weather and less crops, economic shifts, etc.) artisans are forced to commoditize their crafts to supplement their income.

The need for supplemental income for Kuna artisans was due to the decline in subsistence-based production in the San Blas region and the subsequent shift from a primarily subsistence-based livelihood to a mixed cash economy which thrust Kuna women into the *mola*

commercialization market (Tice, 1995). Swain (1993) describes a similar situation with the Indigenous Sani households in China stating that when Sani households were reinstated in the 1970s as “units of production” women switched from farming to handicraft work (pg. 38). Swain further explains that Sani women (like the women of the Kuna) began to have more time to concentrate on sewing for business outside in addition to sewing for household consumption (pg. 38). In both cases of the Sani and Kuna women, the innovative development and management of an ethnic artisan cooperative was critical to successful progress of their entrepreneurial activities (Swain, 1993, Tice 1995). As discussed in the previous section, craft cooperatives provide the social spaces that facilitate the Indigenous innovations of communities of practice and can provide Indigenous artisans better “control” over their craft production helping to make their entrepreneurial activities more economically sustainable. As stated earlier, severe income inequality affects people's ability to obtain economic resources leading to instability (Cavanagh & Mander 2004) and so striving for greater economic equity and control could help communities of practice become more sustainable.

Tice (1995) lists the following 3 points for equitable distribution of resources from the sale of *molas* needed for the cooperative to be more sustainable: 1) increased working capital, 2) government recognition and support as principal *mola* marketer for the region, and 3) permission from the other tourist regions to open stores that promote/require consumers to purchase solely from the cooperative (Tice, 1995). The equitable distribution Tice has described can essentially be planned through a Value Network Analysis (Allee, 2008) of balancing tangible and intangible assets commonly dealt with in sustainable entrepreneurship. Allee (2008) states that intangible assets include the organization’s relationships (social capital), employee skill and knowledge (human capital), how effective work groups and structures are in the organization, production and service efficiency, and the level of trust within the organization’s relationships (social capital). Allee (2008) specifically defines tangible assets as the “financial resources and other capital-based resources that are controlled by the firm” (financial capital) (pg. 6). A value network analysis would be an essential planning tool for cooperatives like the ones described by Tice and

Swain as well as future fair trade craft ventures which would allow artisan petty-commodity producers the ability to control the intangible (Social and Human capital) and tangible assets (Financial capital) they wish to manage for their entrepreneurial endeavors in a more sustainable way.

Entrepreneurial endeavors such as craft venture creation is relatively unheard of in the realm of Indigenous crafting. Like cooperatives, small entrepreneurial ventures could provide both a physical but more likely a virtual social and economic space for Indigenous artisans to maintain economic control over their craft production, distribution, and sales. Dzisi (2008) citing Buame (2000) states that although educated Ghanaians prefer working for more established government positions, Indigenous entrepreneurs in Ghana have found success in venture development specifically where colonial interests were non-existent in a variety of areas including traditional artisanship. Vazquez-Maguirre, Portales and Velasquez (2018) state that the entrepreneurial environment developing in Indigenous rural communities in Ixtlan Mexico has provided Indigenous women the opportunity to start ventures resulting in increases in two-income households in the region. As demonstrated in these two examples from Ghana and Mexico, venture creation in addition to cooperatives could provide Indigenous artisans more options to manage their economic resources with regards to their crafts.

Cooperatives and craft ventures managed through equitable distribution of resources could potentially support Indigenous artisan communities of practice in making a living out of the small-scale entrepreneurial activities of crafting ethnic arts. Through the organized efforts of cooperatives and craft ventures, artisans will have access to the knowledge, skills, and social interactions—the Participation and Reification (Wenger 1998) —needed to better and more sustainably manage artisan cooperative member or venture entrepreneur efforts both in the short-term and in the long-term regarding crafting networks, development, sales, and distribution. In other words, in viewing crafting cooperatives and ventures as communities of practice, an emphasis can be placed on building social capital in terms of learning and networks that can provide artisans with more control over their economic situation to make it more sustainable.

Socio-Economic Aspects of Indigenous Crafting: Gender Roles

The gender roles associated with Indigenous crafting and artisans are important factors that have equal social and economic impacts on Indigenous artisans. These Indigenous socio-economic gender roles need close consideration especially in the context of taking a cultural practice like ethnic arts and converting it into a sustainable entrepreneurial activity. The cultural role and status of Indigenous women has been studied through the lens of feminist perspectives. Sherry Ortner, in her 1972 Feminist Studies article titled *Is Female to Male as Nature Is to Culture?*, states that "the secondary status of woman in society is one of the true universals, a pan-cultural fact" (pg. 5). She elaborates on this universal pointing to the contrary existence of diverse cultural conceptualizations of *Woman* impacting the actual way women are treated relative to their contribution, power, and influence in society from culture to culture through history. Ortner (1972) clearly states that although biological determinism might offer a way to explain this secondary status of woman through physiological facts and differences, such analysis would only be significant if placed in the context or framework of "culturally defined value systems" (pg. 9). She goes on to state that research "must attempt to interpret female subordination in light of…factors built into the structure" of human existence (pg. 9). This paper attempts to contextualize research on female subordination through its relationship with craft and crafting as the production of culture and how gender roles influence female artisan daily existence.

Ortner (1972) states that all cultures recognize the differences between the operations of nature and that of culture. She defines culture as "human consciousness and its products" and further states that "culture (i.e., every culture) at some level of awareness asserts itself to be not only distinct from, but superior in power to, nature, and that sense of distinctiveness and superiority rests precisely on the ability to transform—to 'socialize' and 'culturalize'—nature" (pg. 11). In essence, Ortner's argument as to why there exists a "pan-cultural devaluation of woman" hinges on the idea that women are symbolically identified with nature opposite to men who are identified with culture. According to Ortner (1972), women are only perceived to be closer to nature and still maintain a role in culture but are subordinate to men. Ortner (1972) calls attention

to the physiological (reproductive), socialization, and psychic functions of women regarding child rearing as evidence for the perception of women being closer to nature in relation to men.

In contrast to Ortner's feminist theories, Tice (1995) cites Howe & Hirschfeld (1981) reporting their argument that the women artisans of the Kuna are "clearly identified with culture rather than nature" referring to studies of Kuna myths and cosmology as support (pg.16). Tice (1995) admits that "although these symbolic studies provide fascinating glimpses into Kuna's mythical world, they tell us little about the realities of women's daily life…" (pg. 18). The actual gender related aspects of ethnic craft production in the daily lives of women artisans require other lenses through which to observe them.

Swain (1993) states that "Gender dynamics of indigenous ethnic arts production cannot be explained by development theories which predict that either women producers are empowered by economic gain, or exploited by the patriarchal drive of global capitalism…" (pg. 32). The author goes on to state that the divisions of gender regarding the labor involved in ethnic crafts impacts Indigenous communities because the household income from the production of these crafts influences gender relations. The production of ethnic arts and crafts can empower Indigenous women artisans to a point however, market and state factors could limit this (Swain, 1993). Swain cautions that there exists a balance between both the internal household factors and external market/state factors that structure gender relations and the empowerment of Indigenous women. Swain (1993) concludes by stating that;

> "The net result is neither the empowerment of women by local control, nor their exploitation in the capitalist world market as would be predicted by contrasting feminist theories of international development (Warren and Borque 1991). Rather it is argued that kin-based indigenous communities must balance gender dynamics internally, to meet external challenges to their production base, ethnic group integrity, and cultural survival" (Swain 1993, pg. 33).

Here, Swain points out that (Euro-Western) feminist theories alone are inadequate in fully addressing/predicting the empowerment/exploitation of Indigenous women within their immediate

and extended communities calling to attention that the integrity and cultural survival of these kinship-based Indigenous communities relies more on internal practices and processes. Little (2004) states that although the literature in anthropology contains many examples of how women have played an integral role in reproducing individuals, cultural goods, foods, and knowledge the reliance on Indigenous women to reproduce these things has been challenged by changing socio-economic situations throughout Latin America. Ultimately, it is the continuing external economic and social marginalization of Indigenous communities that has contributed to this internal reduction of ethnic cultural traditions and practices of women (Little, 2004). According to Cruz-Torres (2008), women in rural southern Sinaloa Mexico develop coordinated external response strategies on the (internal) household level mostly in the short-term. She notes that the four main strategies are: local rotating credit, food pooling, childcare, and labor exchange (pg. 271). Both Swain and Cruz-Torres point to how gender roles in Indigenous artisan communities are impacted by a balance of internal household responses (local control of craft and household production) to external pressures (changing socio-economic situations) which merit more analysis on the contribution of women.

Tice (1995) cites Feldman (1991) regarding the state of gender research on artisan petty-commodity producers stating that research analyses neglect the overall contributions of women within household or family run enterprises. Organization on the household-level, although under-researched, cannot be denied in terms of its influence on artisan crafting of ethnic arts. Tice (1995) describes how Kuna women reorganized their division of labor in order to facilitate their production of *molas*, stating that grandmothers in most Indigenous households have taken on a large amount of the responsibilities for food production and child rearing. This in turn has allowed daughters and granddaughters time to sew (Tice, 1995). Lastly, Tice (1995) states that it is equally important to study how crafts are used by artisans in addition to how they are produced and sold. Tice concludes that research has not yet addressed how gender is embedded in the consumption of crafts. Tice identifies the clear gap in the research on the gender roles in both the production and consumption of Indigenous artisan crafts and reveals opportunities that could critically impact these entrepreneurial activities. Suffice to say, more research is needed to better

understand how gender roles link to and affect crafts and craft production by the artisan petty-commodity producers that create them and how these gender roles impact the sustainability of these entrepreneurial activities especially in the context of craft cooperative establishment and craft venture creation. Craft cooperatives and ventures, as formalized groups (communities of practice), could be collectively designed around the gender issues specific to Indigenous women artisans. Social capital (knowledge and networks) could be powerful transformational tools within these communities of practice that Indigenous women artisans can use to transform the local control of craft and household production in balance with their changing socio-economic situations that ultimately impact gender roles in their community life.

Socio-Economic Aspects: Cultural Identity and the "Indigenous"

The socio-economic aspects of indigenous crafting are greatly impacted by the cultural identity of Indigenous artisans who engage in the entrepreneurial activities of crafting ethnic arts. Identity, especially for Indigenous artisans, is a complex issue involving questions as to who is "Indigenous" and how Indigeneity is defined. These socio-economic, cultural, or Indigenous identity aspects can be viewed from both *etic* and *emic* perspectives. Hindle et al (2007) provides the following definition of *Indigenous people* grounded on their analysis of 69 separate academic essays;

> "Indigenous people are individuals, groups, communities or nations who reside as disadvantaged minority citizens or non-citizens of a mainstream polity, which, through the success of physical and cultural invasion, has come to dominate them in lands they once controlled or who have been displaced by the dominant hegemony from lands they once controlled" (Hindle et al 2007, pg. 7.).

