

DISSERTATION

CONSUMER PRODUCT PREFERENCES OF CULTURAL TEXTILE PRODUCTS:
CO-DESIGN WITH TEXTILE ARTISANS FROM GUATEMALA AND PERU

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In partial fulfillment of the requirements
For the Degree of Doctor of Philosophy
Colorado State University
Fort Collins, Colorado
Spring 2016

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ABSTRACT

CONSUMER PRODUCT PREFERENCES OF CULTURAL TEXTILE PRODUCTS: CO-DESIGN WITH TEXTILE ARTISANS FROM GUATEMALA AND PERU

This study involved practice-based research with cultural textile weaving groups in Guatemala and Peru. Artisan textiles were co-designed with contemporary color palettes and layouts for backstrap weaving and patterns for hand embroidery. Sustainability-oriented innovation (SOI) provided a framework to explore implementation of co-design in the production of handcrafted cultural textile products. Fashion trends including color forecasts and product preferences may allow for incremental innovation in the product development process that will result in increased sales and income for artisans (Klewitz & Hansen, 2014). Innovation for sustainability allows relative improvements in process, product, and organizational innovations by creating more sustainable production methods. SOI has been found to be successful in the marketplace in niches or even mass markets (Schaltegger & Wagner, 2011).

Co-design was integrated into the textile design process through sharing pictures and technical diagrams working with cultural weaving organizations. Co-design is a process of collaborative design thinking involving joint inquiry and imagination in which diverse people explore and define a problem and collaboratively develop and evaluate solutions (Steen, 2013). Co-designed textiles were constructed into modern silhouettes for apparel, accessories, and home décor products. Co-design presents an opportunity to work with cultural textile artisans to create textiles and products with the intent to meet consumer preferences and expand product offerings and sales in the global marketplace.

Fifty-one artisan products integrating co-designed textiles and new product designs were displayed in a university gallery exhibition. The study examined consumer preferences of handcrafted cultural textile products in six product areas of apparel, accessories, home décor pillows, home décor framed textiles, tabletop, and furniture. Paper and pencil surveys were collected from voluntary visitors in the exhibition. Participants of the survey were asked to choose one product in the exhibition they would most like to own, record the number on the product, and “describe what you find most interesting and attractive about the product”. A total of 261 responses were collected over sixty days of visitors to the exhibition. Participants’ preferences for products selected as ‘most like to own’ were 69.6% apparel, 12.2% furniture, 6.4% home décor pillows, 5.7% fashion accessories, 3.1% home framed textiles, and 1.5% tabletop home décor.

Qualitative analysis of written descriptions of preferred products was analyzed. Four themes emerged for the exhibition visitors’ user experience of the artisan textiles products: ‘Modern mix with traditional’; ‘I love the detail’; ‘Pop of color’; and ‘Versatility’. Qualitative analysis of the researcher’s discussion of products along with a student designer’s blog posts while working with weavers in Guatemala found four themes emerged for designers’ experience: ‘Textiles tell a story’; ‘Women work hard’; ‘Design collaboration’; and ‘Sustainability’. Consumers described an emotional and personal experience while designers described a visual experience related to textile process and materials. Of products selected, 46% were co-designed cultural artisan textiles incorporated into contemporary products, 31% were authentic cultural vintage textiles co-designed in contemporary products, and 23% were authentic cultural textiles products created by the artisans.

Participants in the study completed an 8-item scale to determine their Desire for Unique Consumer Products (DUCP). Scores were related to product preferences for uniqueness, color, function, and quality of each Guatemala and Peru cultural textile product. Guatemalan product preferences were apparel and furniture, Peruvian product preferences were apparel. Preferences for most unique products positively correlated with product preferences for color, function, and quality.

The majority of participants ($n = 251$) were Millennials which gives a new perspective to prior research on cultural textile products. Twenty-two statements of values related to cultural creativity were measured and found characteristics of millennials had high scores for adventurous travel, internet use and shopping, and wearing fashionable clothing and low scores for book buying, holistic health practices, and wearing ethnic clothing. Millennials' product preferences for 'would most like to have' for Guatemala products were 46.4% apparel, 30.6% home décor pillows, 12.8% furniture, and 5.6% accessories. Millennial preferences for Peruvian products were 70.4% apparel, 16.7% for accessories, and 5.8% for furniture. Co-designed textiles and products had the highest preference for millennials. Exploratory factor analysis reduced the 22 statements to identify five factors of 'Ethnic', 'Sustainable', 'Connected', 'Cause', and 'Health'. Composite variables were created for each factor to determine if there were different product preferences for millennials between factors and high and low scorers within each factor. The same products held similar appeal for all factors. Millennials selected co-designed textiles designed into modern silhouettes in apparel, contemporary furniture, and home décor products for Guatemala. Millennials preferred co-designed apparel of textile insets and apparel silkscreened with cultural textile patterns for Peruvian products.

The sustainability-oriented innovation model was incorporated for incremental improvement in process, in this case the production process of cultural textile products. The findings can be used by artisan organizations to incorporate cultural textiles into products in apparel, accessories, home decor and furniture that may be perceived as unique by consumers. Participants' descriptions of products preferences may indicate that the co-design process with cultural textile artisans is beneficial in producing products relating to consumers' contemporary tastes and lifestyles. The analyses is exploratory in that concepts and relationships were evaluated in a specific time, space, and place, may inform artisan organizations in product design and development.

ACKNOWLEDGEMENTS

I would like to thank my advisor, Dr. Carole Makela, who led me on my own journey through sustainability and working with cultural textile artisans. Her wisdom and guidance along with her appreciation for craft kept me on a path of practice-based research. I am excited that this is not the finish line for this research, but the starting point for a lifetime of work that will truly make a difference for cultural textile artisans. I am deeply grateful to Dr. Mary Littrell for helping me enter the world of academic research and opening my eyes to artisans and hand crafted products in distant cultures. Mary Littrell introduced me to beautiful textiles with their rich history and significance. I now accept the responsibility to protect the endangered artisans and their work.

I am deeply grateful to Dr. Nancy Miller, Dr. Thomas Dean, and Dr. Gene Gloeckner who gave me inspiration in social enterprise, entrepreneurship, and critical analysis. I thank the Department of Design and Merchandising who have supported my years of work in this field. Thank you to faculty, staff, and students and who inspire me every day to be a better designer and teacher.

I am grateful for Averie Floyd and Bonie Shupe who worked with the artisans in Guatemala and Peru and gave their time and talents to the exhibition and who today continue their professional work and design talents with cultural textile organizations. I am thankful to Crystal Martin, my business partner, as we enter into the real world of social enterprise. Most of all, I am thankful for my loving and supportive husband, Terry, and our five children, Tarra, Dane, Tess, Dora, and Carl, who have been patient and kind as I travelled the dissertation

journey. I give my utmost acknowledgement to the greatest creator of all, my Lord, who gives me strength and opens doors of opportunity every day to carry on with this work of the heart.

DEDICATION

*Dedicated to
the weavers who
take the individual yarns
and create beauty
and history
in each piece of cloth.
May the world
enjoy and appreciate
the wonders of your
textiles.*

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LIST OF KEYWORDS

Sustainability-Oriented Innovation, Uniqueness, Cultural Creative, Cultural textiles, Artisans, Consumer Preference, Fair Trade, Millennial, Handcraft

DEFINITIONS OF TERMS

Artisan - a person who is skilled at making things by hand, who practices a trade or handicraft, and produces something in limited quantities often using traditional methods (Merriam-Webster, 2014).

Authentic Cultural Textile - materials that contribute to a region's local identity in the context of crafts value, which provide locals with a source of income and allow knowledge to be translated into well-crafted products (Manzini, 2010)

Backstrap loom - a traditional loom formed of two sticks that can be moved in alternating directions to form a shed or opening. The loom is transportable during the weaving process. On backstrap looms, artisans can weave up to 24" widths of fabric of limited length, between 30 and 60 inches. The warp threads that are set up first and then tied to a post or a tree to put tension on the yarns while weaving (Chandler & Senuk, 2009) determine the length of the fabric.

Co-design - the joint creation of value by the producer and the customer; a process of value creation shifting from the product and firm centric view to a personalized consumer experience; customers play an important role in product innovation through co-design; active consumers are informed, networked, and empowered and they are increasingly co-creating value with the firm. (Prahalad & Ramaswamy, 2004). Co-design is a special instance of co-creation and happens when the customer, both the end consumer and consumers along the supply chain of product development, actively participate in the design process of new products (Sanders, 2008).

Co-design develops a design outcome with deeper consumer satisfaction than traditional product centric offering to a passive consumer (Niinimäki & Hassi, 2011). Application of co-design with cultural textile artisans involves directly interacting with cultural weaving organizations and artisans in design and layout of hand woven textiles.

Co-designed product – A product developed from design ideas of customers or collaboration with designers incorporated into the design process through verbal input, sketches of design ideas, computer drawings, and/or digital photographs (Shaukat, 2012)

Color - the attributes of color are hue which is the ‘wavelength’ and what most people think of as color, lightness and brightness and the white-to-black property of the color, and chroma which is the intensity or vividness of the color (Fairchild, 2005); the meanings of different colors have a robust demarcation between cool colors (green, blue, white) which are associated with peaceful, gentle, and calming meanings; and warm colors (yellow, gold, orange, red, and purple) which are associated with emotional, vibrant, hot, active, and sharp meanings (Madden et al., 2000)

Fashion Trend – temporary cyclical phenomena adopted by consumers for a particular time and situation (Sproles, 1981)

Function - the special purpose or activity for which a thing exists or is used (Merriam-Webster, 2014)

Huipil - a traditional blouse, woven or embroidered, which indicates indigenous textile weavers associated with Mayan community affiliation in Guatemala. The design of huipilles links indigenous artisans to their neighbors and allows individual expression and expertise (Kellman, 1990)

Innovation - the implementation of a new or significantly improved product (i.e., change in product properties), process (i.e., changed delivery methods), marketing method (i.e., new product packaging), or organizational method (i.e., changes in workplace organization) in business practices, workplace organization, or external relations. Innovations need to be successfully diffused in the market with products or implemented as processes to achieve an economic impact, to go beyond inventions. An innovation must have a significant degree of novelty for the firm and can be new to the market or world (OECD, 2005, p. 17, 46, 58)

Knitting – to form by interlacing yarn or thread in a series of connected loops with needles (Merriam-Webster, 2016)

Mainstream - supports products and services being attractive and readily available to the general public versus being of interest only to a specific subset of the public (Business Dictionary, 2013)

Quality - defined broadly as superiority or excellence. Perceived quality can be defined as the consumer's judgment about a product's overall excellence or superiority. Perceived quality is different from objective or actual quality, is a higher level abstraction rather than a specific attribute of a product, and a judgment made by the consumer (Zeithaml, 1988)-

Re-purposing – the process of changing something so it can be used for a new purpose
(Merriam-Webster, 2016)

SME - Small to Medium Enterprises characterized as innovative, market-oriented, personality-driven entities focus on more sustainable offerings in the market (Anderson, 1998; Crals & Vereeck, 2005; Rodgers, 2010).

Sustainable Development - development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED, 1987)

Uniqueness - an individual's pursuit of differentness relative to others that may be achieved through the acquisition, utilization, and disposition of consumer goods for the purpose of developing and enhancing one's personal and social identity (Tian, Bearden, & Hunter, 2001)

Weaving - to form cloth (textiles) by interlacing strands of yarn or thread; to make cloth on a loom by interlacing warp and filling threads (Merriam-Webster, 2014)

Zero-waste - a philosophy that forces designers and production of textile products to challenge existing techniques; it involves fitting all pieces of a product pattern like a jigsaw puzzle so no fabric is wasted (Liu, 2010)

CHAPTER 1

Introduction

In Guatemala and Peru, textile artisans are limited in selling their products by their access to markets. Textile artisans have skills in weaving and textile design and may desire knowledge of current trends and consumer preferences regarding their textiles and products to expand viable businesses and gain access to global markets (Lynd, 2000). Cultural textile artisans have limited knowledge about the lifestyles and product preferences of potential customers in the global marketplace. Research based guidance in product design decision-making will aid cultural artisans to develop strategies to enter new markets (Littrell & Miller, 2001). Due to lack of market research regarding consumer tastes and product preferences, artisans may be developing textiles and products that are not attractive or functional for consumers in the global marketplace.

Handcraft artisan techniques are taught to children and pass through generations. Hand-production of cultural textile products allow cultural artisans to retain components of their indigenous aesthetic and ancient craft traditions. To preserve their craft and design traditions and sustain their livelihoods, artisans need to know how to make unique and attractive textiles and products for the global marketplace and contemporary cultural consumers. However, they recognize they must modify their products to cross cultures and achieve sales (Littrell & Dickson, 1999). Artisans need knowledge and access to distribution networks to thrive in a global market (Cohen, 1998; Eber & Rosenbaum, 1993; Ehlers, 1993; Olson, 1993; Stephen, 1993; Tice, 1995).

The voices of Mayan women weavers in Guatemala beseeched “help us get our textiles to market”, which motivated this journey to explore market access for the artisans. My first trip to Guatemala in 2007 was a study tour of cultural textiles led by Dr. Mary Littrell, a renowned

expert in fair trade textiles. Dr. Littrell was returning to Guatemala with college students to follow up years of research with fair trade organizations and weaving groups.