Here, Hindle et al (2007) base this definition of 'Indigenous people' on authors found within the canon of published research articles on Indigenous entrepreneurship. Upon analysis (not critique), one can see that the Hindle et al (2007) definition relies on the politically oriented language of decolonization which speaks volumes to how research and scholarship view

Indigenous peoples. Corntassel (2003), in his article titled *Who is Indigenous? 'Peoplehood' and Ethnonationalist Approaches to Rearticulating Indigenous Identity*, states that "the question of 'who is indigenous?' is best answered by indigenous communities themselves" (pg. 75). The author follows by stating that although unlimited self-identification for Indigenous peoples is an accepted practice, most of the global forums in states that have Indigenous peoples living within their borders are against such practices and policies (Corntassel, 2003). The construction of Indigenous identity faces the dilemma of a stricter definition in order to protect Indigenous peoples that may inadvertently exclude certain Indigenous communities on one side, and a broad definition that allows Indigenous peoples the "unlimited right of indigenous self-identification" on the other side (Corntassel, 2003). Corntassel offers his definition of Indigenous peoples based on the following four interrelated concepts of sacred history, ceremonial cycles, language, and ancestral homelands;

> "1. Peoples who believe they are ancestrally related and identify themselves, based on oral and/or written histories, as descendants of the original inhabitants of their ancestral homelands;
>
> 2. Peoples who may, but not necessarily, have their own informal and/or formal political, economic and social institutions, which tend to be community-based and reflect their distinct ceremonial cycles, kinship networks, and continuously evolving cultural traditions;
>
> 3. Peoples who speak (or once spoke) an indigenous language, often different from the dominant society's language - even where the indigenous language is not 'spoken', distinct dialects and/or uniquely indigenous expressions may persist as a form of indigenous identity;
>
> 4. Peoples who distinguish themselves from the dominant society and/or other cultural groups while maintaining a close relationship with their ancestral homelands/sacred sites, which may be threatened by ongoing military, economic or political encroachment or may be places where indigenous peoples have been

previously expelled, while seeking to enhance their cultural, political and economic autonomy" (Corntassel 2003, pp. 91-92).

Although the Corntassel (2003) definition of Indigenous People is not a singular concise statement like the Hindle et al (2007) definition, the four-tiered Corntassel (2003) definition is able to incorporate both an emphasis on self-determination as well as an emphasis on the interrelationships of Indigenous identity with other central Indigenous perspectives and worldviews. Both the Hindle et al (2007) and Corntassel (2003) definitions of Indigenous peoples offer different and contrasting ways (*etic* and *emic*) in which to view indigeneity and cultural identity. Hindle et al (2007) offer an *etic* view based on academic research and scholarship whereas Corntassel (2003) offers an *emic* view based on the Indigenous concepts/categories of sacred history, ceremonial cycles, language, and ancestral homelands. Both the Hindle et al (2007) and the Corntassel (2003) definitions focus on the specific attributes of Indigenous identity (one based on decolonization and the other based on Indigenous values).

In contrast to this, Little (2004), in reference to his research on the Indigenous artisans of the Kaqchikel Maya, states that rather than looking at the categories or attributes of identity one should focus on identity as a process. Little (2004) further states that the specific identity process of the Kaqchikel Maya artisans uses strategically different constructs of identity for political and economic reasons as well as for maintaining their livelihoods. Swain (1993) states that ethnic crafting, although not large enough to support the entire family income, is more important in creating Indigenous identity than other forms of work available within the nation state. Swain then quotes Graburn (1976) who defines people of the 'Fourth World' as Indigenous peoples whose lands exist within the nation states of those countries in the First, Second, and Third Worlds (as cited in Swain 1993). Tice (1995) calls for more research into how ethnic crafts of the Fourth World enter and how they come into conflict with the market for handcrafted goods in the industrialized world.

As mentioned earlier, Tice (1995) uses an ethno-aesthetic approach to her exploration of Kuna identity. She states that "Kuna women use intricacy of design, use of color, and fineness of

stitching to judge their own and each other's molas" (pg. 81). Here ethnic or Indigenous perspectives on design and aesthetics offer a lens through which to view how Kuna women both construct and view their Indigenous identity. Tice (1995) follows by stating that "understanding who wears molas, why they are worn, and within which social contexts illuminates the ways women's dress defines Kuna ethnic identity and is used symbolically as a means for resistance" (pg. 81). The socio-economic aspects of Indigenous identity of Mayan women are best described by Swain (1993) who states that "women's ethnic dress is a critical issue for indigenous communities living distinct cultural forms; for the pan-Maya nationalists trying to create cultural survival strategies; and for the state, which is both suppressing Maya indigenous cultures and promoting generic Maya tourist arts" (pg. 43). This all leads to the issue of the commodification of cultural identity & ethnicity (Swain 1993, Tice 1995, Little 2004) and how cultural identity intersects with Indigenous crafting, Indigenous artisan livelihood, and Indigenous entrepreneurship.

Hindle et al (2007) provides the following two definitions of Indigenous entrepreneurship grounded on their analysis of 69 separate essays;

> "Indigenous entrepreneurship is activity focused on new venture creation or the pursuit of economic opportunity or both, for the purpose of diminishing Indigenous disadvantage through culturally viable wealth creation" (Hindle et al 2007, pg. 7).

> "Indigenous entrepreneurship, as a research field, is the scholarly examination of new enterprise creation and the pursuit of opportunities to create future goods and services in furthering economic progress by redressing key issues of the disadvantage suffered by Indigenous people" (Hindle et al 2007, pg. 7).

Hindle et al (2007) purposely divide their definitions to fit easily into the two very basic camps of "economic opportunity" as associated with "new venture creation" (an activity) and "economic

progress" as associated with "new enterprise creation" (a research field). Although the Hindle et al (2007) definitions neatly achieve this divide, the activity and research field of Indigenous entrepreneurship is much broader involving a multitude of social, cultural, and economic aspects. In other words, could a single definition of Indigenous Entrepreneurship encompass a variety of different aspects that are collectively activity-based as well as research-based?

Anderson et al (2006) in defining Indigenous entrepreneurship argue that "…by their very nature, the characteristics that make a group indigenous…favor a somewhat collective approach to entrepreneurship involving a mingling of social, cultural and economic objectives. We thus believe that the enterprise related activities of Indigenous people in pursuit of their social/cultural determination and economic goals exemplifies a distinctive activity that can be called 'indigenous entrepreneurship', which operates at the intersection of social and economic entrepreneurship…" (pg. 2). The authors follow up by stating that Indigenous entrepreneurship should be considered as an extension of social entrepreneurship (pg. 11). Anderson et al (2006) furthers their definition stating that Indigenous entrepreneurship within the domain of social entrepreneurship not only involves making a living (economic prosperity) but also involves collective social-cultural identity as well as concepts of wellbeing (pg. 28). They conclude by stating that Indigenous entrepreneurship is based on the economic development of communities and that although the concepts of "social capital, networks, cognitive styles, technology adoption, competitive positioning, and entrepreneurial incentives" are common to the field of entrepreneurship, they should be researched in the context of the histories of immigrant co-ethnic and Indigenous peoples (pp. 30-31). In contrast to the Hindle et al (2007) divided definitions, the Anderson et al (2006) definition is more integrative, incorporating Indigenous perspectives on the social, cultural, and economic objectives as well as the research of the base histories of Indigenous peoples.

The linkages between the cultural identity of Indigenous artisans and the success of their entrepreneurial activities in crafting revolve around the collectivistic worldviews they possess and how these worldviews shape and inform their social, cultural, and economic objectives / activities. The Indigenous identity of artisan petty-commodity producers should be seen as fluid, shaping

and being shaped by internal as well as external factors affecting the lived cultural forms, the economic cultural forms, and the political cultural forms in their community landscapes. These cultural identity forms in turn impact the perceptions of the different concepts of Indigenous authenticity based on *what* is crafted, *where* it is purchased, and *who* has produced the craft. As for *what* is crafted, Tice (1995) discusses the "ethnic authenticity" of *mola* designs based on traditional Kuna patterns and motifs, noting that because artisans made these crafts based on cultural history, they were more valued by tourists. The author concludes that these activities and the commercialization of the Kuna Indigenous crafts has resulted in the commoditization of Kuna ethnic identity but contends that the Kuna artisans have successfully leveraged their ethnic Indigenous identity to their collective economic advantage (Tice, 1995). Relating to *where* the crafts are purchased, Little (2004) states that the tourists who shop for crafts at the Mayan Indigenous marketplace perceive how culturally authentic these places are– what he refers to as "marketplace authenticity" (Little, 2004). The author furthers that, visitors are almost always suspicious of Mayan craft marketplaces created specifically for tourists (Little, 2004). Lastly, concerning *who* has produced the craft, Swain (1993) describes Mayan artisans as the "knowledgeable producers of ethnic arts" but notes that the nation state sees Mayan women artisans merely as a "sustainable resource to be exploited as the living reproducers and markers of authenticity" (pg. 43). The notion of "production authenticity" therefore is based on the identity of Indigenous artisans as the state's producers of authenticity in which their authenticity as producers of Indigenous crafts can likewise be questioned. Tice, Little, and Swain all agree that ethnic dress is central to how Indigenous artisan petty commodity producers are identified in the marketplace and how their Indigenous or cultural identity helps determine what strategies Indigenous artisans use to achieve their socio-economic objectives and goals. Here, communities of practice as seen through the lens of Indigenous crafting have the potential to produce Indigenous crafts (*what is crafted*) from a culturally grounded practice, in a social-spatial environment (*where it purchased from*) that facilitate social networks (social capital), and from artisans (*who have produced it*) who have a potentially firmer Indigenous identity as representatives of cultural, marketplace, and production authenticity.

Conceptual Framework

The following conceptual framework in *Figure 22* represents a summary of the interrelationships between Indigenous crafting and sustainable entrepreneurship through their critical linkages with the social aspects of Indigenous community life. The previously cited authors in this paper's literature review are also indicated for each element in the framework.

A triad made up of the linkages between Indigenous crafting, Indigenous community life, and sustainable entrepreneurship forms the core of the conceptual framework. Indigenous crafting, the first member of the triad, is split between crafts for sale as a business and crafts for household consumption. The second member clockwise in the triad is Indigenous community life and it is associated with crafts for household consumption. Indigenous community life is broken down into ethno-aesthetics, communities of practice, gender roles, cultural identity, and making a living. Making a living is central and also shared with the third part of the triad; sustainable entrepreneurship. Sustainable entrepreneurship is associated with crafts for sale as a business and is further broken down into the elements of social capital, social spatial, Indigenous entrepreneurship, and Indigenous innovation. There are several interrelationships between the factors that make up both Indigenous community life and sustainable entrepreneurship indicated by the two-way arrow between them.

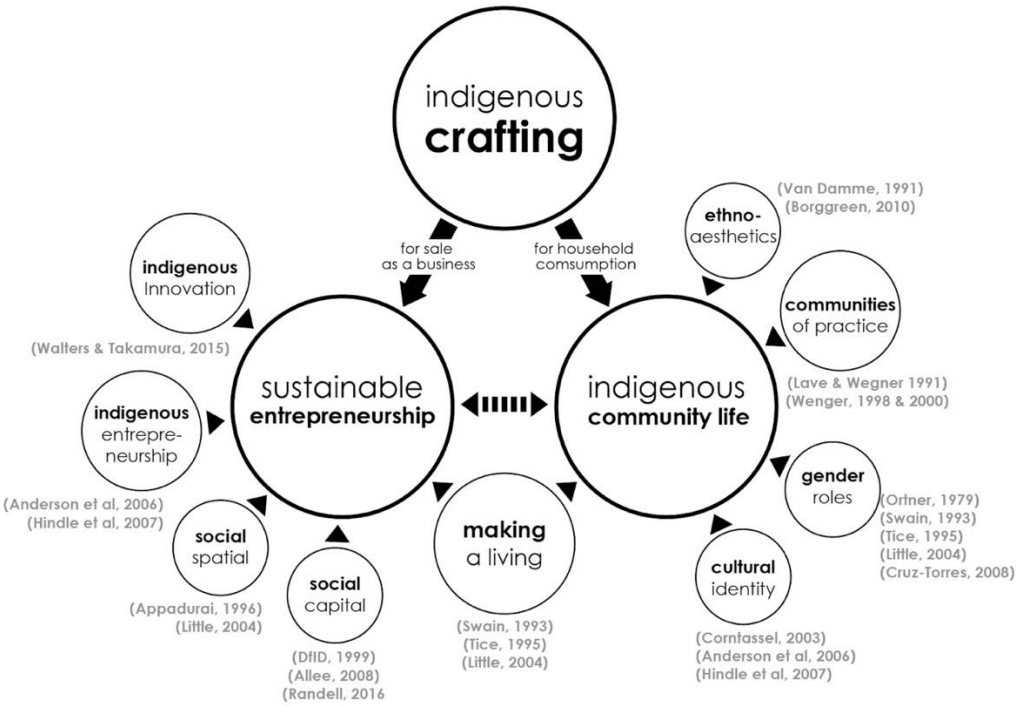

Figure 22: Indigenous Crafting, Community Life, and Sustainable Entrepreneurship

Discussion

Indigenous artisans who choose crafting as an alternative livelihood option to maintain social, economic, and socio-economic stability will need to focus on developing adaptive strategies that center around social innovation. Sustainable entrepreneurship is well suited for this task because it is based on the sum of the social, economic and environmental dimensions of enterprise development. Sustainable entrepreneurship is however based on Euro-Western concepts that need Indigenous contexts to make them easier to apply in the co-development of Indigenous communities through the co-production of knowledge. The co-production of knowledge requires mutual respect and acknowledgement of both Euro-Western and Indigenous concepts and perspectives and the indigenization of Sustainable Entrepreneurship is not just based on elevating Indigenous concepts and perspectives in the context of entrepreneurship but also recognizing the application of Euro-Western concepts and perspectives like the concept of Communities of Practice in Indigenous contexts. The indigenization of sustainable entrepreneurship in its use in the co-development of Indigenous artisan communities is necessary

to mitigate risks to the social capitals tightly interwoven in the fabric of crafting processes and artisan community life.

Indigenous artisans in pursuit of collective outcomes and aspirations can co-develop communities of practice through social capital as networks and these communities will in turn help build social relationships. Likewise, the landscapes (ethnoscapes, technoscapes, financescapes, mediascapes, and ideoscapes) of these communities of artisans will revitalize Indigenous artisan identity through social interactions and social interrelationships with various other people and classes. The small-scale entrepreneurial activities of Indigenous artisans will become more sustainable as artisans participate in crafting communities of practice where they can reify sustainable livelihood as ethnic arts and crafts further constituting their sense of identity and community. Indigenous crafting communities of practice can provide the social-spatial environments where artisans can hone their craft practices and the ethno-aesthetics present in the reification of Indigenous identity as ethnic arts and crafts. These ethno-aesthetic practices will access the *creative spirit* (Borggreen, 2010) of the participating artisans unleashing *Indigenous innovations* (Walters & Takamura, 2015) supported by the learning processes in these craft-based Indigenous communities of practice.

As these Indigenous communities of practice develop into cooperatives and craft ventures, artisans will have access to the knowledge, skills, and social interactions needed to sustainably manage artisan efforts both in the short-term and long-term regarding crafting networks, development of goods, craft sales, and craft distribution. Craft cooperatives and craft ventures as Indigenous communities of practice will build social capitals (knowledge and networks) that artisans will use to transform the structures that limit their communities facilitating local control of craft and household production in balance with the changing socio-economic situations that impact gender roles in their community lives. Craft cooperatives and craft ventures as Indigenous crafting communities of practice will produce Indigenous crafts from culturally grounded practices, created in social-spatial environments that facilitate social networks that will support artisan's Indigenous identity as global representatives of their cultures.

The future of Indigenous crafting activities will rely on viewing them as Indigenous communities of practice in order to secure Indigenous artisan identity, learning, and Indigenous innovation. Looking at sustainable entrepreneurship in the context of Indigenous craft-based enterprise creation from an indigenized perspective will help to mitigate the potential risks regarding social capital and its influence on human and financial capital levels within the Indigenous artisan communities who want to scale up entrepreneurial activities to improve their livelihoods. More research into the linkages between Indigenous crafting, Indigenous artisan community life, and sustainable entrepreneurship will further the body of knowledge regarding the positive and negative impacts each have on the other in the ongoing life of Indigenous crafts and ethnic arts.

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CHAPTER 5

CONCLUSION

This research began with the general query: How might sustainable entrepreneurship through Indigenous crafting activities positively affect Indigenous livelihood and wellbeing? The objective of this research was to understand how to more effectively apply sustainable entrepreneurship in Indigenous community development focusing on the social, cultural, and economic factors that impact poverty alleviation.

Effective application of sustainable entrepreneurship requires a way to view its Euro-Western perspectives of the concepts of agency, livelihood, and wellbeing through an Indigenous worldview so that Indigenous communities, researchers, and government/non-government organizations can better co-create and co-develop Indigenous communities towards more sustainable outcomes. This research has proposed alternative ways to view the concepts of sustainable entrepreneurship from a pre-colonial and decolonized perspective in an attempt to *Indigenize* sustainable entrepreneurship so that Indigenous communities can begin to embrace what it has to offer in terms of sustaining Indigenous agency, Indigenous livelihood, and Indigenous wellbeing as well as to help researchers and outside organizations to more seamlessly collaborate with Indigenous communities in achieving their sustainable development goals and aspired outcomes. Three research essay papers based on extensive literature reviews and ethnographic field data collected on four Indigenous Mazahua artisan communities in three Indigenous Mazahua municipalities in Toluca Mexico were presented to offer ways to *Indigenize* sustainable entrepreneurship in the context of Indigenous petty-commodity craft production as small-scale entrepreneurial activities. Essay paper one, a research-oriented study, explored the inter-relational effects between Indigenous crafting (its act and process), Indigenous wellbeing (of Spirituality, Cultural Efficacy, Place Thought, Subjective Wellbeing, and Buen Vivir), and sustainable livelihood with respect to the six capital assets (Physical, Financial, Human, Natural, Social/Cultural, and Spiritual) in order to inform and support the development of future crafting

ventures. This study was based on answering the two research questions; “In what ways does the Act of Crafting influence, enhance, or affect Mazahua wellbeing?” to understand how crafting is embedded within Indigenous artisan community life and “In what ways does the Act and Process of Crafting influence or affect Mazahua livelihood?” in order to understand how Indigenous artisans make a living through their crafts. Paper two offered concepts to understand the deeper layers of the co-production of knowledge with Indigenous peoples through a discussion on the nature of the relationship between structure and agency based on a political idealist approach to community development. A specific focus on agency (both human and non-human) and Indigenous wellbeing (Buen Vivir) was followed by the proposal of the concept of *Indigenous Adaptive-Transformative Agency* as a way of Indigenizing sustainable entrepreneurship so that Indigenous crafting communities of practice can better fulfill their aspired household wellbeing and livelihood outcomes. The Indigenous venture Vitu™ was presented as a vehicle through which Indigenous Adaptive-Transformative Agency can be applied to artisan petty-commodity production of crafts as a social enterprise. Paper three provided concepts focused on the application of co-produced knowledge in sustainable entrepreneurship by examining Indigenous crafting and its linkages with the social aspects of artisan community life (social relationships, social spaces, etc.), Indigenous crafting and the economic aspects of craft production as small-scale entrepreneurial activities, and Indigenous crafting and the socio-economic aspects (gender roles and cultural identity) that impact sustainable entrepreneurship in the context of communities of practice. Each of these three papers engage with literature on development and local level data to more deeply understand Indigenous perspectives--Indigenous artisan life worlds concerning ethnic craft production, Indigenous artisan views on sustaining livelihood through crafting, and Indigenous pre-colonial cosmological world views of agency, wellbeing, and entrepreneurship. Each paper addressed the inclusion of Indigenous perspectives when researching Indigenous artisan community life regarding the social, economic, and socio-economic aspects of ethnic crafts as petty-commodity producers. Understanding Indigenous perspectives is a critical next step in the sustainability sciences specifically in the context of sustainable entrepreneurship and its application in poverty alleviation and community

development at the base of the economic pyramid. Sustainable entrepreneurship must evolve its primarily Euro-Western based concepts and principles to incorporate Indigenous pre-colonial and decolonized concepts and approaches if it is to be effectively applied in the Third World in situ.