Guatemala is a country known for its weavings, especially as a craft and skill of the indigenous women.

The productive base of the value chain is composed of 700,000 to 900,000 weavers, most of whom are indigenous women from socially marginalized, low-income households. These women combine back-strap weaving with other economic activities. Some of them self-market their products to final consumers in the popular and tourist market. Thus, both the productive base of the value chain and many of the retail businesses in the popular and tourist market channel are operated as microenterprises (Dunn & Villeda, 2005, p. 18).

In addition to Guatemala, Peruvian textile artisans are included in this research. The textile artisans in Peru are known for their handcraft of weaving and knitting of woolen yarns. Wool fibers are produced from alpaca, llama, and sheep in the highlands of southern Peru. Textiles are the main expression of their culture by weaving or knitting from handspun yarn from the hair of the community animals (Rowe & Cohen, 2002). Typically, women's shawls, men's ponchos, and bags are decorated with lengthwise patterned bands including symbolic designs of the Inca tradition.

This purpose of this study explores the concept of co-design working directly with cultural textile artisan groups in Guatemala and Peru creating textiles and products with contemporary color trends while keeping traditional crafts and designs. The concept of sustainable-oriented innovation provides a framework to assess alternatives in the traditional fair-trade supply chain that may expand market opportunities. The Desire for Unique Consumer Products (DUCP) scores were analyzed related to product preferences attributes of uniqueness, color, function, and quality. Millennial consumer preferences of the cultural textile products

were analyzed related to values of cultural creativity and preferences for products they would most like to have. The process model for conceptual frameworks is shown in Figure 1.

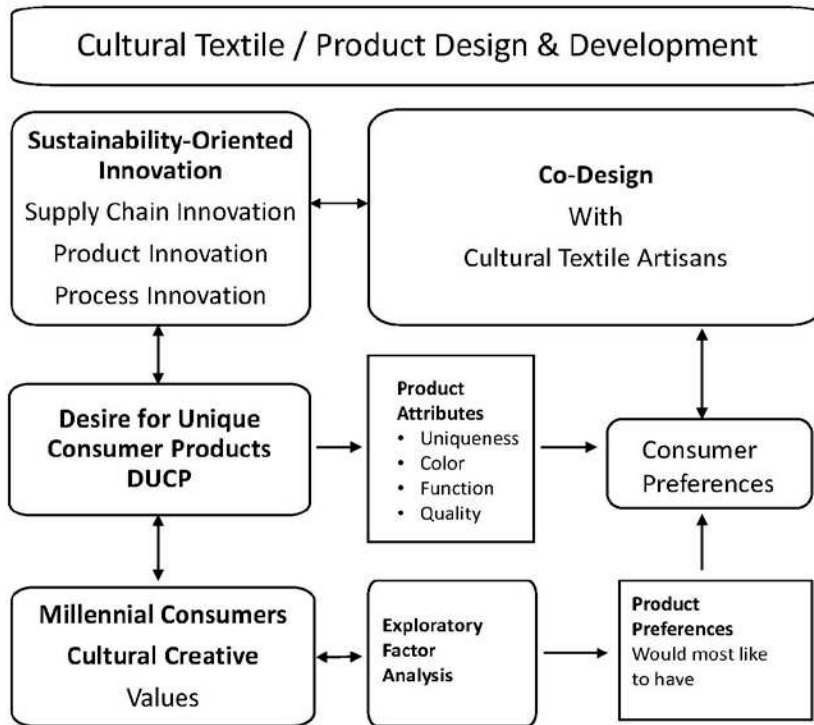


Figure 1. Process Model for Conceptual Frameworks.

This research is the culmination of three years of practice-based research in co-design of backstrap woven textiles with a fair trade weaving organization in Panajachel, Guatemala. The fair trade organization had previously brought designers to Guatemala to assist and inspire weavers to create new designs in their weavings. The weavers would create samples of new designs, but there was not a market-driven design process to expand finished products for market. Working with this fair trade organization, the researcher modified the innovation process through co-design and incremental innovation of the supply chain of handcrafted textiles into contemporary products.

Research of artisan textile products from Guatemala and Peru may benefit textile artisans in these countries by working with contemporary apparel and textile designers. Through the process of co-design, this collaboration assists cultural textile artisans in understanding and interpreting fashion trends and consumer tastes in the global marketplace. Co-design is a process of collaborative design thinking involving joint inquiry and imagination in which diverse people explore and define a problem and collaboratively develop and evaluate solutions (Steen, 2013). Participants are able to express and share their experiences and negotiate their roles and interest to create positive change. Co-design presents an opportunity to work with cultural textile artisans to create textiles and products with the intent to expand product offerings and sales in the global marketplace.

Guatemalan and Peruvian products were innovated using vintage cultural textiles and co-designed artisan textiles into new product categories. This study analyzed consumer preferences of products according to uniqueness and product attributes of color, quality, function, and willingness to have. The findings will inform cultural textile artisans, product design businesses, and educators about consumers' contemporary preferences to assist the artisans in expressing their culture and expertise to make products that are attractive and functional for the global market. Consumer preferences of products produced by the co-design process may innovate processes for cultural artisans to reach the global marketplace.

Fair Trade and Artisan Development

Fair trade businesses adhere to a philosophy of paying a fair wage, improving the daily life of workers, enhancing working conditions, and contributing to environmental sustainability (Littrell, Ma, & Halepete, 2005). Littrell and Dickson (1999) developed a continuum of fair trade business practices, which include paying fair wages in a local context and providing a safe and

clean workplace. Littrell and Dickson (1999) encouraged development of sustainable businesses by empowering artisans, fostering well-being, establishing political and social justice, and developing equitable trade. In 2013, shoppers in 125 countries spent 4.8 billion Euros (6.48 billion U.S. Dollars) in fair trade products (Fair Trade International, 2013).

Dickson and Eckman (2006) developed a definition for socially responsible apparel and textile businesses. They identified three conceptual themes important in teaching social responsibility to apparel and textile students. The first theme was a business orientation encompassing the environmental consideration and multiple stakeholders who affect systems from production and marketing to consumption of products. The second theme accounted for balancing ethics and morality with profitability achieved through accountability for business decisions and strategies. The third theme was a desire for outcomes that are sustainable and do very little harm to the world and its people (Dickson & Eckman, 2006).

In conventional product development, agents and middlepersons may be involved as products change hands many times from exports from one country to sell through various channels of distribution and merchants to the final user and consumer. Figure 2 compares a conventional export supply chain with a shorter fair trade cultural product supply chain.

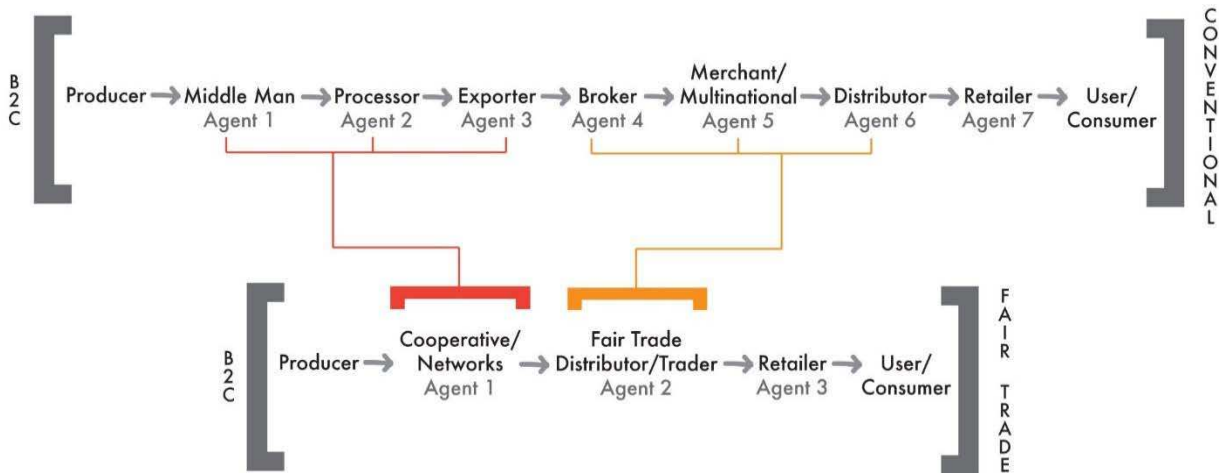


Figure 2. Conventional Export Supply Chain Compared to Fair Trade Cultural Product Supply Chain (Fair Trade Software Foundation, 2014).

It is important to note that at each stage of the supply chain, a profit margin is added into the price of the product to allow each agent or company the opportunity to economically benefit for their work. Fair trade works to shorten this supply chain and eliminate some of the middle agents and companies, which will ultimately allow a producer to earn a higher wage.

Cooperative networks and fair trade distribution systems shorten the supply chain and allow producers to earn more for their products.

Alternative Trading Organizations

Cooperative networks in the fair trade supply chain system may be an Alternative Trading Organization (ATO). These organizations assist artisan producers with raw materials, financing, and marketing of finished products because of the lack of knowledge of market systems and business skills (Dash, 2011). The philosophy of the ATO movement is the recognition that one of the root causes of poverty is the dependence of small-scale producers on relations with agents and companies in the middle of conventional export supply chains, which are often exploitive (Coote, 1992).

ATOs buy products directly from cultural artisans or through support service groups that operate with cooperative principles. Working with ATOs, artisan groups gain access to markets they would not otherwise be able to reach. Many of the customers of ATO products support the philosophy of cooperative production and fair trade. ATOs tend to be flexible and understanding when there are problems with supply and production and do not cancel an order if it fails to arrive on time.

ATO catalogues and stores often focus on the gift trade (Paige-Reeves, 1998). Being associated with the gift trade leads to a problem with ATOs selling upscale and expensive items. “Expensive handcrafted apparel and home furnishings are often marketed with cheap artisan products from around the world creating an inappropriate context for high-fashion garments” (p. 85). Artisans who are producing handcrafted products, which take many days to produce, deserve to sell their products at a higher price than the traditional gift market. In addition, the traditional ATO customer represents a marginal consumer segment in the market that is saturated with a particular item (Coote, 1992).

Cultural Artisan Textile Products

The commercialization of artisan production is expanding as the world market for craft objects grows (Grimes & Milgram, 2000). The success of handcrafted products is dependent on artisans producing quality products in keeping with the tastes and preferences of consumers. Increased commercialization of products for export markets require artisans to include artistic craft and ethnic values with a touch of innovation (Dash, 2011).

After agriculture and tourism, artisan work provides a needed source of income for many people in less developed countries (Basu, 1995). Proponents of artisan product development find craftpersons can work and produce income while achieving social and cultural goals of

remaining in traditional villages and preserving cultural meaning through their crafts (Basu, 1995; Bhatt, 2006; Grimes & Milgram, 2000; Liebl & Roy, 2004). Craft production for commercial sale is becoming an integral component of communities' economic activities especially in rural areas. For many artisan enterprises, participation in regional and export markets is essential to their survival (Littrell & Dickson, 1999). However, questions remain regarding the viability of artisan enterprises for economic development and sustainability (Chatterjee, 2007; Liebl & Roy, 2004; Morris, 1996).

Cultural artisans would benefit by developing creative, innovative, and market-driven products to a diverse customer base (Aageson, 1997). Apparel and textile companies have recognized the importance of fashion trends to cultural textile and product development (Littrell & Miller, 2001; Paige-Reeves, 1998). Communicating current fashion trends to cultural textile artisans is vital to their understanding and knowledge of tastes and lifestyles of those in the global market (Littrell & Miller, 2001).

As global access expands with the use of the Internet, consumers have opportunities to select unique products formerly found only in distant markets. With the Internet, consumers and producers have flexible, fast, and inexpensive ways of participating in the global marketplace for products and services (Simeon, 1999). With increased globalization, handcrafted products have become commoditized and artisans are competing with goods from all over the world (Dash, 2011).

In contrast to their skill with handcrafting textiles, cultural artisans may not have marketing skills, language skills, or sufficient capital to create their own consumer base. They want to weave and have someone else sell their product. Many artisans may not have the ability or skills to work directly with consumers on the Internet. Building strong artisan enterprises

requires investment in working with artisans to develop business skills according to specialists in international craft marketing (Littrell & Miller, 2001). Paige-Reeves (1998) describes the gains and challenges of knitting artisan groups in Bolivia that prevent greater success. She states, “no matter how well a group is organized, or how well-made the product, obstacles to obtaining sufficient credit, the difficulty of designing fashionable products which appeal to consumers, and the inability to access markets in industrialized countries, limit the growth of cooperative knitting organizations” (p. 85).