BoP community development is no longer a one-way relationship from government and non-government organizations to communities. Contemporary approaches involving co-creation and co-development efforts along the lines of the political idealist perspective begin to move nation / state / community relationships towards higher levels of justice, equity, and inclusion. Indigenous communities are no exceptions as these communities begin to fully exercise their Indigenous agency to push their development in pursuit of their aspired outcomes. Results of this research suggest that the Indigenization of sustainable entrepreneurship could aid both government/non-government organizations and Indigenous communities to more fully realize their mutual goals and outcomes by building bridges between Euro-Western knowledge (concepts, principles, and methodologies) and Indigenous ways of knowing (Indigenous Knowledge, Traditional Knowledge, Indigenous Knowledge of Environments, and Traditional Ecological Knowledge). Likewise, Indigenous pre-colonial perspectives and cosmological approaches could help to educate SES researchers, social innovation experts, and sustainability scientists to expand their capabilities as change agents, while also building Indigenous individual and community capacities towards sustainable growth, cultural and language preservation, and Indigenous wellbeing support.

Future Research Areas for the Indigenization of Sustainable Entrepreneurship

The Indigenization of sustainable entrepreneurship in the context of Indigenous crafting as small-scale entrepreneurial activities and the Indigenous life worlds of the petty-commodity craft artisans that produce them will involve continuing research in a variety of areas. Based on the research conducted in this dissertation, the following six areas in the context of petty-commodity craft production have been identified for future research in further progressing the indigenization of sustainable entrepreneurship:

Indigenous Artisan Wellbeing

The act and process of Indigenous crafting have far-reaching implications in the complex web of Indigenous artisan wellbeing. The results of this research suggests that the physical act of Indigenous crafting can potentially build artisan psychological resilience due to its therapeutic nature. Continued field research and literature review in art therapy and its application in Indigenous crafting will broaden knowledge in the creative processes of Indigenous artisans and their impact on artisan emotional/psychological wellbeing.

Akin to emotional/psychological wellbeing is the concept of Subjective Wellbeing and in the context of Indigenous crafting this research explored the ties between the act of crafting, cultural identity, and cultural efficacy expressed as artisan participation in cultural preservation. Strong cultural identity engagement coupled with high levels of cultural efficacy can improve one's subjective wellbeing (Houkamau & Sibley 2011). Data results show that Indigenous Mazahua artisans view the production of their crafts as a way to protect their traditions and culture from extinction. Additionally, Mazahua artisans believe that their consumption of their crafts (being able to wear their traditional dress) not only provides them with cultural identity but also aids in preserving their culture. In other words, Mazahua Indigenous crafts provide artisans with strong cultural identity and their participation in the production of these crafts as cultural preservation leads to a heightened sense of cultural efficacy positively increasing their subjective wellbeing. As mentioned earlier, the physical act of crafting can have positive emotional impacts and this research has reported that Indigenous crafting improves an artisan's individual subjective wellbeing by developing a sense of creative satisfaction and accomplishment. Additional research into crafting's influences on Indigenous artisan subjective wellbeing, cultural identity, and cultural efficacy will help broaden sustainable entrepreneurship with regard to sustaining artisan individual wellbeing and psychological resilience.

In addition to an Indigenous artisan's individual sense of subjective wellbeing there is the Indigenous artisan's collective sense of wellbeing which can best be interpreted as Buen Vivir. The concept of Buen Vivir encompasses not only individual wellbeing but also includes aesthetic, cultural, historical, environmental, and spiritual ways to give life meaning through a collective

sense of wellness. More research on the Indigenous crafting process and Indigenous artisan relationships with nature and natural resources could determine the influence of crafting on artisan perceptions of Buen Vivir and the collective sense of wellbeing in artisan communities.

As the concept of Buen Vivir suggests, the act and process of Indigenous crafting develops spiritual wellbeing through connections with ancestors, the spiritual meanings of designs, the traditional spiritual powers of Indigenous crafts, and ultimately the building of spiritual capital. Research on the spiritual wellbeing aspects of Buen Vivir and Indigenous crafts can begin to shed light on the precolonial cosmological perspectives of Indigenous artisans and how they might better leverage spiritual capital as well as other forms of capital in their sustainable entrepreneurial endeavors.

Indigenous Livelihood

Spiritual capital is just one of the six forms of capital specifically identified in this research as a key component of Sustainable Livelihood. Spiritual capital was added to the more common forms of capital in order to help Indigenize Sustainable Livelihood's application in this study of indigenous crafting in the context of sustainable entrepreneurship. In this study, Spiritual capital access was ranked highly by Indigenous Mazahua artisans when asked about the spiritual context of their craft production. This high ranking was backed up by semi-structured interview data that indicated Indigenous crafting's spiritual link to ancestors, the spiritual power of the crafts themselves, and the spiritual satisfaction of crafts and craft production in religious contexts. Observational studies conducted in this research also supports the spiritual linkage between craft production and artisan spirituality as religious/spiritual/social events were observed to be a central motivation for artisans in connection with the creation and consumption of their crafts on a household level.

Closely tied to spiritual capital and spirituality is Social/Cultural capital. This research suggests that the act and process of Indigenous crafting involves social interactions within stitching/crafting circles and in the case of Mazahua artisans, the participation in spiritual religious events (church festivals) that are also social cultural events that help to increase an artisan's

Social/Cultural capital through social networking and fostering cultural identity. More research is needed to understand how increases in Social/Cultural skill sets such as entrepreneurial training or other skill training could positively influence Indigenous artisan Social/Cultural capital access towards the success of their small-scale entrepreneurial craft activities.

This research study targeted only highly skilled Indigenous artisans which could account for the high ranking of Human capital access in the Verbal surveys. Mazahua artisans actually ranked Human capital the highest over the other forms of capital in this study primarily because they rely so heavily on highly skilled artisans in their kinship/friendship-based stitching/crafting circles for craft production. Research on Human capital must be collected before and after an indigenous artisan venture is created in order to assess how the venture may stress Human capital levels in sustaining the business. Sustainable entrepreneurship of an Indigenous artisan venture must consider Human capital from an Indigenous perspective as increasing Human capital would not be as simple as just hiring more artisans whether skilled or not due to the complexities and sensitivities of Indigenous kinship/friendship-based artisan relationships. The financial success of any Indigenous artisan venture or cooperative would hinge on its Human capital levels and so research in this area will be vital.

The financial success of ventures and cooperatives also depends on Financial capital access. Unfortunately, Indigenous artisans at the base of the economic pyramid have very little access to financial capital and this is supported by the literature review and data collected in this study. Financial capital ranked the lowest out of the other forms of capital assessed. Only one third of the Mazahua artisans reported that they saved any money from craft sales and the two thirds of Mazahua artisans indicated that they did not have any savings at all. Research into finding ways to increase Indigenous artisan financial capital (through government grants, micro financing, angel investment, etc.) will be essential to the success of any Indigenous artisan venture or cooperative operating at the base of the economic pyramid.

In the context of Indigenous artisan ventures and cooperatives, Physical capital is directly tied with Financial capital as funds often go straight to supporting the physical resources (yarn, dyes, sewing machines, etc.) needed in Indigenous craft production. Physical capital in the

context of other basic household needs (food, medicine, school fees, etc.) is also a concerning factor especially in very poor Indigenous communities as most of the financial capital in artisan households goes toward supporting it. As reported in this study on Mazahua Indigenous artisans, the Physical capital needed to support crafting no longer comes from Natural capital as artisans prefer to purchase industrial yarns and chemical dyes instead of harvesting the materials from the natural environment (natural capital).

The transfer from Natural capital to Physical capital in the craft production of Mazahua Indigenous artisans may be unique to the Mazahua and so more research into other Indigenous artisan communities will be needed to determine Natural capital's relationship with Indigenous crafting. As reported in this study, Mazahua artisans may have inadvertently lessened their dependance and relationship with nature in the production of Indigenous crafts which could have negative impacts on their sense of Buen Vivir, their observed lack of Place-Thought, and sense of Spirituality with regards to the natural landscape. The question comes to mind as to whether Mazahua artisans could rekindle their connections with nature through their crafts if they were to explore a renaissance of traditional craft processes (culling sheep's wool to make yarn and foraging Indigenous plants to naturally dye the yarn) and how their connections with nature would enhance their social, cultural, and spiritual wellbeing. These questions could be answered with deeper research into Natural capital in the production of Indigenous crafts in the context of sustainable entrepreneurship and its application.

Indigenous Adaptive-Transformative Agency

Applied action-oriented research is needed to substantiate the concept of Indigenous Adaptive-Transformative Agency as an integrative concept of agency to be used in the context of Indigenous peoples and their sustainable entrepreneurship activities. The combination of Adaptive Agency's allowance for multiple perspectives views (like that of Buen Vivir and Place-Thought) with Transformative Agency's institutional entrepreneurial focus (from leadership to outcome guidance) is ideal for Indigenous communities in achieving their sustainable entrepreneurship goals and aspired community outcomes based on their Indigenous perspectives

of livelihood and wellbeing. The concept of Indigenous Adaptive-Transformative Agency will allow Indigenous artisans the processes and tools to transform their institutional arrangements without challenging them as well as will allow Indigenous artisan entrepreneurs a more collective pathway towards leadership of their coops and ventures focusing on outcomes. The concept of *Indigenous Adaptive-Transformative Agency* can also provide Indigenous communities and SES researchers with a means to navigate as well as negotiate the complex institutional arrangements that either positively or negatively affect them in their Indigenous, social, and sustainable entrepreneurial endeavors ultimately leading to the Indigenization of sustainable entrepreneurship and the alleviation of poverty through its focus on the adaptive capacity building of learning and reflexivity and its additional focus on transformative capacity building regarding institutional entrepreneurship.

Indigenous Crafting and its Social, Economic, and Socio-Economic Aspects

Social relationships are the backbone of Indigenous artisan craft production as they involve both household social relationships (through gender roles) and community social relationships (through communities of practice). The social relationships and networks of artisans who engage in the small-scale entrepreneurial activities of crafting ethnic arts often take place within or near their communities (i.e. marketplaces) which are the social spaces (structures or institutions) in which social relations are built.

Social Spaces (marketplaces, communities of practice, cooperatives, and ventures) are the landscape hot spots for Indigenous artisans where money, goods, information, skills, and knowledge are exchanged. The Appadurai (1996) notion that these Indigenous artisan landscapes are simultaneously “ethnoscapes” (landscapes based on ethnicity), “technoscapes” (landscapes characterized by technologies), “financescapes” (landscapes that include financial transactions), “mediascapes” (landscapes that are influenced by the media) and “ideoscapes” (landscapes based on various ideologies) shows the true complexity and fluidity of the social relationships that Indigenous artisans must navigate both locally and globally. Continued research is needed to understand the social relationships of indigenous artisans and the social spaces

within which they occur as these social relationships and spaces are free-flowing and ever changing especially as Indigenous community life, society, and culture evolves.

The evolution of Indigenous artisan community life has direct impacts on the Indigenous crafts they produce. As described in this research, several examples from the literature review, the observational study, and the semi-structured interview data collected suggest that Indigenous artisan crafts are influenced by the aforementioned Appadurai (1996) landscapes, specifically mediascapes. Mazahua *mbox kiezhe* underskirts (like the Kuna *mola*) were observed to change from traditional patterns and motifs to more modern icons like Pikachu from video games and Tinkerbell from animated movies. Mazahua *mbox kiezhe* underskirts also evolved from influences of the technoscapes where natural handmade yarn dyed with Indigenous plants evolved into crafts made from industrial yarn in bright chemically dyed colors. In depth research on the Sociology of Art (ethno-aesthetics) as another social aspect of Indigenous crafting is needed in order to assess the changing attitudes of both artisans and tourists regarding the aesthetic designs and the ever-evolving concept of Indigenous craft authenticity.

Discussion

The Sustainable Development Goals of 2015 recognized the world's greatest challenge to be the eradication of poverty (United Nations, 2015). This research has been fueled by the growing need for more effective and sustainable poverty alleviation methods specifically affecting Indigenous peoples. The responsibilities for the poverty alleviation of Indigenous peoples are shared by both the global North and South. Poverty alleviation in the context of Indigenous community development begins with the building of strong transdisciplinary relationships that are grounded in collaboration through the shared transfer and co-production of knowledge, ideas, and perspectives. Effective and sustainable poverty alleviation will rely on finding ways to bridge the gap in understandings between the complex knowledge systems of the Global North and South. The Sustainability Sciences and Indigenous Knowledges in the context of Indigenous community development is no exception. Concepts, principles, and methods of sustainable entrepreneurship for example, may have tremendous value in the fight against poverty but unless these Euro-

Western concepts, principles, and methods are fully transferred and transformed through Indigenous perspectives and ways of knowing, their application in the field is in question. Sustainable entrepreneurship (its field of practice and knowledge) in the context of Indigenous community development must therefore be *Indigenized* through Indigenous pre-colonial and decolonized perspectives so that it can have broader application in impacting Indigenous agency, Indigenous livelihood and Indigenous wellbeing.

Indigenous peoples are taking on the challenges of sustainable community development for themselves through their small-scale entrepreneurial activities but only with the support from government, non-government organizations, SES researchers, entrepreneurship experts, and a wide range of sustainability scientists can poverty reduction and social innovation be achieved more sustainably. More research into the effects of sustainable entrepreneurship on human rights will be needed to protect the Indigenous innovations that these entrepreneurial activities produce. Additionally, such research will be needed to study how to more effectively apply sustainable entrepreneurship to Indigenous livelihood and wellbeing concerning the social, cultural, and economic factors that can support the alleviation of poverty. These factors may be specific to Indigenous peoples and their communities affecting their economic, social, and environmental rights and agency. The Indigenization of sustainable entrepreneurship is more than just integrating Indigenous concepts and perspectives (like Buen Vivir, Place-Thought, etc.) and requires analysis into how its Euro-Western concepts and perspectives (like Communities of Practice) actually relate and apply to the lives of Indigenous peoples. The ongoing efforts on the journey towards the Indigenization of sustainable entrepreneurship can only be done through collaborative, co-productive, and co-creative activities grounded in equity, justice, and inclusion– so badly needed today in both the Global North and South. The Indigenization of sustainable entrepreneurship will help to ensure *equity* concerning Indigenous livelihood, *justice* in terms of securing Indigenous people's rights and agency, and *inclusion* with respect to Indigenous perspectives and worldviews on both human and non-human wellbeing.

Next Steps for this Research

Due to the COVID19 pandemic and the shutting down of the border between the US and Mexico, completion of Phase 3 & 4 for this study was postponed. Phase 3 would have studied Mazahua artisans' views of authenticity; specifically, "ethnic authenticity" (Tice 1995), "marketplace authenticity" (Little 2004), and "production authenticity" (Swain 1993) through ethno-aesthetic interviews (Van Damme 1991, Tice 1995, Borggreen 2010). Phase 4 of this research, through focus groups, would have studied Mazahua artisan definitions of sustainable and social entrepreneurship otherwise known as Indigenous entrepreneurship (Anderson et al 2006, Hindle et al 2007), focusing on the social as well as economic goals for the artisans and their communities. The study of Indigenous concepts of authenticity and Indigenous definitions of sustainable entrepreneurship are essential in further understanding the linkages between Indigenous crafting, sustainable livelihood, and Indigenous wellbeing as initially established in this research. Phase 3 & 4 will be conducted as soon as the CDC (Center for Disease Control) reports it is safe to enter Mexico and is tentatively planned for summer 2023. As stated in the beginning of this paper, the main goal of this research is to help Mazahua artisans in the State of Mexico develop a fair-trade fashion product brand venture called Vitu™ that will serve as a social enterprise to help alleviate Mazahua poverty as well as to positively impact Mazahua society in pursuit of the revitalization of Mazahua language and culture. The completion of this future research will greatly aid in that goal. Likewise, this continuing research will add to the body of knowledge essential to Indigenize sustainable entrepreneurship so that it may be more easily applied into how Indigenous peoples develop their communities through their craft-based entrepreneurial activities.

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APPENDIX A

GLOSSARY

Adaptive Agency: Pelling (2013) defines adaptive agency as the “critical” component in the decision-making process within organizations in that it is through learning that agency becomes reflexive leading to critical thinking and reasoning. Here “reflexivity implies strategic decision-making (of an entrepreneurial individual)” (pg. 65).

Buen Vivir: Defined as a concept that “includes the classical ideas of quality of life, but with the specific idea that well-being is only possible within a community” (Gudynas, 2011, pg. 441). Buen Vivir is also defined as a primary element in artisan creativity (Albarrán González, 2020) as well as a social enterprise (Giovannini, 2012).

Communities of Practice: Wenger (2000) defines communities of practice as “the basic building blocks of a social learning system” (pg. 229). The boundaries between communities of practice act as the hot spots for skills, learning, and innovation (Wenger, 2000).

Ethno-aesthetics: Van Damme (1991) defines ethno-aesthetics as “the sociology of art in preliterate civilizations” and goes on to state that the term “ethno-aesthetics” has become more narrowly defined as 'aesthetics' in anthropology and the general ethno-scientific approach to the study of art (pg. 173).

Entitlements: Sen (1983) poses that the deficiency of traditional development economics lies in the fact that it has placed emphasis on “national product, aggregate income and total supply of goods” rather than on “entitlements” which he defines as the “set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces” (pg. 754).

Financial capital: Defined as household yearly income, cash savings, livestock (sheep, cows, chickens etc.).

Human capital: Defined as the access to skilled family or community members in crafting (sewing, embroidery, knitting, weaving, etc.).

Indigenous Entrepreneurship: Anderson et al (2006) define Indigenous Entrepreneurship as "the enterprise related activities of Indigenous people in pursuit of their social/cultural determination and economic goals" (pg. 2). Hindle et al (2007) define Indigenous Entrepreneurship as an "activity focused on new venture creation or the pursuit of economic opportunity or both, for the purpose of diminishing Indigenous disadvantage through culturally viable wealth creation" (pg. 7).

Natural capital: Defined as access to forests, streams, pastures, and local plants (for crafting).

Physical capital: Defined as access to sewing machines, cars, trucks, surplus of crafting materials (yarn, fabrics, threads, etc.).

Place-Thought: Watts states that "Place-Thought is based upon the premise that land is alive and thinking and that humans and non-humans derive agency through the extensions of these thoughts" (pg. 21).

Social/Cultural Capital: Defined as the social assets (like networks) embedded in the specific context of Indigenous artisan culture and traditions for this research.

Social Entrepreneurship: Defined by J. Gregory Dees in his article *The Meaning of "Social Entrepreneurship",* is a term that "…combines the passion of a social mission with an image of

business-like discipline, innovation, and determination commonly associated with, for instance, the high-tech pioneers of Silicon Valley" (Dees, 1998, pg. 1).

Spiritual capital: Lillard and Ogaki (2005) define spiritual capital as "a set of intangible objects in the form of rules for interacting with people, nature, and spiritual beings (God, gods, buddhas, angels, evil spirits as believed to exist by individuals and in different religions) and believed knowledge about tangible and spiritual worlds" (pg. 1).

Sustainable Entrepreneurship: Tilley and Young (2006) define sustainable entrepreneurship highlighting the multitude of variables in its interrelationship with social entrepreneurship, economic entrepreneurship, and environmental entrepreneurship and contend that the route to sustainable development is not based on any one social, economic, or environmental perspective or foci but rather on their sum.

Sustainable Livelihood: Defined as the access to the six forms of capital (Human, Social/Cultural, Spiritual, Natural, Financial, and Physical).

Transformative Agency: Westley et al. (2013) define transformative agency as the role of individual agency in achieving transformation in complex adaptive systems involving the activities of institutional entrepreneurship that they describe as "the efforts of individuals who seek to change the institutions governing a particular domain in the interests of realizing particular goals of their own" (pg. 2).

APPENDIX B

SEMI-STRUCTURED INTERVIEW SCRIPT ENGLISH

Process of Crafting Interview Guide
Semi-Structured Questions

Research on the Mazahua process of crafting (material harvesting, materials prep, production, selling, etc.) will rely on a combination of survey and participant observations. A notation on whether the participant is male or female will be taken at the beginning of the interview.

Semi-Structured Interview Script

Hello, my name is John Takamura and I'm interested in understanding the process of Mazahua crafting and how you feel about the various activities that are involved. You are free to end the interview at any time and if you do not want to answer a question you do not have to and there is no penalty for this.

1. How old are you? How long have you been involved in the Mazahua process of crafting?
2. Tell me about the process of making this craft? *(What are the specific processes of Mazahua crafting? List as many as you know of)*

3. What processes do you participate in? Why? *(why don't you do other processes?)*
4. What is specifically involved in these processes? *(explain the various crafting activities involved)*
5. Do you do crafting activities alone or with others? Why? *(how many others)* Where? *(public place or private)*

6. How many hours a day/night per week do you currently spend on these crafting activities?
7. What are your favorite processes? Why?
8. What are your least liked processes? Why?
9. What are the most important processes? Why? *(list each then discuss individually)*
10. Why is process *X1* important to you?
11. Regarding process *X1*, what are your greatest challenges? Why?
12. Regarding process *X1*, what are some ways to overcome these challenges?
13. Regarding process *X1*, what are the most enjoyable aspects? Why?
14. Regarding process *X1*, what are the least enjoyable aspects? Why?
15. Regarding process *X1*, what would make if more enjoyable? Why?
16. Regarding process *X1*, do you feel it contributes to your sense of wellbeing? Why?
17. Regarding process *X1*, do you feel any sense of satisfaction when doing or completing it? Why?
18. Regarding process *X1*, do you feel it contributes to your Mazahua culture? Why?
19. Regarding process *X1*, does it have any spiritual meaning to you? If so, why? If not, why?
20. Regarding process *X1*, do you feel it affects your cultural identity? If so, why? If not, why?