Guatemalan Cultural Textile Artisans

Textile artisans in Guatemala are well known for their backstrap weaving of cotton thread in bright colors of ancient patterns and symbols. In Mayan time, the Goddess Ixchel taught her descendants how to weave at the beginning of time. Mayan Hands (2014), an ATO operating in Guatemala, describes weaving in the Mayan culture from the myth the goddess Ixchel first taught woman how to weave at the beginning of time. Since then, Maya mothers have taught their daughters, from generation to generation uninterruptedly for three thousand years, how to wrap themselves around the loom and produce exquisite cloth. In addition to important indigenous religious and social aspects, weaving has historically been central to women’s economic contribution to their households. Since that time, every grandmother and mother has taught her daughter to weave on backstrap looms (Chandler & Senuk, 2009). Backstrap weaving is a traditional activity that allows women to weave four to five hours a day while maintaining the daily activities of caring for children, cooking, feeding animals, and washing clothes.

The backstrap-weaving loom forms a shed or opening with two sticks that lift in alternating directions to weave textiles. The loom is transportable during the weaving process by securing the warp threads around a post or tree while the other end is secured by the backstrap

around the body giving tension to the yarns during the weaving process. Traditionally, women are trained on the back strap loom and may weave in their homes, the garden, or travel to a friend's home and weave with others. Maya weavers use cotton yarn and create patterns of historic cultural symbols with the crossing of threads in the back strap loom. Women can weave up to 24" width of fabric of limited length, between 30 and 60 inches.

The art of weaving is passed down through generations and is taught to both men and women. The weavers are primarily indigenous and live away from urban areas. Many are Mayan descendants who settled in the highlands during the 36-year period of traumatic civil war in Guatemala from 1960 to 1996. Mayan weavers live off the land with small houses and gardens and continue their craft of backstrap weaving to make functional clothing and apparel and home items for to sell in local markets for income. Weaving and textile handcraft production provides a strategy for indigenous women in the highlands of Guatemala to fight desperation and increase family income. Belonging to a weaving group gives women a sense of community while providing a source of income and a way to maintain their cultural traditions. They benefit from learning to express themselves in group decision making and gaining access to different types of training in craft and product development, health, and entrepreneurship (Lynd, 2000).

Since many of the weavers are in the mountain highlands of Guatemala, they do not have easy access to markets. Traditionally, they travel once or twice a week to local village markets to sell their textiles to tourists or trade with others. However, many of the weavers do not own vehicles and rely on public transportation and travelling to markets reduces the time the women can spend weaving. The competition between Maya weavers is intense and weavers often negotiate at lower prices with buyers.

Artisans fear that if they do not continue to make quality marketable products in traditional designs and teach their children the craft, both the designs and traditional weaving knowledge will be lost, especially the backstrap loom technique. Local craft production may lead to more self-reliance and independence for young women compared to the option of multinational factory work. Daughters of weavers may now perceive hand weaving as unprofitable and many turn to other forms of labor including house cleaners, laborers in maquiladora factories, or store clerks or moving away from their village to continue their education in hopes of obtaining professional jobs.

The possibility of selling handcrafted textiles in the international market allows artisans to maintain their cultures and traditions while earning an income (Lynd, 2000). The material price increase has affected artisans as they purchase yarn for their weaving and caused Guatemala weaving products prices to be higher for markets (Clifford, 2010). Indigenous weavers in Guatemala have struggled to gain international marketplace associates needed to export their goods.

In her work to improve textiles designs for the global marketplace and improve systems to maintain high quality work by indigenous weaving groups, Martha Lynd established a working relationship with Maya Traditions, a non-profit organization, which supports weaving cooperatives in the Guatemalan highlands. Lynd (2000) established five fundamental guidelines to improve the quality of work and sales of products. The first guideline is acknowledging with retailers that product development is a slow process and a series of samples take time to produce before large orders are placed for production and delivery. The second guideline assesses high skills and creativity for individual weavers in each group who are able to handle new color combinations and measurements to create new samples. The sample allow other weavers in the

community to use the new weaving as a tangible reference for counting threads and devising a method to remember the design and color combinations. The third guideline allows ample time for the weavers to fill the orders because within the rural economy weavers must accomplish other daily activities along with weaving for production. The fourth guideline was developing a few lower cost items combining small pieces of distinctive traditional weavings with less expensive cloth to increase affordability of products for consumers. The fifth guideline was to discount inferior quality textiles by fifty percent so artisans receive less for their weaving and understand the consequence of meeting quality standards for their work.

Lynd (2000) discusses the challenge of introducing new designs and color combinations requested by retailers. “We want to help the women succeed in the international market, however, as a fair trade business committed to preserve producer groups’ traditions, we do not want producers to lose the integrity of their weavings” (p. 71). Weaving groups were organized to earn a better price by selling weavings through the fair trade system. Weavers are taught to take personal responsibility for making the best work possible and to correct mistakes. One of the most difficult task for weavers is determining the value of each weaving in relation to value of their currency and ultimate price points of product in U.S. dollars or European currencies. The pricing situation reflects their lack of access to the Internet and the global marketplace and possibly their need to work with organizations.

Peruvian Cultural Textile Artisans

With over 10,000 years of textile history, Peru has the longest continuous textile production in the world. Yarn and weaving processes were invented in Peru before pottery at the beginning of agricultural practices. Peruvian textiles incorporate simple hand spun animal fibers into complex weavings (Roberts, 2014). Weaving traditions in Peru are passed down through

traditional teaching methods of observation and repetition. Peru is a center of modern technology in textile production and has a place as a leading producer of high quality textiles. As in Guatemala, the backstrap loom dates back to pre-Inca times and is used for weaving in the Andes today.

The primary region of artisan hand crafted weaving in Peru is located in the Patacancha Valley in the Cusco region. The women and children of rural Andean villages tend their sheep, llamas, and alpacas. Both girls and boys learn to spin the yarn and contribute thread to the household (Rowe & Cohen, 2002). Llama hair is woven into blankets, carrying cloths, produce bags, and braided into ropes and slings. Sheep fleece is a coarser fiber and may be used to weave rustic home products that do not directly touch the skin. Sheep wool is the most commonly used fiber in the region because it is easier to weave and dye than llama or alpaca. The cloth produced from sheep's wool is extremely durable and is much heavier than from alpaca fiber. All yarn is spun for a specific purpose and warp yarn must be spun more tightly than weft yarn because it is held under tension on the loom. On average, one meter (approximately three feet) of yarn is spun per minute with the hand spindle (Rowe & Cohen, 2002).

Alpaca has been bred in Peru for over 5,000 years. Alpaca hair is used for clothing because it is softer and considerably warmer than sheep's wool. Alpacas are shorn once a year during the milder part of the wet season. In the pre-Inca civilization, nobles enjoyed fine garments of woven alpaca fleece while their wealth was measured according to the number of alpaca they owned. When the Spanish conquered the Incas, 500 years ago, they ignored the virtues of the alpaca and replaced them with their own sheep. The vanquished Inca, like the indigenous Maya of Guatemala, retreated to the mountains and took their prized alpaca with them. Today there are approximately 3 million alpaca in the Andes (Threads of Peru, 2014).

Alpaca fiber occurs naturally in 22 colors, which makes alpaca the most diverse naturally colored fiber-producing animal on earth. Products made from alpaca hair are generally more valuable than those made of hair from sheep.

Knowledge of the ancient process of dyeing wools using natural materials almost vanished from the indigenous Andean culture because of the ease and preference for brightly colored synthetic dyes. Synthetic dyes are less time consuming and offer more intense shades of color. However, the demand for naturally dyed products from foreign tourists has reintroduced the art of dyeing. Resurgence in the old methods of dyeing using local plant and minerals has led to consultation with the elders who remember the process and the dye traditions have been preserved (Roberts, 2014). Peruvian textile artisans learn the art of natural dyes for sheep's wool yarns from plants in the region, so the color palette is much darker with muted natural shades.

The Center for Traditional Textiles (CTTC) of Cusco started in 1996, with a mission to preserve the Inca textile traditions. Serving nine weaving communities, CTTC provides a community textile center, training and resources for all natural dyeing, knitting, spinning, and weaving (Alvarez, 2007). The CTTC empowers artisans and develops markets for their goods. Sustainable product development terms of cradle-to-cradle, triple-bottom-line, and co-design are fundamental to CTTC and the weaving groups. The artisans are involved with every step required in making cloth, starting from shearing sheep to finished textiles. The center promotes cultural textiles from Peruvian artisans, which feature traditional patterns and symbolic layouts and carry rare information among the indigenous people of Peru. This region has used textiles for communicating because writing has never been the prime means of communication among the Inca people.

The coordinator of the Center, Nilda Callanupa, works with communities in the most remote Andean villages to preserve traditions that might be lost as the industrial world impacts these communities. CTTC works with five communities to build shelters where the villagers gather to weave and share information including dyeing and handcrafting textiles. Elders now meet in these shelters to pass on knowledge and skills to younger members of the community. Nilda has built a collection of traditional textiles for reference purposes to be used by villagers seeking to revive lost techniques, layouts, and patterns. Traditional pieces are often weavings made twenty or thirty years ago, before great changes occurred in the country. Her eventual goal is to establish local collections kept in each of the villages as well as traveling exhibits within Peru (VanBuskirk, 2000). CTTC encourages the younger generation to weave and has accomplished the goal of training Cusquenian weavers to be proud of their heritage and traditions by promoting the sale of textiles in the area (Alvarez, 2007)

Henrici (2003) reports there are programs in Peru to assist small-scale producers of handcraft products in an effort to bring them a higher share of the profits. The report acknowledges and responds to the concept of nonverbal forms of communication, such as simple pictures of weaving designs and products, which may be needed with the diverse makers of crafts throughout Peru. They found graphic elements communicate more widely than the written word. Forms of graphic communication may include diagrams, photographs, and prints that appear as guides, illustrations, and patterns throughout the history of the craft.

Practice-based Research with Cultural Textile Products

Over the last thirty years, practice has begun to move out of the design studio and into the world of academia (Leavy, 2009). Practice or arts-based research is both emergent and

interdisciplinary. Practice-based research projects should include a well-researched contextual framework and involve extensive practice of the artist or designer's skills (Bird, 2000).

This research incorporates 'innovative product design' in collaboration with the textile artisans involved in the creation of cultural textiles. Biggs (2000) states, "practice-based projects are those which include as an integral part the production of an original artifact in addition to...the production of a written thesis" (p. 2). Emerging tools of practice-based research address questions in holistic and engaged ways in which theory and practice are intertwined (Leavy, 2009). The goal of this study incorporating practice-based research is to determine consumers' preferences of artisan textile products co-designed with cultural textile artisan groups in Guatemala and Peru.

Co-Design in Practice-Based Research

Co-design is the joint creation of value in a product by the company and the customer (Prahalad & Ramaswamy, 2004). The co-design working relationship for this practice-based research led to textile design opportunities combining hand woven cultural textiles with environmentally friendly textiles in home and apparel products. Co-designed textiles are woven in Guatemala and then constructed into products in the U.S. This process assures high quality and competitive pricing for the global market.

The co-design process allowed for a smaller piece of hand weaving or embroidery to be part of a product instead of being the entire product. It was important to develop textiles with colors that would be attractive to global consumers while allowing weavers the freedom to design textiles that were culturally important to their heritage. Co-design integrates the textile design process by sharing pictures of color inspirations and technical diagrams of the shape of weavings and embroideries based on product designs to the artisans.

The first series of co-designed textiles were designed into functional and aesthetic products for this practice-based research keeping in mind the tastes and lifestyles of a contemporary consumer. Products in the exhibition were designed and developed using backstrap and authentic hand woven textiles from Guatemala and Peru as well as hand-embroidered textiles from Guatemala. These co-designed textile products were exhibited in a university gallery that allowed for display of a variety of functional home décor, apparel, and accessory products. In the Guatemala section of the exhibit, hand embroidered textiles were co-designed with a Mayan artisans to simplify the traditional embroidery bird designs from Santiago d'Atitlan in Guatemala. Connections with embroidery artisans was possible through a micro-financing organization, Friendship Bridge, in Guatemala who assist entrepreneurial artisans in the country.

To compare and contrast the co-designed products, another group of authentic textile products, designed and woven by cultural textile artisans in Peru, was included in the exhibit. The authentic Peruvian products in the exhibition featured weavings produced by artisans working with the Center for Traditional Textiles in Cusco (CTTC) and donated by ClothRoads, a global textile marketplace enterprise located in Loveland, Colorado. ClothRoads is an e-commerce business and that donated authentic textile products made by artisans for the exhibition. ClothRoads also donated Peruvian hand woven textiles for the exhibition that were incorporated into apparel and accessories by senior design students of the university.

Exhibition Design

The plan for the exhibit featured cultural textiles from Guatemala and Peru artisans by dividing the 1,000 square foot gallery space into two distinct areas, Peru to the right, Guatemala to the left. Each product displayed in the exhibition received a number for the study. The

Guatemalan textile products were numbered G1 to G32 and Peruvian products P40 to P60. Numbers were displayed prominently on each product. Pictures of all Guatemala products are shown in Appendix A and Peruvian products are shown in Appendix B. This exhibit plan allowed experimentation of hand-woven and hand-embroidered textiles in different product categories (See Appendix C). Consideration was given to how visitors would experience the gallery space to evaluate the textile products. The gallery space focused on color stories to provide information on the textiles specific to the geographic areas. Within the gallery, the Guatemalan and Peruvian textile areas divided into three areas, each with a specific color and textile craft emphasis.

In the Guatemalan area, the first color story was “Bold and Bright”. This area featured the hand-embroidered bird textiles set into pillows, framed art, and tabletop products. To simplify the intricate bird embroideries found on traditional garments from Santiago Atitlan, the co-designed process was initiated with a Mayan woman artisan (Figure 3). The goal for the simplification of the bird embroidery design was to allow the artisan to be paid a fair wage for their handcrafted needlework and increase aesthetic appeal for global consumers.



Figure 3. Traditional Guatemalan bird embroidery from Santiago D’Atitlan and co-designed bird embroidery incorporated into placemat.

The second color story was “Black and White Contemporary” using materials of white and black hemp, hemp wool, hemp silk, and hemp faux fur. The products featured hand woven backstrap squares with traditional Mayan designs on a black background. The hand weavings in the black and white color story were co-designed with Maya Tradition weavers in Panajachel, Guatemala. The Black and White Contemporary color story featured a cream hemp wool women’s suit and pillows with the Maya Traditions woven squares inset into cream and black hemp with a herringbone weave pattern.

The woman’s suit was designed to appeal to a professional woman and a cultural creative target market. The color story kept the natural white, with focal points of hand woven squares that were co-designed with Maya Traditions. The coat had a back inset of a hand woven square and two patch pockets of the eight-inch hand woven squares (Figure 4). The pillows incorporated

the same color scheme to frame the beautiful hand woven textile and to appeal to a sophisticated home décor market.



Figure 4. Black and White Contemporary Color Section with Guatemalan Co-Designed Textiles.

The third color story incorporated traditional vintage cultural textiles from Guatemala. This area was established to compare consumer preferences of co-designed textiles with authentic cultural textiles. The “Vintage Traditional” area of the Guatemalan products

incorporated muted traditional colors and weaving designs including a vintage huipil, which is a loose fitting tunic garment made of three woven rectangles with a hole in the center to slip over the head. Artisan designed textiles were integrated with products that had been recycled from thrift stores including a rattan swivel chair, a rattan table, and director's chairs (Figure 5). Each of the three color stories included framed textiles created as art for the walls.



Figure 5. Authentic huipil from Guatemala traditional cultural textile made into chair cushion.

The first area of the Peruvian products featured products that were co-designed by two senior design students interested in fair trade and cultural products featured brightly colored woven textiles. Both of the students worked with ClothRoads, a cultural textile product e-

commerce business, and had the opportunity to choose hand woven cultural textiles to incorporate into their designed products. Co-design for the Peruvian products involved students using traditional cultural textiles and incorporating the textiles or textile design into contemporary products, primarily apparel and accessories.

The first product designed was a dress that incorporated a narrow backstrap hand woven panel in center front and back (Figure 6). The vertical stripes of the hand woven panel were woven with alpaca yarns dyed with synthetic dyes. Synthetic dyes produced a higher saturation of color for the geometric design woven into the panel. The senior apparel design student paired the hand woven panel with a light blue green silk faille moire taffeta with a woodgrain finish. The fabric was chosen as a contrast to both the native colors and texture of the wool panel. The design was draped directly on the dress form to accentuate the woven wool strip in the front and back center of the dress. The neck area had a geometric step shape symbolizing the Incan culture and capped sleeves.



Figure 6. Co-designed dress by senior design student using Peruvian hand woven cultural textile.

There were three color stories in the Peruvian area with products chosen for the exhibit including authentic cultural textile products produced by artisans in Peru. The first color story, ‘Natural Living’, featured authentic hand woven alpaca products. These products included ponchos, hats, bags, and weavings that were framed and displayed on furniture. The yarns of all of these weavings were natural alpaca hair, which comes in 22 different colors ranging from cream to dark brown. Figure 7 displays the mannequins with the authentic woven and knitted products.



Figure 7. Authentic Peruvian hand-woven poncho and knitted hat in natural shades of alpaca.

The second color area of the exhibit, 'Natural Dyes', featured Peruvian products authentically designed and produced by textile artisans in Peru including ponchos, bags, pillows, framed art, and tabletop products. Signage provided information regarding the plant and insect materials used to produce the dark muted shades of the naturally dyed products (Figure 8).



Figure 8. Authentic Peruvian poncho woven with yarns dyed with natural materials.

The third area of the Peruvian products, 'Shades of the Earth', featured natural colors using various plants, bugs, lichen or mold. These products were all created from the wool of sheep or alpaca that was hand sheared, handspun, and woven on a back strap loom. The textiles used in these accessories and products were from different villages throughout the highlands of Peru.

The Gustafson Gallery is an exhibition space under the direction of the Avenir Museum of Design and Merchandising in the Department of Design & Merchandising at Colorado State

University. The gallery has a formal application system for exhibition ideas; Appendix C displays the application for the exhibit. The theme and name of the exhibit was “Journey to Sustainability: Artisan Development”. The purpose of the exhibit as displayed on signage and marketing materials was “An Exhibition of Contemporary Apparel and Home Décor using Authentic Hand-Crafted Textiles from Guatemala and Peru” (See Appendix D).

Delimitations

This study is delimited regarding the research objectives to include co-designed cultural artisan textile products in comparison to authentic cultural artisan textile products from two countries, Guatemala and Peru, with a rich heritage and tradition of textile artisans and handcrafts. The study was limited by time, place, and space in the exhibition of 51 cultural textile products in one gallery of a college campus building. The exhibition was open to the public; however, due to the location of the gallery, the majority of participants were college students and not representative of the public invited to the exhibition. The majority of the participants may have an interest in clothing and textiles because the gallery is located within a department of design and merchandising. The focus of this study is on indigenous textile artisans and recognizes that similar issues may relate to artisan work in the U.S. and other countries.

Assumptions

The assumptions of this research are that the products in the exhibition represent a small part of the textiles produced in Guatemala and Peru and are not representative of all cultural textile products in the two countries. Assumptions are made that the participants in the survey answered honestly and to the best of their ability regarding product preferences, attitudes regarding unique consumer products, and psychographic and demographic information.

Significance of the Study

The overarching aim of the study is to identify consumer preferences of cultural textile products to increase global market access and sustain the livelihood of cultural textile artisans in Guatemala and Peru. By understanding the product preferences of consumers for artisan textile products, artisans and marketing organizations will be more effective in meeting the needs and desires of target markets and identifying new niche markets.

The significance of this study is to understand consumer preferences of unique products, and attributes of color, function, and quality in artisan textile products. Findings may benefit artisan textile organizations and expand viable markets for cultural textile artisan products with increased consumer demand. Application of design principles, product design and development, and consumer preferences may be applicable across disciplines of design, marketing, social enterprise, and sustainability. Practice-based research may be significant in co-design processes and pedagogy of product design education.

Practice-based research in co-design of artisan textiles and identification of unique textile products by consumers is incorporated. Information in product design and development processes to innovate and incorporate cultural artisan textiles into design driven products is useful for artisan entrepreneurs and organization. Co-design is one of the eight most important emerging trends for businesses across the globe (Manyika et al., 2007). Customers can play an important role in product innovation through co-design (Prahalad & Ramaswamy, 2004). The co-design process offers multiple stakeholders opportunities to learn and solve problems collectively. Co-design develops a design outcome with deeper consumer satisfaction than traditional product centric offerings to passive consumers (Niinimäki & Hassi, 2011).

The specific objectives of this study are:

1. Analyze consumers' preferences of cultural textile products in the exhibition they would most like to own.
2. Understand the consumer and designer perspectives of co-designed textiles and products with cultural artisans from Guatemala and Peru.
3. Determine consumers' preferences in relation to product attributes of uniqueness, color, function, and quality of cultural textile products.
4. Explore the relationship of consumers' Desire for Unique Consumer Products and product preferences for uniqueness, color, function, and quality of cultural textile products.
5. Explore the relationship of cultural textile product preferences of millennial consumers with cultural creativity values and characteristics.

Researcher's Perspective

My interdisciplinary doctoral program of study included coursework in the Global, Social and Sustainable Enterprise (GSSE) program at Colorado State University. I was given the opportunity to return to Guatemala three years after my first visit, with a team of graduate students researching home textiles used for dengue prevention. Again, I encountered Maya weavers who asked for help in reaching the global market. Our team changed focus from the home textiles with insecticide to putting together plans to work with fair trade weaving groups.

My research includes working as a designer with cultural textiles and artisans from Guatemala and Uzbekistan. This role has provided understanding of a global consumers' perspective and preferences in purchasing cultural textile products. I have practice-based experience as a designer in the fashion industry, developing products for my own company and

as a freelance product designer. As a product designer, I developed understanding of quality assurance as well as the relationship of price with quality in terms of construction and target costing. Awareness of production capabilities as it relates to retail pricing is important when considering the consumer. This study integrates both the design and development process with consumers' product preferences and attitudes.

As an academic researcher and designer in the fashion industry, my work has led to research studies suggesting limitations of global consumers' perceptions of cultural textile products in terms of color, silhouette, and fasteners. While traveling to weaving groups in Guatemala, our GSSE team was made aware of the opportunity to co-design textiles with the Mayan weavers. It is difficult for textile artisans in Guatemala to construct products due to lack of sewing and product development training, equipment, and electricity. Incremental innovation to the supply chain process for cultural textile product development by combining artisans' textiles with sustainable textiles may provide cultural artisans access to the global marketplace and increase sustainability for their craft.

Presentation of Dissertation

The study is organized as a three-article dissertation. The next three chapters are presented each as a journal article. Each article incorporates one aspect from the process model of conceptual frameworks from the survey research of this study and consumer product preferences from the exhibition of cultural textile products from Guatemala and Peru.

The first article, Chapter 2, explores consumer product preferences they would most like to own of the 51 products in the exhibition. Participants written responses of 'what they find most interesting and attractive' regarding the product preferences were analyzed using qualitative analysis. In addition, qualitative analysis of designers' transcripts of products in the

exhibition and public blog posts of a student designer associated with the exhibition and currently working with the textile artisans were examined.

The second article, Chapter 3, explores consumer responses for the eight-item scale for the Desire for Unique Consumer Products. Participants' scores for uniqueness as associated with consumer product preferences for uniqueness, color, quality, and function. The research explores the relationship of the marketing scale and consumer preferences between product attributes. The article further explores consumer product preferences for low and high scores of desire for unique products.

The third article, Chapter 4, examines twenty-two statements of values related to cultural creativity of millennial participants. Millennial consumer preferences for 'would most like to have' of the cultural textile products from Guatemala and Peru in the exhibit were analyzed. Exploratory factor analysis reduced the twenty-two items of cultural creativity to five factors. Product preferences were examined related to characteristics of each factor to determine if there is a difference between the factors in millennial preferences of cultural textile products.

The final chapter summarizes results of the three conceptual frameworks in relationship to consumer preferences of cultural textile products. The research provides findings regarding co-design of cultural textiles and products and recommendations for artisans and organizations regarding innovation of processes and products. Recommendations for future research and implications for applying this research to practice are considered.

CHAPTER 2

PREFERENCES FOR CO-DESIGNED ARTISAN TEXTILE PRODUCTS

FROM GUATEMALA AND PERU

Introduction

Artisan work provides a needed source of income for many people in less developed countries (Basu, 1995). Proponents of artisan product development find craftpersons' work produces income, achieves social and cultural goals of remaining in traditional villages, and preserves cultural meaning through crafts (Basu, 1995; Bhatt & Dignard, 1995; Grimes & Milgram, 2000; Liebl & Roy, 2004). Craft production for commercial sale is becoming an integral component of communities' economic activities especially in rural areas. For many artisan enterprises, participation in regional and export markets is essential to their survival (Littrell & Dickson, 1999). However, questions remain regarding the viability of artisan enterprises for economic development and sustainability (Chatterjee, 2007; Liebl & Roy, 2004; Morris, 1996).

Product preferences of participants were explored related to the concepts of sustainability-oriented innovation and co-design employed in cultural artisan textile products from Guatemala and Peru. The commercialization of artisan production is expanding for craft objects as the world market grows (Grimes & Milgram, 2000). The success of handcrafted products is dependent on artisans, especially cultural textile artisans, producing quality products in keeping with the tastes and preferences of consumers. Increased commercialization of products requires artisans to integrate their artistic craft and cultural values with a touch of innovation for export markets (Dash, 2011).

Cultural artisans seek to develop creative, innovative, and market-driven products to a diverse customer base (Aageson, 1997). Apparel and textile companies producing cultural textile and clothing have recognized the importance of fashion trends to influence and inform their product development (Littrell & Miller, 2001; Paige-Reeves, 1998). Communicating current fashion trends to cultural artisans is vital to understanding global consumers' tastes and lifestyles. Building strong artisan enterprises requires an investment in business skill training for the artisans according to specialists in international craft marketing (Littrell & Miller, 2001).

Cultural textile artisans want to weave and have someone else sell their products. Many artisans may not have the ability, time, or business acumen to work directly with a consumer base outside of their country and/or on the Internet. As global access expands with the use of the Internet, consumers have opportunities to select unique products formerly only available in distant markets. With the Internet, consumers and producers have flexible, fast, and inexpensive ways of participating in the global marketplace for products and services (Simeon, 1999). Lee and Littrell (2003) found more than half of 200 cultural product websites had a scarcity of narrative and pictorial information about the products, cultures, and artisans. Cultural information about artisans' lives and craft production with views of product details may enhance customers' interest in and experiences with cultural products on the Internet. Knowledge of distribution networks are necessary for cultural artisans to thrive in a global market (Cohen, 1998; Eber & Rosenbaum, 1993; Tice, 1995).