Additional questions as needed after the general Process of Crafting is understood:
The answer to these questions will help inform the development of the 6 Capital Asset Mapping Verbal Survey and will help determine its specific capital asset questions.

1. How important are the local grasslands, streams and other natural resources to the process of crafting?

2. How important are sewing machines, cars/trucks, sheep and other physical resources to the process of crafting?

3. How important are other people (children, family members) and other human resources to the process of crafting?

4. How important are education (high school, etc.) and skills (driving, sewing machine, computer, business/finance, fashion, etc.) and other human resources to the process of crafting?

5. How many crafters speak Mazahua, speak Spanish, and speak both and how important are the languages to the process of crafting (i.e. in the marketplace, in sewing circles, etc.)?

6. How important are the sewing circles to the process of crafting and how are they created/organized? (why do women join these sewing circles?)

7. What kinds of things go on in a sewing circle (conversations, gossip, singing, stories)?

8. How important is knowledge of Mazahua traditions (stories, pattern meanings, etc.) in the process of crafting?

9. How important are business networks and connections in the process of crafting?

10. How important are cash savings in the process of crafting?

11. How important are other financial resources (livestock) and financial knowledge in the process of crafting?

12. How important are community spiritual leaders in the process of crafting?

13. How important are elders in the process of crafting?

14. What makes the process of crafting Mazahua? How is Mazahua crafting different from other crafting?

15. What are Mazahua the most spiritually significant Mazahua crafting pieces (i.e. underskirts, belts, dresses, etc.)? Why and in what ways are these spiritually significant?

APPENDIX C

SEMI-STRUCTURED INTERVIEW SCRIPT SPANISH

Proceso de elaboración de la guía de entrevistas
Preguntas semiestructuradas

La investigación sobre el proceso de elaboración de Mazahua (recolección de materiales, preparación de materiales, producción, venta, etc.) se basará en una combinación de encuestas y observaciones de los participantes. Al comienzo de la entrevista se tomará una anotación sobre si el participante es hombre o mujer.

Guión de entrevista semiestructurado
Hola, mi nombre es John Takamura y estoy interesado en comprender el proceso de elaboración de Mazahua y cómo te sientes acerca de las diversas actividades involucradas. Usted es libre de finalizar la entrevista en cualquier momento y si no desea responder una pregunta no tiene que hacerlo y no hay ninguna penalización por ello.

1. ¿Qué edad tienes? ¿Cuánto tiempo ha estado involucrado en el proceso de elaboración de Mazahua?

2. ¿Cuéntame sobre el proceso de hacer este arte? (¿Cuáles son los procesos específicos de la elaboración de Mazahua? Haga una lista de todos los que conozca)

3. ¿En qué procesos participas? ¿Por qué? (¿Por qué no haces otros procesos?)

4. ¿Qué está involucrado específicamente en estos procesos? (explique las diversas actividades de elaboración involucradas)

5. ¿Realiza actividades de artesanía solo o con otros? ¿Por qué? (cuantos mas) donde? (lugar público o privado)

6. ¿Cuántas horas al día / noche a la semana dedica actualmente a estas actividades de elaboración?

7. ¿Cuáles son tus procesos favoritos? ¿Por qué?

8. ¿Cuáles son tus procesos que menos te han gustado? ¿Por qué?

9. ¿Cuáles son los procesos más importantes? ¿Por qué? (enumere cada uno luego discútalos individualmente)

10. ¿Por qué es importante el proceso X1 para ti?

11. Respecto al proceso X1, ¿cuáles son tus mayores desafíos? ¿Por qué?

12. Con respecto al proceso X1, ¿cuáles son algunas formas de superar estos desafíos?

13. Respecto al proceso X1, ¿cuáles son los aspectos más agradables? ¿Por qué?

14. Respecto al proceso X1, ¿cuáles son los aspectos menos agradables? ¿Por qué?

15. Respecto al proceso X1, ¿qué haría si fuera más agradable? ¿Por qué?

16. Con respecto al proceso X1, ¿sientes que contribuye a tu sensación de bienestar? ¿Por qué?

17. Con respecto al proceso X1, ¿siente alguna sensación de satisfacción al realizarlo o completarlo? ¿Por qué?

18. Con respecto al proceso X1, ¿sientes que contribuye a tu cultura Mazahua? ¿Por qué?

19. Con respecto al proceso X1, ¿tiene algún significado espiritual para ti? Si es así, ¿por qué? Si no, ¿por qué?

20. Con respecto al proceso X1, ¿sientes que afecta tu identidad cultural? Si es así, ¿por qué? Si no, ¿por qué?

Preguntas adicionales según sea necesario después de que se comprenda el Proceso general de elaboración:

La respuesta a estas preguntas ayudará a informar el desarrollo de la Encuesta Verbal de Mapeo de Activos de Capital y ayudará a determinar sus preguntas específicas sobre activos de capital.

1. ¿Qué tan importantes son los pastizales, arroyos y otros recursos naturales locales para el proceso de elaboración de artesanías?

2. ¿Qué tan importantes son las máquinas de coser, los automóviles / camiones, las ovejas y otros recursos físicos para el proceso de elaboración de artesanías?

3. ¿Qué importancia tienen otras personas (niños, familiares) y otros recursos humanos en el proceso de elaboración de artesanías?

4. ¿Qué importancia tienen la educación (escuela secundaria, etc.) y las habilidades (manejo, máquinas de coser, computadoras, negocios / finanzas, moda, etc.) y otros recursos humanos para el proceso de elaboración de artesanías?

5. ¿Cuántos artesanos hablan mazahua, hablan español, hablan ambos y cuán importantes son los idiomas para el proceso de elaboración de artesanías (es decir, en el mercado, en los círculos de costura, etc.)?

6. ¿Qué importancia tienen los círculos de costura en el proceso de elaboración y cómo se crean / organizan? (¿Por qué las mujeres se unen a estos círculos de costura?)

7. ¿Qué tipo de cosas suceden en un círculo de costura (conversaciones, chismes, canto, historias)?

8. ¿Qué tan importante es el conocimiento de las tradiciones de Mazahua (historias, significados de patrones, etc.) en el proceso de elaboración?

9. ¿Qué importancia tienen las redes y conexiones comerciales en el proceso de elaboración de artesanías?

10. ¿Qué importancia tienen los ahorros en efectivo en el proceso de elaboración de artesanías?

11. ¿Qué importancia tienen otros recursos financieros (ganadería) y conocimientos financieros en el proceso de elaboración de artesanías?

12. ¿Qué tan importantes son los líderes espirituales de la comunidad en el proceso de elaboración de artesanías?

13. ¿Qué importancia tienen los ancianos en el proceso de elaboración de artesanías?

14. ¿Qué hace el proceso de elaboración de Mazahua? ¿En qué se diferencian los Mazahua a la hora de hacer manualidades?

15. ¿Cuáles son las piezas de creación de Mazahua más significativas espiritualmente (es decir, faldas, cinturones, vestidos, etc.)? ¿Por qué y de qué manera son estos espiritualmente significativos?

APPENDIX D

VERBAL SURVEY SCRIPT ENGLISH

6 Capital Assets
Asset Mapping for Crafting Survey Questionnaire

Natural Assets (Natural Capital)

1. Is your farm land needed for your crafting? If yes, do you think you need more land for crafting? Why or why not?

2. Do you use the stream in any way for your crafting (dying, washing materials, etc.)? If yes, how would you rate your level of access to the stream on a scale from 1 to 10 (one being the lowest access and ten being the highest access)?

3. Do you use firewood for crafting? If yes, how would you rate your access to firewood on a scale from 1 to 10 (one being the lowest access and ten being the highest access)?

4. Do you use the grasslands in any way for your crafting (plants for dying, grazing sheep, etc.)? If yes, how would you rate your level of access to the grasslands on a scale from 1 to 10 (one being the lowest access and ten being the highest access)?

5. How would you rate your overall access to get natural materials and resources from your environment for crafting on a scale from 1 to 10 (one being the lowest access and ten being the highest access)?

Physical Assets (Physical Capital)

1. How important are sewing machines in your crafting? Do you have a sewing machine and if so how many? If not, would you want one? Why or why not?

2. How important are sheep in your crafting? Do you own sheep and if so how many? If not, would you want to? Why or why not?

3. How important is yarn in your crafting? Do you have enough yarn and if so how much yarn? If not, would you want more? Why or why not?

4. How important are dyes for yarn in your crafting? Do you dye your yarn and if not, would you want to? Why or why not?

5. Do you craft at night? If so, do you craft by electric lamp of candles? If not, why don't you craft at night?

6. Do you craft on communal land? if so, where? If not, why?
7. How much space do you need in your home for crafting (in square meters or feet)?
8. When going shopping for crafting materials, how easy is it for you to get access to a car of truck on a scale from 1 to 10 (one being the lowest access and ten being the highest access)?

9. How important are burros in your crafting? If important then how many do you own?
10. How important is firewood in your crafting? If important then how much do you own?
11. How would you rate your current amount of materials you need for your artisan work (yarn, sewing machines, dye, transportation, etc.) on a scale from 1 to 10 (one being the lowest amount and ten being the highest amount)?

Human Assets (Human Capital)

1. How many adults (above 18) in your family help you with crafting? *(babysitting, craft work, etc.)*

2. How many children (below 18) in your family help you with crafting? *(babysitting, craft work, etc.)*

3. How many women can operate sewing machines in your family?
4. How many women have actually sewn a dress or blouse in your family?
5. How many family members know how to card wool?
6. How many family members know how to dye wool?
7. How many women know how to create traditional stitching and embroidery patterns in your family?

8. How would you rate your current amount of skilled family members who can help you for your artisan work on a scale from 1 to 10 (one being the lowest amount and ten being the highest amount)?

Social/Cultural Assets (Social/Cultural Capital)

1. How many men and women speak Mazahua fluently in your family?
2. How many men and women in your family can read and write in Mazahua?
3. How many men and women know the traditional significance or stories of the Mazahua tribal patterns in your family?

4. How many men and women have crafting business connections and networks in your family?

5. How many women have crafting entrepreneurial training/knowledge in your family?
6. How many women know how to do crafting (sewing, stitching and embroidery) in your family?

7. How many women participate in community crafting (sewing & stitching) gatherings in your family?

8. How many women in your family know how to stitch or embroider traditional Mazahua patterns?

9. How many women in your family know how to stitch or embroider traditional Mazahua underskirts and or sashes?

10. How would you rate your current level of social/cultural activities that support your artisan crafting (ability to speak Mazahua with others, ability to meet up socially with others, knowledge of business, knowledge of Mazahua culture and traditions, business networks, feeling of trust and safety) on a scale from 1 to 10 (one being the lowest amount and ten being the highest amount)?

Financial Assets (Financial Capital)

1. What is your yearly income? How much of your income comes from crafting?
2. How much cash do you set aside per year for crafting?
3. How would you rate your current financial situation (your income, cash savings, and livestock amount) on a scale from 1 to 10 (one being the lowest amount and ten being the highest amount)?

Spiritual Assets (Spiritual Capital)

1. What does the Mazahua Woven underskirts mean to you and what is its significance?
2. Do you feel the Mazahua Woven underskirt holds any spiritual significance or meaning? If so, in what ways? If not, why not?

3. How many Mazahua Woven underskirts do you own? Were they given to you from your relatives? If so, by who and do they have any meaning to you?

4. What does the Mazahua Woven sash mean to you and what is its significance?

5. Do you feel the Mazahua Woven underskirt holds any spiritual significance or meaning? If so, in what ways? If not, why not?

6. How many Mazahua Woven sashes do you own? Were they given to you from your relatives? If so, by who and do they have any meaning to you?

7. How would you rate your current spiritual state (your feeling of connection to your culture and your ancestors, your feeling of connection to nature, your identity as a Mazahua, and spiritual satisfaction) on a scale from 1 to 10 (one being the lowest and ten being the highest)?

APPENDIX E

VERBAL SURVEY SCRIPT SPANISH

6 Bienes de capital
Mapeo de Activos para Elaborar Cuestionario de Encuesta

Activos Naturales (Capital Natural)
1. ¿Se necesita su tierra de cultivo para la elaboración de artesanías? Si es así, ¿crees que necesitas tener más tierra para la elaboración de artesanías? ¿Por qué o por qué no?

2. ¿Utiliza el arroyo de alguna manera para la elaboración de artesanías (teñido, lavado de materiales, etc.)? En caso afirmativo, ¿cómo calificaría su nivel de acceso al flujo en una escala del 1 al 10 (uno es el acceso más bajo y diez el acceso más alto)?

3. ¿Usas leña para la elaboración de artesanías? En caso afirmativo, ¿cómo calificaría su acceso a la leña en una escala del 1 al 10 (uno es el acceso más difícil y diez el acceso más fácil)?

4. ¿Utiliza los pastizales de alguna manera para la elaboración de artesanías (plantas para teñir, pastoreo de ovejas, etc.)? En caso afirmativo, ¿cómo calificaría su nivel de acceso a los pastizales en una escala del 1 al 10 (uno es el acceso más difícil y diez el acceso más fácil)?

5. ¿Cómo calificaría su acceso general para obtener materiales naturales y recursos de su entorno para elaborar artesanías en una escala del 1 al 10 (uno es el acceso más difícil y diez el acceso más fácil)?

Activos físicos (Capital físico)
1. ¿Qué importancia tienen las máquinas de coser en su elaboración de artesanías? ¿Tienes una máquina de coser y si es así cuántas? Si no, ¿te gustaría tener una? ¿Por qué o por qué no?

2. ¿Qué importancia tienen las ovejas en tu elaboración de artesanías? ¿Tienes ovejas y si es así cuántas? Si no, ¿te gustaría tener? ¿Por qué o por qué no?

3. ¿Qué importancia tiene el hilo en tu elaboración? ¿Tienes suficiente hilo y si es así cuánto hilo? Si no, ¿te gustaría tener más? ¿Por qué o por qué no?

4. ¿Qué tan importantes son los tintes para el hilo en su elaboración de artesanías? ¿Tiñes tu hilo y si no, te gustaría hacerlo? ¿Por qué o por qué no?

5. ¿Elaboras tus artesanías en la noche? Si es así, ¿lo haces con lámpara eléctrica o velas? Si no, ¿por qué no trabajas de noche?

6. ¿Elaboras artesanías en tierras comunales? ¿si es así, donde? Si no, ¿por qué?

7. ¿Cuánto espacio necesita en su hogar para hacer manualidades (en metros cuadrados o pies)?

8. Cuando va a comprar materiales de artesanía, ¿qué tan fácil es para usted tener acceso a un automóvil o camión en una escala del 1 al 10 (uno es el acceso más difícil y diez el acceso más fácil)?

9. ¿Qué importancia tienen los burros en tu elaboración de artesanías? Si es importante, entonces, ¿cuántos tienes?

10. ¿Qué importancia tiene la leña en su elaboración? Si es importante entonces, ¿cuánto tienes?

11. ¿Cómo calificaría la cantidad actual de materiales que necesita para su trabajo artesanal (hilo, máquinas de coser, tinte, transporte, etc.) en una escala del 1 al 10 (una es la cantidad más baja y diez la cantidad más alta)?

Activos Humanos (Capital Humano)

1. ¿Cuántos adultos (mayores de 18 años) en su familia lo ayudan con la elaboración de artesanías? (cuidado de niños, trabajos de artesanía, etc.)

2. ¿Cuántos niños (menores de 18) de su familia lo ayudan con la elaboración de artesanías? (cuidado de niños, trabajos de artesanía, etc.)

3. ¿Cuántas mujeres pueden operar máquinas de coser en su familia?

4. ¿Cuántas mujeres han cosido un vestido o una blusa en tu familia?

5. ¿Cuántos miembros de la familia saben cómo cardar lana?

6. ¿Cuántos miembros de la familia saben cómo teñir la lana?

7. ¿Cuántas mujeres saben cómo crear patrones de costura y bordado tradicionales en su familia?

8. ¿Cómo calificaría la cantidad actual de familiares capacitados que pueden ayudarlo en su trabajo artesanal en una escala del 1 al 10 (una es la cantidad más baja y diez la cantidad más alta)?

Bienes Sociales / Culturales (Capital Social / Cultural)

1. ¿Cuántos hombres y mujeres hablan Mazahua con fluidez en su familia?

2. ¿Cuántos hombres y mujeres de tu familia pueden leer y escribir en Mazahua?

3. ¿Cuántos hombres y mujeres conocen el significado tradicional o las historias de los patrones tribales de Mazahua en su familia?

4. ¿Cuántos hombres y mujeres tienen conexiones y redes de negocios en su familia?

5. ¿Cuántas mujeres tienen formación / conocimiento empresarial en tu familia?

6. ¿Cuántas mujeres saben cómo hacer manualidades (costura, costura y bordado) en su familia?

7. ¿Cuántas mujeres participan en reuniones de artesanía comunitaria (costura y bordado) en su familia?

8. ¿Cuántas mujeres en su familia saben cómo coser o bordar los patrones tradicionales de Mazahua?

9. ¿Cuántas mujeres de su familia saben coser o bordar las faldas y / o fajas tradicionales de Mazahua?

10. ¿Cómo calificaría su nivel actual de actividades sociales / culturales que apoyan su elaboración artesanal (capacidad de hablar Mazahua con otros, capacidad de reunirse socialmente con otros, conocimiento de negocios, conocimiento de la cultura y las tradiciones de Mazahua, redes empresariales, sentimiento de confianza y seguridad) en una escala del 1 al 10 (uno es la cantidad más baja y diez la cantidad más alta)?

Activos Financieros (Capital Financiero)
1. ¿Cuál es su ingreso anual? ¿Cuánto de su ingreso proviene de la elaboración?

2. ¿Cuánto dinero en efectivo destina al año para la elaboración?

3. ¿Cómo calificaría su situación financiera actual (sus ingresos, ahorros en efectivo y cantidad de ganado) en una escala del 1 al 10 (una es la cantidad más baja y diez la cantidad más alta)?

Activos Espirituales (Capital Espiritual)
1. ¿Qué significa para usted la ropa interior Mazahua Woven y cuál es su significado?

2. ¿Sientes que la falda tejida Mazahua tiene algún significado o significado espiritual? Si es así, ¿de qué manera? ¿Si no, porque no?

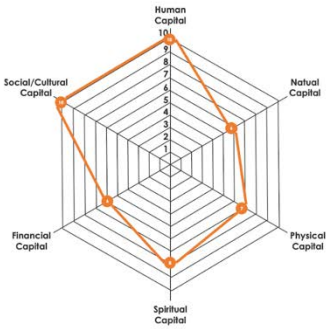
3. ¿Cuántas camisetas tejidas de Mazahua tienes? ¿Se las dieron tus parientes? Si es así, ¿quién se las dio y tienen algún significado para ti?

4. ¿Qué significa para ti la banda/faja tejida de Mazahua y cuál es su significado?

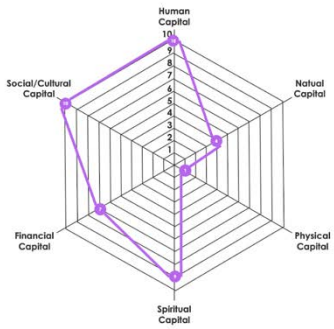
5. ¿Cómo calificaría su estado espiritual actual (su sentimiento de conexión con su cultura y sus antepasados, su sentimiento de conexión con la naturaleza, su identidad como Mazahua y su satisfacción espiritual) en una escala del 1 al 10 (uno de ellos es el más bajo y diez siendo el más alto)?