The study seeks to explore consumer preferences of co-designed and authentic artisan textile products from Guatemala and Peru presented in an exhibition incorporating contemporary color trends with traditional craft and textile designs. The exhibition displayed both co-designed artisan textiles, products co-designed with artisan textiles, and authentic textile products

produced by cultural textile artisans. The university gallery exhibition allowed display of a variety of functional home décor, apparel, and accessory products designed and developed with cultural textile weaving groups from Guatemala and Peru as well as hand embroidered textiles from Guatemala.

Over the last thirty years, practice has begun to move out of the design studio and into the world of academia (Leavy, 2009). Practice or arts-based research is both emergent and interdisciplinary. Practice-based research projects should include a well-researched contextual framework and involve extensive practice of the artists or designers' skills (Bird, 2000). Biggs and Buchler (2008) state, "practice-based projects are those which include as an integral part the production of an original artifact in addition to...the production of a written thesis" (p. 2). These projects use emerging tools of practice-based research to address research questions in holistic and engaged ways in which theory and practice are intertwined (Leavy, 2009).

To explore the process of innovating the process of creating artisan textiles, co-design was initiated with a cultural textile-weaving group in Guatemala. Co-design is the joint creation of value by the company and the customer (Prahalad & Ramaswamy, 2004). The co-design relationship included the researcher, cultural textile artisans, student designers, and the product development manager of the cultural textile weaving association. This co-design relationship for practice-based research led to textile design opportunities combining hand woven cultural textiles with environmentally friendly textiles in home and apparel products. Cultural textile insets for these products were woven in Guatemala and then constructed into products in the U.S. to assure high quality and competitive pricing for the global market while modifying the supply chain. To understand consumer preferences related to the co-design process of artisan textile products from Guatemala and Peru, the following research questions will be answered:

RQ1) What is the experience of consumers and designers of co-designed cultural artisan textile products?

RQ2) Is there a difference between consumer preferences for co-designed cultural textile products and authentic cultural artisan textile products?

RQ3) Are there innovations suggested to the supply chain for cultural textile products from consumer preferences?

Cultural Textile Products

Consumers purchase fair trade products due to a high level of handcrafted workmanship and high product quality (Dickson & Littrell, 1996, Kim et al., 1999; Lee & Littrell, 2006).

Textile artisans may adopt a product strategy to follow cultural traditions in color, embroidery, fabric, and construction techniques for the U.S. target market (Littrell & Miller, 2001).

Garments held greater potential for purchase when they had familiar overall garment and fabric features compatible with participants' wardrobes. Their findings suggested a product development strategy to extend product attributes of color, fabric, construction, and embroidery for a U.S. market. Fashion silhouettes and closures may require adaptation of cultural embedded products (Kotabe & Helsen, 1998). Olson (1999) reported international clients of Guatemalan weaving cooperatives actually prefer irregularities in artisan textiles because they appear unique, noncommercial, and have an indigenous quality.

In Guatemala and Peru, textile artisans reach their market by traveling to local markets to sell their textiles to tourists. Fair trade organizations are another option as they work with textile artisans by purchasing and selling their products through their organizations. Fair trade organizations must acquire marketing expertise for modifying products to cross cultures and achieve sales (Littrell & Dickson, 1999). Knowledge of current market trends and consumer

preferences regarding cultural textiles products may expand access to global markets (Lynd, 2000).

The productive base of artisan textiles in Guatemala is composed of 700,000 to 900,000 weavers, most of whom are indigenous women from socially marginalized, low-income households. These women combine back-strap weaving with other economic activities. Many of the retail businesses in the popular tourist market channel operate as microenterprises (Dunn & Villeda, 2005). Typical products are woven strips of textiles that are used as table runners, placemats, napkins, pillows, and bags.

Peru is known for their handcraft of weaving and knitting of woolen yarns. The wool is produced from alpaca, llama, and sheep in the highlands of southern Peru. Textiles are woven or knitted from handspun yarn from animal hair in the community (Rowe & Cohen, 2002). Typically, women's shawls, men's ponchos, and bags are decorated with lengthwise patterned bands including symbolic designs of the Inca tradition.

Sustainability-Oriented Innovation

This study seeks to explore the process of product development of cultural textiles embedded into contemporary products. Cultural textile artisans have limited resources and knowledge about product preferences and lifestyles of potential customers in the global marketplace. Research based guidance in product design decision making with cultural artisans may develop strategies to innovate the supply chain to enter new markets (Littrell & Miller, 2001). Klewitz and Hansen (2014) describe Sustainability-Oriented Innovation (SOI), as a process toward sustainability with relative incremental improvements in process, product, and organizational innovations. By creating more sustainable product design and development processes, SOI may be successful in niche or mass markets (Schaltegger & Wagner, 2011).

Sustainable-oriented innovation (SOI) provided a conceptual framework for textile and product design to develop products for this exhibition and study. Klewitz and Hansen (2014) developed an integrated framework on innovative practice in terms of strategic sustainability behaviors and types of SOIs. Figure 9 displays the integrated framework for sustainability-oriented innovation (SOI) practices with strategic sustainability behaviors to increase efficiency and shorten time of production with innovative efforts at process and product innovation.

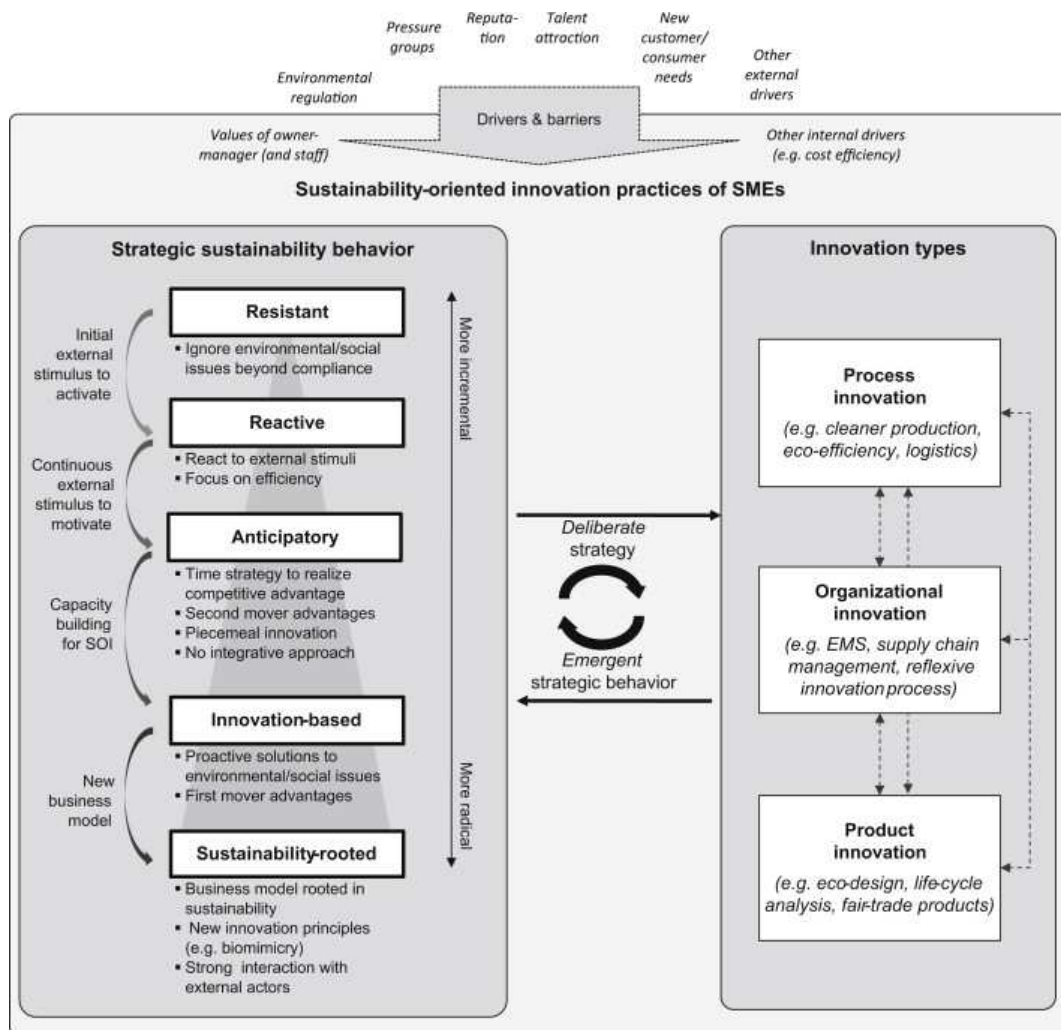


Figure 9. Integrated framework of Sustainability-Oriented Innovation (Klewitz & Hansen, 2014).

Opportunities to innovate for sustainability received attention with the Brundtland report in 1987, which encouraged the importance of firms to create, redesign, adapt, and diffuse environmentally sound technologies (WCED, 1987). From this initial eco-innovation debate, a new stream of research on sustainability-oriented innovations (SOI) with a broader focus on environmental, social, and economic dimensions was initiated to integrate the design of new products, processes, and organizational structures (Hall, 2002; Rennings, 2000; Schaltegger & Wagner, 2011; van Kleef & Roome, 2007).

Co-Design

Market pull innovation occurs when designers observe users' needs, analyze the needs, and propose a solution to meet user needs. In this source of innovation, users may propose a solution to their unmet needs, which occur in co-design. Innovation in market pull is incremental and emphasizes new product designs using existing technologies targeted toward existing markets. Incremental innovation might be found in an apparel company using more environmentally friendly materials (product) and providing better working conditions for production workers (process) (Verganti, 2008).

To assist cultural textile artisans in understanding and interpreting fashion trends and consumer tastes in a global marketplace, the process of co-design was initiated. As a process of collaborative design thinking, co-design involves joint inquiry and imagination in which diverse people explore and define a problem and collaboratively develop and evaluate solutions (Steen, 2013). Participants are able to express and share their experiences and negotiate their roles and interests to jointly create new products and positive change. Co-design presents an opportunity to implement new processes and textile products with cultural artisans to create textiles incorporated into expanded product offerings to increase sales in the global marketplace.

More than 50% of new products failed to meet financial expectations due to lack of involvement with the customer (Ogawa & Piller, 2006). Similarly, Cooper and Kleinschmidt (1987) reported 35% of new products failed to meet financial goals due to not meeting customer wants and desires. The co-design process offers companies and customers opportunities to learn and solve problems collectively and develop a design outcome with deeper consumer satisfaction than traditional product centric offering to passive consumers (Niinimäki & Hassi, 2011). Co-design may be a beneficial tool to help producers predict customer wants, desires, and purchase behavior. In co-design, a customer or client is involved in the product design with the producer in the form of developing sketches or computer aided design. The producer uses this feedback to explore the possibility of developing the product.

To differentiate between designers and customers' perceptions of products, Chamorro-Koc, Popovic, and Emmison (2008) compared visual representations of designers and users. The study found designers did not describe the experience of using the product. In contrast, users described the experience of using the product instead of its visual representation. There are different perspectives in approaching product design, which may validate the use of co-design.

The co-design process incorporated incremental innovations in the process of backstrap weaving to produce smaller pieces of hand weaving into products instead of weaving an entire product. It was important to develop textiles with colors attractive to global consumers while allowing cultural artisans the freedom to design and create textiles important to their tradition, craft, and culture. Color inspiration given to cultural artisans was determined by research in color trend research from fashion trend organizations. Co-design was integrated into the design process through digital pictures of color combinations, visual inspirations, and technical diagrams for the shape of weavings and embroideries.

The co-design process with Maya Traditions in Panajachel, Guatemala began with research of fashion trends and color. Color inspirations were communicated with digital technology to the weaving organization and thread combinations were chosen according to color by the researcher (customer) then shared with specific weaving groups, producers (See Figure 10).



Figure 10. Color inspiration sent to fair trade weaving group in Guatemala.

A technical diagram drawing was prepared for the weavers to understand the number of weaving squares and dimensions for the weaving with the color choices (See Figure 11). The weaving strip included eight weaving designs of 6” by 6” surrounded by one-inch black borders, each to be set into a pillow cover design or incorporated into apparel. Weavers created cultural designs with weaving patterns of their choice in the selected yarn colors according to the weaving diagram. Each strip woven on the backstrap loom had eight weaving design motifs that were worked into products for exclusive limited edition products. The smaller weaving motif inset into a contemporary product allows an exclusive and higher priced product for the market.

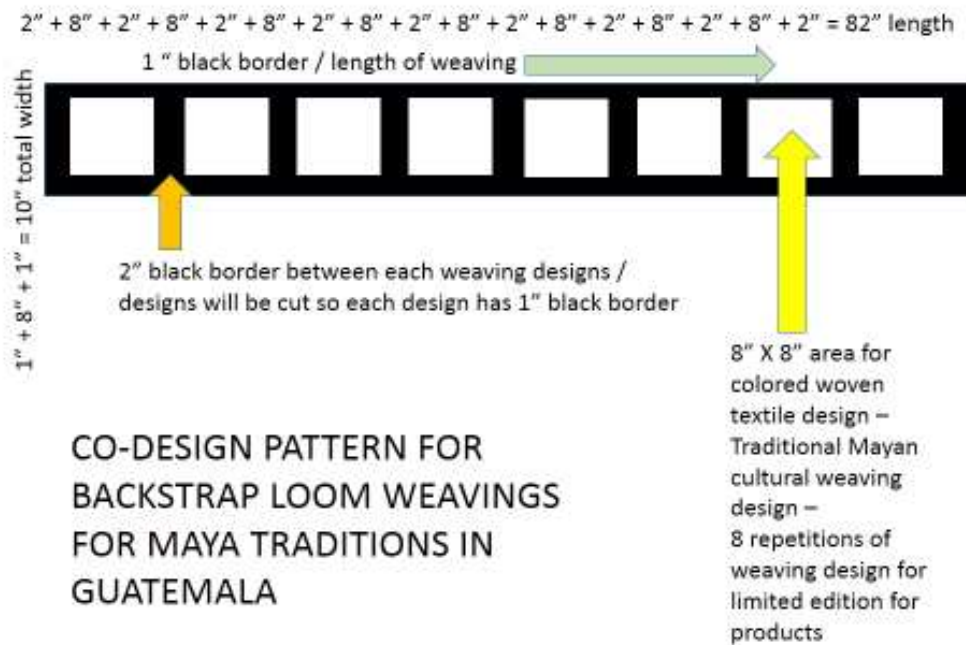


Figure 11. Weaving diagram for co-design of cultural textiles back strap weaving with Maya Traditions, Guatemala.

The weavers used the same yarn colors in three to four different weaving strips to create colorways for the products (See Figure 12). All of the decisions around the design of products incorporated principles of sustainability. The Guatemalan hand woven piece was sewn onto a cotton muslin backing and then strips of hemp fabric or hemp/silk fabric were sewn to frame the backstrap woven textile. Strips and patterning of the pillow face incorporated principles of zero-waste of materials.



Figure 12. Maya Traditions woven patterns on black background inspired by color inspirations.

Products were constructed and sewn locally in the U.S. using contract sewers who had been displaced as industrial sewing operators from factories. Utilizing U.S. contract sewers produced higher quality in the product's construction as they are trained in high quality standards of production. The production sewer centers the backstrap woven textile into the front of the pillow with quilting techniques to give the textile a finished edge on the uneven selvage edge. High quality is accomplished with seam finishes as well as placement of a zipper. Production in the U.S. allows for incremental improvements to the process to assure high quality standards. The hemp fabric and the pillow forms were sourced from in-state companies to save shipping costs and maintain standards of sustainability in the supply chain.

During product development, costing takes into consideration an estimate for an acceptable retail price for the consumer. The pricing of products includes the following: 1) a fair wage for the hand weaver, 2) a fair wage for the U.S. sewer in constructing the pillows, 3) the cost of environmentally friendly fabric (hemp, silk, wool, or hemp blends), 4) the cost of environmentally friendly pillow forms, 5) a profit for the social enterprise, and 6) a donation

from each sale to the weaving organization for health and education social programs for the weavers. A key principle for this social enterprise is pricing the product to provide funds to ultimately improve the community in which the weavers are located.

Methods

Fifty-one products were presented in the exhibition in three major categories. The first category was co-designed textiles with artisans in Guatemala and Peru and designed into contemporary products (21 products). The second category was authentic hand woven cultural textiles co-designed into products (15 products). The third category was cultural textiles designed into products by the cultural textile artisans in Guatemala and Peru (16 products). Six categories regarding function of products were included in the 51 products in the exhibition:

- 11 apparel products
- 11 fashion accessory products
- 6 home décor framed art products
- 16 home décor pillows
- 3 home decor table products
- 4 furniture products

Paper and pencil surveys were collected from people viewing the exhibition for 60 days on a voluntary basis with responses from 271 completed surveys. The exhibition was open to the public Monday through Friday from 9 a.m. to 4 p.m., with free admission. Students in courses related to fashion industries, merchandising processes, fiber arts, and consumers in the marketplace were asked to complete the survey while viewing the exhibition. A student fair trade group on campus viewed the exhibit and participated in the survey as well as non-students visiting the exhibition.

Viewers of the exhibition experienced the products in various sensory modes. Information and pictures regarding the products and cultural textile artisans, weaving groups, and weaving and dyeing processes were displayed. Viewers were able to see and touch the intricacies of the cultural textiles to understand the complexity of the weaving, knitting, or embroidery. For accurate presentations of colors, products were displayed under museum quality halogen lighting. A video presentation played during the exhibition with pictures of the artisans, their culture, and the landscapes of each country accompanied by music. This experience enhanced the opportunity for consumers to assess garment and product attributes important to their preference, acceptance, and willingness to own (Littrell & Miller, 2001).

Qualitative methods were used to analyze data collected from three sources. The first source of data was written descriptions from the survey instrument of participants viewing the exhibition: “Choose one product in the exhibition you would most like to own. Write the number shown on the product and describe what you find most interesting and attractive about the product”. The second source of data was the transcription from a one-hour video recorded during the exhibition by the researcher discussing the textile and product design and development of each product in the exhibition. The third source of data was public blog posts and responses from a student designer who worked for six weeks with the cultural weaving organization in Guatemala to assist with the co-design process and new product design.

Data were open coded with a line-by-line analysis to compare similarities and differences. Constant comparison was utilized as a systematic method of comparing concepts against one another to see how they relate to a similar phenomenon (Strauss & Corbin, 1998). Axial coding allowed the researcher to make connections among concept categories and subcategories and selective coding identified emergent themes (Dey, 1999; Strauss & Corbin,





1998). Data from the video transcripts and blog posts were open coded and analyzed with constant comparison process.





Trustworthiness and dependability of the analysis were increased with the use of two audit coders with design and fiber arts backgrounds. An interrater reliability coefficient was calculated on agreements of the coding of the written responses from the survey. The number of agreements by the three coders divided by the total number of responses, resulted in an interrater reliability coefficient of 93.73%, which is acceptable for qualitative research (Touliatos & Compton, 1988).



Results and Discussion

The results of frequency analysis of 266 responses for participants' selection "Choose one product in the exhibition you would most like to own" are displayed in Table 1 with 10 products accounting for seventy-five percent (75.9%) of product preferences. At least one of the participants selected Forty-one of the 51 products in the exhibition. Twenty-four (24) product preferences were from Guatemala and seventeen (17) of the selected products were from Peru. The breakdown of function categories was: 11 apparel (69.6%); 4 furniture (12.2%); 12 home décor pillows (6.4%); 7 fashion accessories (5.7%); 4 home décor framed art (3.1%); 3 home décor table products (1.5%).

Table 1. Frequency analysis of participants' product preferences for "the product you would most like to own".

Prod #	Function	Co-Design/ Authentic	Frequency	Valid Percent	Color / Country	Photo of Product
P42	Apparel Dress	Artisan Textile / Co-designed product - designed by U.S. undergraduate design student	47	17.7	Muted Natural Color with Contrast Peru	
P47	Apparel Dress	Co-Designed textile / Co-designed product- designed by U.S. undergraduate design student	42	15.8	Muted Natural Color Peru	
G2	Apparel Dress	Authentic Textile Co-designed product - designed by U.S Designer in New York	28	10.5	Muted Natural Color Embroidered Flowers Guatemala	
G16	Apparel Coat	Co-designed textile / Co-designed product- designed by U.S. designer/ researcher	22	8.3	White Contemporary Blue Pocket Guatemala	

G20	Furniture Table	Cultural textile / Co-designed product – designed by researcher	17	6.4	Bright Color Guatemala	
G28	Apparel Wrap Skirt	Artisan textile / Artisan Product – made by artisans in Guatemala	14	5.3	Muted Natural Color Guatemala	
P40	Apparel Tights	Co-Designed textile / Co-designed product - designed by U.S. undergraduate student	10	3.8	Muted Natural Color Peru	
P46	Sofa Shawl	Artisan Cultural Textile – Woven by Peruvian artisans	8	3.0	Natural Fiber Color – Alpaca Peru	

G1	Apparel Jacket and Pants	Artisan Textile / Co-designed product - Designed by researcher	7	2.6	Muted Natural Colors mixed with Bright Guatemala		
60	Apparel Apron	Authentic Cultural Textile Product	7	2.6	Dark Natural Dyed Color Peru		
			Total	75.9			

Consumer experience of co-designed and artisan textile products

Written responses of “what you find most interesting and attractive about the product” for products selected for ‘would most like to own’ contained personal and emotional experiences by the participants as to how they would use and enjoy the product. Qualitative analysis of the participants’ written responses found color, shape, and fashion trends important to product preferences. References to intricate patterns were defined by participants as ‘tribal’, ‘ethnic’, and ‘native’.

Trend, fashion, style, color contrast, and the versatility of how the product can be worn as apparel and fashion accessories were the most important considerations when selecting a product to own. A word cloud was developed with NiVivo software of participants’ written descriptions of the product they would most like to own. The word cloud is based on word counts from participants’ written response for “what you find most interesting and attractive about the product’ is shown in Figure 13.



Figure 13. Word cloud for participants' written response for "most interesting and attractive about the product" selected for 'most like to own'.

Four major themes emerged from qualitative analysis of the data for the written description of "what you find most interesting and attractive about the product": 1) Modern mix with Traditional, 2) I Love the Detail, 3) Pop of Color, and 4) Versatility.

Modern Mix with Traditional

The first theme found for the consumers' written description of products selected for 'most like to own' was 'Modern Mix with Traditional'. This theme encompasses the purpose of the study to understand the process of co-design. Participants expressed great interest in the "mix" of "traditional", "tribal", and "ethnic", with "modern lines", "silhouettes", and "shapes"

found in 152 of the responses. Table 2 displays a sample of the responses of ‘mix of modern and traditional’ described primarily for apparel product preferences.

Table 2. Participant responses for ‘Modern Mix with Traditional’.

Product #	Response for “most interesting and attractive about the product” (Participant #)
G2	I love the shape of this dress, and I think it was such a cool idea to mix a sleek, modern dress with the traditional embroidery. I also love my color combination. Using the embroidery here makes it seem more relevant in a sense - it fits with our fashion culture while showcasing the cultural tradition (Participant 27)
P42	It is very modern with a traditional Peruvian touch (Participant 32)
P42	It is an interesting use of color and silhouette. It is also something I could wear. The textiles mixed with the modern silhouette makes the dress very interesting (Participant 71)
G2	The color of the dress is nice because of the subtle pattern, the sleeve embellishment looks appropriate, the embroidery on the bottom is gorgeous and the shape is cute & modern (Participant 74)
P42	I would love to own P42 because the green mixed with the beautiful textile on the front and back has amazing contrast. Stylistically, it is very modern and the fit looks impeccable. I also love the feel of the fabric (Participant 86)
P42	This Peruvian textile is beautiful as it is unique. I love how it has a modern twist using color blocking. It's a sort of aqua color with a lovely patterned design that looks very tribal (Participant 101)
G2	I find the use of tribal patterns with the addition of studs and embroidered flowers appealing and creative. I like how the traditional fabric is used in a modern dress with a simple silhouette that is functional (Participant 146)
G1	Integration of fabrics, designs, and trims; Modern, stylish wearable jacket design. Very wearable, very interesting; very unique; very "Guatemalan" (Participant 194)
G16	Modern. Great textural mix (Participant 197)
P47	It is modern but still has an ethnic feel (Participant 206)
G2	I found the floral embroidery at the bottom very attractive and I thought that the buttons down the side gave the dress a modern appeal (Participant 222)
P42	The color palette and the mixture of line & texture has so much visual weight & interest I just want to keep staring. It is also in a more modern silhouette which could be worn today - that's a bonus (Participant 228)
G28	The whole outfit is modern yet incorporates the textiles as not in a way that detracts from their cultural heritage (Participant 253)

I Love the Details

The second theme found was 'I Love the Details'. The phrase "I love" was used in 166 statements and most of the responses in this theme described one of the 'dress' garments in the exhibition. In this theme, love was an emotion, an experience for the consumers of the product. The use of the word 'love' was found in the attributes of the garment. Responses included variations of "I love the color", "I love the pattern", and "I love the design". One participant describes this experience as, "I absolutely love this dress because the colors are vibrant and show off the flowers at the bottom well" (Participant 107). Another participant wrote, "I love the colors, use of line, decorative flowers, braided shoulder straps, and thickness of materials" (Participant 236).

This theme includes appreciation for the style of the apparel. Shape and silhouette were commonly described as structure, simple lines, and simplicity of the garment as "I love how classy yet simple the design of the dress is" (Participant 8) and "I love how simple and clean cut the white coat seems and how it showcases the beautiful textiles incorporated into the back" (Participant 103).