APPENDIX F

SAMPLE SPIDER DIAGRAM ANALYSIS



Artisan Interview #1



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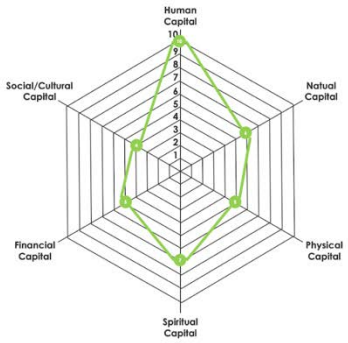
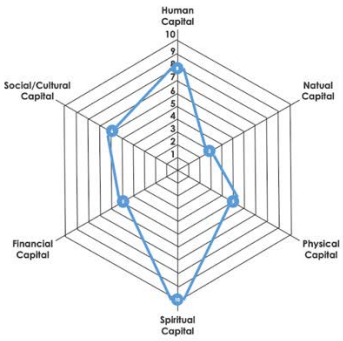


Artisan Interview #37



Artisan Interview #27

APPENDIX G

SAMPLE AFFINITY MAPPING

Craft as Therapy

1			satisfaction					concentrate			
2	therapy	tradition									
3		tradition			happy						
4			accomplishment		happy						
5			accomplishment		happy						
6	therapy				happy						
7	therapy		satisfaction							appreciate skills	
8		tradition		pride							
9		tradition									
10			satisfaction			mother					
11	clear mind										motivation
12			satisfaction	pride							motivation
13	clear mind		satisfaction					concentrate		appreciate skills	
14	forget problems						relax	focus	passing time		motivation
15			satisfaction						passing time		
16			satisfaction		joy						motivation
17			satisfaction		happy				productive	appreciate skills	
18	forget problems						relax				motivation
19	get away		accomplishment		joy						
20	helps me								passing time		motivation

21	forget problems		accomplishment		happy						
22					happy				passing time		motivation
23							relax		passing time		
24			satisfaction				ease				motivation
25	forget problems		satisfaction						passing time		motivation
26			satisfaction								motivation
27	forget		satisfaction				relax		productive		motivation
28			satisfaction		happy						motivation
29	forget		satisfaction				relax	focus			
30					happy	mother					motivation
31	therapy		satisfaction				peace			appreciate skills	
32	lower stress		satisfaction	pride			relax				motivation
33	forget problems		satisfaction				relax				motivation
34					happy						motivation
35	forget problems		satisfaction					concentrate			
36	lower stress						relax	focus			
37	forget problems		satisfaction					focus			
38					happy				passing time		
39			satisfaction				rest		distraction		motivation
40	therapy		satisfaction								
41					happy				distraction		
42	lower stress								productive		motivation

43					happy	mother			passing time		
44	clear mind			pride				focus			motivation
45	forget problems				happy			focus			
46	clear mind	tradition			happy						
47		tradition	satisfaction								
48		tradition									motivation
49	forget problems				happy			focus	distraction		
50	clear mind		satisfaction		happy			focus			motivation
Interviewee	26/50	7:50	27/50	4:50	19:50	3:50	11:50	11:50	14:50	4:50	21/50
	52%	14%	54%	8%	38%	6%	22%	22%	28%	8%	42%
	Therapy	**Tradition**	**Satisfaction**	**Pride**	**Happiness**	**Mother**	**Relax**	**Concentration**	**Distraction**	**Skill Appreciation**	**Motivation**

APPENDIX H

SAMPLE TRANSLATED INTERVIEW TRANSCRIPT

Process of Crafting Interview #13
Artisan name: Dalila

Semi-Structured Interview Script
Hello, my name is John Takamura and I'm interested in understanding the process of Mazahua crafting and how you feel about the various activities that are involved. You are free to end the interview at any time and if you do not want to answer a question you do not have to and there is no penalty for this.

1. How old are you? How long have you been involved in the Mazahua process of crafting?
40. I started at 12.

2. Tell me about the process of making this craft? *(What are the specific processes of Mazahua crafting? List as many as you know of)*
I start from anywhere I like since I memorized how to make a skirt. It all depends on the practice of the individual artisan. It's easier for me because I know how to do the processes. There are many different designs. Sometimes I look at the work of others or sometimes I use my creativity. It is easier because I know how. I choose colors I like. I base the colors of the border on the colors of the dress to match. I only know how to do the border. I spend 150-200 pesos to get the rest sewn by someone else. I don't know how to make a belt. When my sisters and I saw my mother do it so we tried but decided we didn't want to it. Now, I want to learn but my mother's vision is not so good. I know how to dye natural wool because we used to find the plants but now it is difficult to find natural dyes because these days it is dangerous in the town to go out alone so we stopped doing it.

3. What processes do you participate in? Why? *(why don't you do other processes?)*
Making underskirts, bags, small bracelets.

4. What is specifically involved in these processes? *(explain the various crafting activities involved)*
–

5. Do you do crafting activities alone or with others? Why? *(how many others)* Where? *(public place or private)*
I work with others. Usually family members. Right now there are 8 people working but I normally work alone. I don't have a specific place at home, either outside or inside.

6. How many hours a day/night per week do you currently spend on these crafting activities?
3-4 hours a day. During my spare time. It all depends, it could be morning, afternoon, and night. It's harder at night because of the lack of light and you are tired.

7. What are your favorite processes? Why?
There's no favorite part of making a skirt. I like all the processes in all the crafts I do.

8. What are your least liked processes? Why?
There are difficult parts in these crafts. It is the time and difficulty of particular technique. The skirt you have to take care of the front as well as the back so it's double the work.

9. What are the most important processes? Why? *(list each then discuss individually)*

The colors are most important because it must match the outer dress. Then the figures, which make the skirt different.

10. Why is process *X1* important to you?
–

11. Regarding process *X1*, what are your greatest challenges? Why?
–

12. Regarding process *X1*, what are some ways to overcome these challenges?

–

13. Regarding process *X1*, what are the most enjoyable aspects? Why? *(what pleasure or joy do you get from this process)*
I love to do my work. I enjoy all the parts of the processes from choosing the materials, thinking of the colors and designs. I work with fine stitches. It's more difficult but I love it.

14. Regarding process *X1*, what are the least enjoyable aspects? Why?
I enjoy all.

15. Regarding process *X1*, what would make if more enjoyable? Why?
–

16. Regarding process *X1*, do you feel it contributes to your sense of wellbeing? Why? *(after the making of money what do you feel)*
I don't sell the dresses I make. I only use it for myself or my family. I use this as a hobby not to think of other things. I spend time to do my crafts. I have to count and concentrate so I don't think of other things.

17. Regarding process *X1*, do you feel any sense of satisfaction when doing or completing it? Why?
I feel well when I see the finished work and see what I'm capable of doing with my work.

18. Regarding process *X1*, do you feel it contributes to your Mazahua culture? Why?
Yes, because it's our tradition and our roots. I don't want our traditions to end.

19. Regarding process *X1*, does it have any spiritual meaning to you? If so, why? If not, why?
The figures like the star which is in the sky. For example, the animals, are the ones that we have been taking care of here. I don't know if there is any connection with my ancestors.

20. Regarding process *X1*, do you feel it affects your cultural identity? If so, why? If not, why?
We are maintaining our traditions so there is no negative affect and we keep them going. The younger generations don't like to work on our crafts. The belt is going to be lost because no one knows how to make them. When I wear my dress at special events or go to sell my crafts at the marketplace to identify myself from the others.

Additional questions as needed after the general Process of Crafting is understood:
The answer to these questions will help inform the development of the 6 Capital Asset Mapping Verbal Survey and will help determine its specific capital asset questions.

1. How important are the local grasslands, streams and other natural resources to the process of crafting?
Not

2. How important are sewing machines, cars/trucks, sheep and other physical resources to the process of crafting?
I know how to use a sewing machine but I don't sew the skirt because I don't like to because I don't have the time with all my chores.

3. How important are other people (children, family members) and other human resources to the process of crafting?
–

4. How important are education (high school, etc.) and skills (driving, sewing machine, computer, business/finance, fashion, etc.) and other human resources to the process of crafting?
–

5. How many crafters speak Mazahua, speak Spanish, and speak both and how important are the languages to the process of crafting (i.e. in the marketplace, in sewing circles, etc.)?
–

6. How important are the sewing circles to the process of crafting and how are they created/organized? (why do women join these sewing circles?)
–

7. What kinds of things go on in a sewing circle (conversations, gossip, singing, stories)?
–

8. How important is knowledge of Mazahua traditions (stories, pattern meanings, etc.) in the process of crafting?
–

9. How important are business networks and connections in the process of crafting?
It's important but there are risks because I might not be able to sell all the materials I have and I might not get paid. I have to trust in others to sell my crafts. I've had experience where someone took my crafts and never paid me. So, we don't give the work to others to sell. I go out myself to sell my crafts. I'm not selling often because of the time I have to spend on other things.

10. How important are cash savings in the process of crafting?
In Mexico we call it turn around money. I use sales to buy materials for the next job. I usually invest in the house or other things.

11. How important are other financial resources (livestock) and financial knowledge in the process of crafting?
–

12. How important are community spiritual leaders in the process of crafting?
No, I don't speak to spiritual leaders.

13. How important are elders in the process of crafting?
I don't speak to other elders. My mother taught me. It all depends on what I am working on and want to make I will ask others but I basically know about my craft techniques. I usually speak to my mother, sisters, and family members.

14. What makes the process of crafting Mazahua? How is Mazahua crafting different from other crafting?
–-

15. What are Mazahua the most spiritually significant Mazahua crafting pieces (i.e. underskirts, belts, dresses, etc.)? Why and in what ways are these spiritually significant?
The dress as a total is most significant but for me the 'barbero' is most significant because you see it first since it's outside. It's different between communities like Loma de Juarez where it is smaller. We don't use the sash anymore. Only 3-4 people can make a sash in this community.

BIOGRAPHICAL SKETCH

Bringing over 17 years of industrial design and branding practice experience, John Takamura has been instrumental in implementing brand and product development programs in both Asia and North America. Early in his career, John served as the Design Director for the Industrial Design Division of a Japanese firm called ODS under the guidance of international designers Luigi Colani (Renowned Transportation Designer, DE), Hans Muth (Former BMW Chief of Styling, DE), and Barry Weaver (Co-founder Roberts Weaver Group, UK). John later joined Sharp Corporation's elite advanced design team in Tokyo. In 1997 John joined Fitch Inc. to establish and manage the Fitch design office in Japan. Serving as Vice President of the Japan office, John was involved as the Design Director, Project Manager, and Account Manager for numerous Japanese companies in the automotive, electronics, consumer goods, and service industries, and also served as manager of the Fitch Japan-based innovation lab called the MadLab (Marketing and Design Laboratory). One of John's most notable programs was the revitalization of the Nissan Motor Company brand. John served as global manager for the international (U.S., Japan, UK) trans-disciplinary design and research team responsible for the creation of the new Nissan brand mark and corporate logo design and branding guidelines in 2001. John is currently an Associate Professor of Industrial Design in The Design School at the Herberger Institute for Design and the Arts at Arizona State University. Professor Takamura held the post of Assistant Director of Research for The Design School at the Herberger Institute for Design and the Arts from 2017-2020 and is a Senior Sustainability Scientist for ASU's Global Institute for Sustainability focused on Social Sustainability.