Pop of Color

The third theme of the consumers' experience was 'Pop of Color'. Color was used in survey responses 164 times. Many of the responses discussed the contrast of colors and used the word 'pop'. For example, "I love the white color of the coat, with blue pattern pockets that pop" (Participant 96) and "the colors, patterns, and texture when paired with the tiffany blue, pop out and are so beautiful" (Participant 86). Participants noticed the contrast of colors in co-designed products with contemporary color trends especially when these textiles were framed with black, cream, and/or neutral colors. Complementary colors were described as most interesting and

attractive, “Mixing the mint green which is a very popular color right now, with the red and orange is a different yet elegant mixture”(Participant 270). Survey participants wrote about colors being on trend and used descriptions of “eye-catching” (Participant 13), “attracts the eye” (Participant 223), “a new twist to the trend of color blocking” (Participant 101), and “colors of the motifs are interesting without being too loud” (Participant 181).

Versatility

The fourth theme of consumers’ most interesting and attractive product descriptions was ‘Versatility’. Versatile was used in the responses as well as sub-themes of “I would wear” and “Functional”. Many of the responses given for apparel products included statements regarding wearing the garment. Common responses included “it looks like something I would wear”, “it is something I would see myself wearing”, “makes me want to wear it every day”, “something I would wear for sure”, “I would definitely wear this”, and “I would wear it”. Functional was included in responses for apparel, fashion accessories, and furniture “The functionality is its best feature. It can be set inside and out. It looks very durable and the colors look like they can go well in a variety of settings.” A functional response for a product preference for a table was, “I find this product most interesting because it is beautiful and functional. I love furniture and this table is the perfect size, perfect colors and looks unique and unlike any table I’ve seen anywhere else” (Participant 116).

Designer Experience with Exhibition Textiles and Products

The designers’ experiences incorporated perspectives of working with the artisans for co-designed cultural textiles in developing new product designs for the exhibition. The researcher conducted qualitative analysis on the transcript describing the design and development of the 51 products in the exhibition and public blog posts of the design student who participated in the

exhibition during her internship with the weaving organization in Guatemala. Figure 14 displays the word cloud of the transcript and blog posts using NiVivo software.



Figure 14. Word cloud of designers' video transcript and blog posts.

Analysis of the verbal transcripts and written blog posts of working with design and development of artisan cultural textiles and products for the exhibition found four themes: 1) 'Textiles tell a story', 2) 'Women work hard', 3) 'Design collaboration', and 4) 'Sustainability'. Results found an emphasis on cultural artisans producing and incorporating traditional textiles with limitations of size, uneven edges, and unique colors into a contemporary product that would be functional and well accepted by the consumer. The researcher and student designer focused

on the details of each product, especially in terms of sustainable textiles and processes of weaving and construction. The weaving organization and the process of developing products implemented incremental improvements to innovate the process of incorporating cultural artisan textiles into new product categories and designs based on this research. The experience for the researcher and student designers of products for this exhibition had a much different perspective than the findings of participants' experiences and written descriptions of product preferences.

Textiles Tell a Story

The first theme, 'Textiles tell a story', includes the weavings, the weavers, and the weaving communities. Each weaving community is unique in their group dynamics, which requires recognizing what these women communicate through their textiles. The women communicate through their weaving designs with common motifs, weaving techniques, and signature colors from various weaving groups and communities. Weaving groups have worked together for a long time within their groups they are talkative and full of laughter.

The student designer wrote, "In all of their meetings there have been children present and women often weave with their children wrapped on their backs". They appreciate the symbolism in their weavings and enjoy creating traditional textiles techniques. The student designer reported, "I have so much respect for these women who pass down the tradition of backstrap weaving from one generation to the next. Cecelia learned how to weave from her mother when she was ten and her daughters were able to help me when Cecilia was busy taking care of her baby".

Women Work Hard

The second theme found in the transcripts and blog posts was 'Women work hard'. Women in Guatemala have been fighting for their rights to obtain equality in recent years but it

is a huge struggle for many to stand up to their husbands. Other women in the weavings communities are single and work on their own after their husbands leave. “The women live in extreme poverty and may reside in ugly situations, but they are capable of creating such incredibly beautiful works of art” (Textile Trekker, 2014, p.4).

Weaving is a very complicated time consuming process. The backstrap loom has limitations of width dimensions for woven textiles. Initial communication during the process of textile co-design is vital for the weaving groups. Guatemalan weavings are unique because backstrap weaving takes skill with the body holding the tension of the warp yarns while hands lift the threads with sticks to weave the pattern with the cross yarns. Samples are time consuming to produce for both the weaver and the weaving organizations and must be approved before any revenue is received. Photos of the first weaving samples are sent to designers for approval so the women can continue to weave on the same weaving loom to save time and effort. The student designer state, “when the artisans work with brocade, working at the cultural weaving organization office proves beneficial so changes can be made to the design more easily”. If a final product is not what was ordered, the weaving organization cannot accept the product and the women weavers will not be paid for their weavings.

Design Collaboration

The third theme for the designer experience is ‘Design Collaboration’. In Guatemala, designers can choose which weaving techniques will best meet their needs for textile design. Weaving yarns matched color palettes sent from designers. The student designer wrote about her experience in matching threads to color stories, “I had fun doing this, but it can also be difficult to make decisions about someone else’s vision, so I am thankful for the speed of technology that allowed me to send pictures to the designer for confirmation”. Specific weaving structures,

weaving skills, quality control, and schedules for delivery differ with weaving groups in different communities. Often, the weaving organization is unable to understand the ultimate customers for the weavings or products from emails and images from the designers.

Sustainability

The final theme found in the exhibition transcripts and posts was ‘Sustainability’. In product development for this exhibition, sustainability was considered at every level. The designer worked with fibers and textiles that are considered sustainable including hemp, silk, wool, and Tencel. To highlight the cultural artisan textiles, sustainable fabrics were utilized in various products. Vintage textiles were repurposed and developed into new products. For example, the chair was made of a vintage huipil and the jacket was designed from a vintage corte or skirt. Attention was given to creating products to minimize waste during cutting and sewing operations.

The experiences of consumers and designers of co-designed cultural artisan textile products were similar to previous studies that found consumers described the experience of using the product (Chamorro-Koc, Popovic, & Emmison, 2008) versus designers who were focused on details of the product and did not describe experiences. The different perspectives may validate the use of co-design, as there were many opportunities to learn and solve problems collectively, especially between designers and artisan weaving organizations to provide deeper satisfaction with the design process (Niinimäki & Hassi, 2001). The study included many different types of products in various function categories. Results from this study found that cultural textile artisans might expand product offerings. Expanding product categories may increase sales in the global marketplace as reported by Steen (2013).

Consumers preferred co-designed cultural textile products to authentic cultural artisan textile products with six of the top nine selected products being co-designed. Apparel products had the highest percentages of consumer preferences and affirmed the importance of fashion trends related to consumers' tastes and lifestyles (Littrell & Miller, 2001). This was found in selections of the tank dress and tights with silkscreened Peruvian textile designs. These two products reflect an active lifestyle and current fashion trends and were chosen because of the traditional pattern. The theme of 'Modern Mix with Traditional' was evident in preferences. These selections reinforce adopting a product strategy to follow traditions in color, embroidery, and fabric (Littrell & Miller, 2001), while adapting products with fashion silhouettes and closures (Kotabe & Helsen, 1998). These findings highlight the potential for purchase when cultural textile garments are compatible with consumers' wardrobes.

Sustainability-oriented innovation provided a framework for new textile and product design. Consumers preferred products which designers had applied sustainability in materials, construction, and innovation of the weaving process (Schaltegger & Wagner, 2011). Apparel and furniture products were preferred by participants instead of home accessories, bags, and fashion accessories that are typical product offerings of cultural textile organizations.

Implications and Future Research

The implementation of the co-design process was positive according to consumer preferences. This process may assist cultural weaving associations in innovation of products and organization. The process of communicating color trends and allowing cultural textile artisans to produce traditional designs may provide incremental improvements in the product development process that holds potential for increased access to a global market (Lynd, 2000). Smaller sized weaving insets into contemporary products received high levels of support from participants.

Preferences for furniture products provide support for new product development and incremental improvements in new product areas to expand market demand for cultural textile products.

Sustainability-oriented innovation incorporating the process of co-design provided a theoretical framework intertwined with practice (Leavy, 2009). This practice-based research found joint creation of value with the weaving organization and the researcher, an expected result of co-design (Prahalad & Ramaswamy, 2004). Co-design provided a framework for the researcher and student designers to work with cultural handcraft organizations to innovate the design process and fair trade supply chain.

In reference to the experience of consumers and designers of co-designed cultural artisan textile products, results found different experiences for users and designers. Consumers (users) described emotional experiences when selecting a product preference. Emotional experiences included a love of mixing traditional with modern in wearing silhouettes that had clean and simple lines in functional and comfortable apparel. Participants described furniture products in emotional terms of function and enjoyment. The researcher and student designers (designers) emphasized the details of textile design and collaborating with the artisans to speed up the process of creating process and improving the work experience for cultural artisans. Designer experience focused on product development with sustainable materials and innovating the process involved with the supply chain of fair trade products.

The research found a difference between consumer preferences of co-designed textile products and authentic cultural artisan textile products. Consumers preferred products in the exhibition that incorporated co-design in the creation of the textiles and the products to products that developed by cultural textile artisans. Design collaboration between cultural textile artisans

and designers of contemporary products will result in products for the global market with increased market demand.

Sustainability-oriented innovation of reducing the size of back-strap hand woven textiles of contemporary color combinations woven with tradition designs were preferred by participants in this exhibition. Modern silhouettes and simple lines in the products with a mix of traditional textiles and patterns were preferred as in previous studies (Littrell & Miller, 2001). Color was an important element in participants' description of their product preference. The co-design process incorporated in textile and product development for this exhibition is beneficial to producing products for contemporary consumers to meet their tastes and lifestyles (Lynd, 2000).

The process of hand woven backstrap textiles continues to be a slow process, however, the weaving layout of small textile insets allows for quicker and increased production by artisans. The highly skilled weavers continue to develop traditional designs in new color combinations and become a tangible reference for counting threads for other artisans within the same weaving community. With this proven process of co-designed textiles inset into contemporary apparel, home décor, and furniture, the uneven edges of the weavings can be sewn into other textiles that increase affordability to an average buyer with high quality standards (Lynd, 2000).

The innovations suggests the fair-trade supply chain for cultural textile products could include design collaboration with contemporary trained designers to assist cultural artisans in developing textiles to meet the taste and lifestyles of contemporary consumers. Co-design may shorten steps in the supply chain to develop textiles and products to meet end-consumer needs and desires. Participation in this research led to a student designer being selected as an intern with the weaving organization in Guatemala. The student observed and facilitated the co-design

process for new textile development with the researcher. After the internship, the organization hired the student designer for Product Development and Sales Manager. In professional practice at Maya Traditions, she continues to innovate the process of co-design to expand opportunities for the artisan weaving groups and provide fair wages for the women in the weaving communities. Maya Traditions now uses a questionnaire for design partners who are interested in co-designing a textile for size, layout, weaving techniques, and yarn colors. Maya Traditions is working to improve their quality and style of textiles for contemporary customers who are trend conscious.

The co-design process continues in practice by the researcher in an emerging apparel and home décor e-commerce enterprise incorporating the findings of this study. Future practice-based research plans to innovate processes to develop new cultural textile products in categories of furniture and apparel. Further research in sales of cultural textile products with co-designed cultural textiles will confirm consumer preferences of contemporary color combinations, product design, and purchase intention.

CHAPTER 3

CONSUMER PREFERENCES OF CULTURAL TEXTILE PRODUCTS

FROM GUATEMALA AND PERU: DESIRE FOR UNIQUE CONSUMER PRODUCTS

Introduction

Access to global markets through using the Internet allows handcrafted cultural textile products the opportunity to reach new consumers. Consumers now have access to unique cultural textile products formerly found only in foreign markets. It is important to understand consumer preferences of cultural textile products to sustain the livelihood of textile artisans. Preferences regarding product attributes of uniqueness, color, function and quality may assist cultural textile artisans to design and produce products that are considered unique with high market demand.

Apparel and textile companies producing handcrafted textile products and apparel have recognized the importance of fashion trends to influence and inform their product development (Littrell & Miller, 2001; Paige-Reeves, 1998). Communicating current fashion trends to cultural textile artisans is vital to help them understand consumer tastes and lifestyles. Building strong artisan enterprises requires training artisans for business and design skills according to specialists in international craft marketing (Littrell & Miller, 2001).

Craft production for commercial sale is becoming an integral component of communities' economic activities especially in rural areas. After agriculture and tourism, artisan work provides a needed source of income for many people in less developed countries (Basu, 1995). Proponents of artisan product development find craft persons can work and produce income while achieving social and cultural goals of sustaining livelihoods with market demand for artisan-handcrafted products, remaining in traditional villages, and preserving cultural meaning through their crafts (Basu, 1995; Bhatt, 2006; Grimes & Milgram, 2000; Liebl & Roy, 2004). For many artisan

enterprises, participation in regional and export markets is essential to their survival and sustaining their crafts and skills (Littrell & Dickson, 1999).

Cultural artisans seek to develop creative, innovative, and market-driven products to a diverse customer base (Aageson, 1997). With the Internet, consumers and producers of cultural handcrafted textile products have flexible, fast, and inexpensive ways of participating in the global marketplace (Simeon, 1999). With increased globalization, handcrafted artisans' products are commoditized and compete with goods from all over the world (Dash, 2011).

The commercialization of artisan production is expanding as the world market for handcrafted objects grows (Grimes & Milgram, 2000). The success of handcrafted products is dependent on artisans producing quality products in keeping with the tastes and preferences of consumers. Increased commercialization of products for export markets require artisans to include artistic craft and ethnic values with a touch of innovation (Dash, 2011). The need for uniqueness may have a positive influence on the demand for new products (Reinders, et al., 2008). This may be true especially for artisans producing new products for export to attract an expanded customer base.

This practice-based research incorporates innovative product design in collaboration with cultural textile artisans involved in the creation of textiles and products. Biggs and Buchler (2008) report practice-based projects include the production of original artifacts in addition to a research component. Emerging tools of practice-based research addresses research questions in holistic and engaged ways in which theory and practice are intertwined (Leavy, 2009).

The goal of this study was to determine consumer preferences of uniqueness for handcrafted cultural textile products from Guatemala and Peru. Fifty-one products were displayed in a 'Journey to Sustainability' exhibition in a university gallery. The exhibition

displayed products from six product areas of function: 1) apparel, 2) accessories, 3) framed textiles, 4) pillows, 5) tabletop, and 6) furniture. The exhibition allowed visitors to see and touch the products while gaining information about the handcrafts and artisans. The artisans who produced the handcrafted cultural textiles were associated with weaving organizations in Guatemala and Peru. The significance of this study to understand global consumer preferences for uniqueness related to color, function, and quality of cultural textile products.

Cognizance of consumers' product preferences may provide cultural textile artisans and organizations who work with them information to increase demand and sales to sustain their livelihoods. This research evaluated new product categories and possible solutions to incorporate cultural handcrafted textiles into products to increase consumer demand. Sustainability-oriented innovation implemented process improvements working with cultural textile artisans to increase time and production of backstrap woven textiles (Klewitz & Hansen, 2014). Considerations of sustainability of materials and improvements in product development guided the textile and design process (Engel-Enright, 2016). The researcher made decisions considering sustainability in the choice of accompanying textiles and repurposing furniture and vintage cultural textiles.

Desire for Unique Consumer Products

The desire for unique products may relate to consumers' product preferences regarding attributes of cultural handcrafted textile products. Individuals with a high Desire for Unique Consumer Products acquire and display material possessions to develop a self-concept that is different from others (Belk, 1988; Lynn & Harris, 1997; McCracken, 1986; Richins, 1994). Consumers may wear apparel and accessories or display home décor products that are not available locally and found while travelling to other countries. Snyder and Fromkin (1980) posit the desire for unique products drives consumers to maintain a sense of distinctiveness within

their social group. This desire is defined as “individual’s pursuit of differentness relative to others that is achieved through the acquisition, utilization, and disposition of consumer goods for the purpose of developing and enhancing one’s personal and social identity” (Tian, Bearden, & Hunter, 2001, p. 50).

Creating and expressing a unique self-concept, through the acquisition of unique products, are powerful emotions that drive human behavior (Dittmar, 1992). An individual’s self-concept may be altered by the accumulation of different products and self-differentiation demonstrated through purchases (Grubb & Hupp, 1968). High desire for unique products may have a positive association with preferences for cultural textile products that increase market demand. Cultural handcrafted textile products may be marketed as a scarce product because of the limited number of cultural artisans who are continuing with their crafts. A scarce product in Western societies has a greatly increased value (Snyder & Fromkin, 1980) and is cannot be easily copied or duplicated (Fromkin, 1970). Preferences for scarce products relates to greater motivation and need for uniqueness (Fromkin, 1970).

Consumers differ in the extent they hold a personal goal for differentiation or individualization with the acquisition and possession of consumer goods that few others possess (Harris & Lynn, 1996). This goal-oriented individual differentiation is the Desire for Unique Consumer Products (DUCP). This desire will manifest with an increased tendency to acquire and use products that are scarce, innovative, and customized and an increased tendency to shop at small, unique retail outlets.

Consumers prefer expressing uniqueness in socially accepted ways, which suggests they purchase products that incorporate a uniqueness appeal, such as clothing or jewelry. Material expression of uniqueness is particularly valued because it satisfies the need for uniqueness

without risking severe social penalties (Snyder, 1992). Consumers may acquire and display material possessions to develop a social image as one who is unique (Fisher & Price, 1992; McAlister & Pessemier, 1982).

Consumers seek new and different products and brands that differentiate themselves from others (Goldsmith et al., 2007). Companies that create multiple product options for consumers may better meet the preferences and allow consumers to differentiate themselves (Lancaster, 1990). Clothing, home furnishings, and recreational goods are marketed on the basis to express aspects of the self because they do not represent spending as a large proportion of disposable income as do houses and automobiles (Tian & McKenzie, 2001).

McAlister and Pessimier (1982) suggest a desire for unique products influences new product adoption and variety seeking behavior. In a study of college age students, Chan, Berger, and Van Bogen (2012) found everyday clothing choices signaled social identity and simultaneously conveyed individual desires for uniqueness to communicate differentiation. Previous research revealed consumers who have a need for uniqueness have a favorable attitude towards personalized apparel and novel products (Workman & Kidd, 2000; Halepete et al., 2009). E-shoppers with positive attitudes and DUCP had higher purchase intention toward e-customized apparel (Jang & Kim, 2012). Their study suggested target marketing of mass customization could be based on e-shoppers seeking unique products.

Cultural Product Attributes

Cultural products are goods that include crafts and arts that conserve heritage of traditional practices and industries. Consumers believe cultural products are unique and have visual appeal resulting in an increase in positive attitudes toward shopping for these products (Halepete et al., 2009; Shaw & Clark, 1999; Yu & Littrell, 2003). Cost, product quality, and

relevant information were major concerns to individuals purchasing cultural products and customization influenced consumers' intention to buy cultural apparel products. Studies have found consumers purchase cultural products due to a high level of handcrafted workmanship and high product quality (Dickson & Littrell, 1996, Kim et al., 1999; Lee & Littrell, 2006).

Customers with certain lifestyles may likely be drawn to a particular set of product attributes because of perceived functional or emotional relevance of these attributes to their desire for uniqueness. Lee and Littrell (2006) identified consumers of cultural products on the Internet were most interested in buying jewelry (67%), followed by fashion accessories (41%) and seasonal or holiday items (37%). In their study of 220 consumers of cultural product websites, customers asked for greater variety in product selection and lower prices.

There are five motivations for consumer selection of cultural products: 1) creating aesthetic experiences and meaning with the physical features of products, 2) viewing, touching, and learning about a product's structural and aesthetic qualities, which provides an inward, individualistic, and affective interaction with products, 3) enhancing daily life activities with products used for eating, cooking, playing, dressing, and decorating, 4) establishing self-identity and creating a personal style with products that differentiate the owner from others, 5) allowing consumers' connection with others, their communities, and ways of life through understanding artisan processes (Littrell & Dickson, 1999). "When products spark momentary surprise, delight, or diversion, the quality of life is enhanced" (Lee & Littrell, 2003, p. 358). Olson (1999) reported international clients prefer irregularities in the cloth, dye lot, and designs, because they give products an appearance of being unique, noncommercial, and have an indigenous quality.

Cultural textile artisans may adopt a product strategy to follow traditions in color, embroidery, fabric, and construction techniques for the U.S. target market (Littrell & Miller,

2001). In their study, 244 western consumers' preferences of designs from India of new pant and skirt designs found "artisans may need to break from tradition to customize the current apparel silhouette and fastening system to those current in the consumers' culture" (p. 83). Garments held greater potential for purchase when they had familiar overall garment and fabric features compatible with the participants' wardrobes. Their findings suggested a product development strategy to extend product attributes of color, fabric, construction, and embroidery for the U.S. market. Fashion silhouettes and closures may require adaptation of cultural embedded products (Kotabe & Helsen, 1998).

Cultural Textile Artisans from Guatemala and Peru

The weavers in Guatemala are well-known for backstrap weavings of cotton thread using bright colors incorporating ancient patterns and symbols. Martha Lynd (2000) researched Guatemalan indigenous weaving groups and suggested ideas to improve textiles designs for the global marketplace and improving systems to maintain high quality. Knowledge of consumer preferences and current market trends may expand cultural textile businesses and gain access to global markets (Lynd, 2000). Lynd established a working relationship with Maya Traditions, a non-profit organization, which supports weaving cooperatives in the Guatemalan highlands.

Yarn and weaving processes were invented in Peru before pottery at the beginning of agricultural practices. Peruvian textiles incorporated simple hand spun animal fibers and developed complex weaving (Roberts, 2014). Weaving traditions in Peru are passed down through traditional learning methods of observation and repetition. Peruvian cultural textiles feature traditional patterns and symbolic layouts and carry rare information among the indigenous people.

The demand for naturally dyed products by tourists reintroduced the art of dyeing in Peru. Ancient knowledge of the process of dyeing wools using natural materials almost vanished from the indigenous Peruvian culture because of the ease of dyeing and consumers' preference for brightly colored synthetic dyes. The resurgence of old methods of dyeing using local plants and minerals led to consultations with elders who remember the process to preserve the dye traditions (Roberts, 2014), so the color palette is much darker with muted natural shades.

This study developed cultural textiles with Maya Traditions in Guatemala for the exhibition. The Peruvian artisans producing textiles for this study were involved with every step required in making cloth, starting from shearing sheep and alpaca to finished textiles. The research seeks to understand the relationship of desire of unique products and consumer product preferences of cultural textile products from Guatemala and Peru for the following questions:

RQ1. What is the relationship of the Desire for Unique Products and consumer product preferences for uniqueness?

RQ2. Is there a positive association with consumer preferences for uniqueness and consumer preferences for color, function, and quality?

RQ3. Is there a difference between consumers who score high and low for Desire for Unique Consumer Products and their product preferences?

Methods

Participants were visitors to an exhibition of handcrafted cultural textile products from Guatemala and Peru in a university gallery. The exhibition was free to visitors and open Monday through Friday from 9 a.m. to 5 p.m. for a 90-day period. Participants experienced products in various sensory modes including narratives and photographs of the textile artisans, weaving groups, and weaving and dyeing processes (Lee & Littrell, 2003). Participants were able to see

and touch the intricacies of the cultural handcrafted textile products to understand the complexity of the weaving, knitting, or embroidery. Accurate presentations of color of the products were displayed under museum quality halogen lighting. This experience enhanced the opportunity for consumers to assess garment and product attributes important to their preference, acceptance, and willingness to own (Littrell & Miller, 2001).

A survey instrument was prepared to measure product preferences and scores for the Desire for Unique Consumer Products measures. The researcher received Institutional Review Board approval to conduct the study in the gallery (See Appendix E). Visitors to the exhibition received a consent letter describing the study and were asked to give written consent for the survey with contact information (See Appendix F). Paper and pencil surveys were collected from 271 respondents over 60 of the 90 days during the exhibition. The survey instrument is displayed in Appendix G and asked for product preferences for product attributes as well as 22-items related to cultural creative values and experiences.

Participants were asked to rank their preferences for 1st, 2nd, and 3rd in four attribute categories of uniqueness, color, function, and quality for products from Guatemalan and Peruvian sections of the exhibition. Participants were also asked to score the 8-item scale for Desire for Unique Consumer Products (DUCP) (Lynn & Harris, 1997). The DUCP uses a five point Likert scale of Strongly Disagree (1) to Strongly Agree (5). The DUCP was chosen to measure participants' desire for uniqueness because it is directly and more strongly related to consumers' attitudes and behaviors than the general Need for Uniqueness scale (Snyder & Fromkin, 1980).

The majority of the participants were female (86%). The majority of participants identified as members of the millennial generation (94%), born 1980 and after. A demographic profile of the sample is summarized in Table 3.

Table 3. Demographic characteristics of study participants (N =271)

Demographic		Frequency	%
Gender	Female	232	85.6
	Male	37	13.7
	No Response	2	0.7
Age	Millennial (1980 and after)	254	94.1
	Generation X (1965 - 1979)	6	2.2
	Baby Boom (1946 – 1964)	5	1.8
	Swing Generation (born before 1945)	5	1.8

Results and Discussion

The Pearson Correlation was conducted to test for internal consistency of the scale. All 8-items on the DUCP scale correlated with p values below 0.01. Correlations revealed medium to large effect size between .352 and .573. The exception was “I like to try new goods and services before others do” which when associated with “I am very attracted to rare objects” had a small effect size of .192. Mean scores of the eight items from the Desire for Unique Consumer Products are displayed in Table 4. Participants favored products as different, rare, and scarce. The high mean scores on these items may indicate a high preference for cultural handcrafted textile products considered as different and scarce.

Table 4. Mean scores for items in Desire for Unique Consumer Products (N = 271)

Item	<i>M</i>	<i>SD</i>
I enjoy having things that others do not	4.45	.87
I enjoy shopping at stores with different and unusual merchandise	4.29	.84
I am very attracted to rare objects	4.16	.86
I am more likely to buy a product if it is rare and/or unique	4.00	.97
I like to try new goods and services before others do	3.86	1.01
I tend to be a fashion leader rather than a fashion follower	3.76	.90
I would prefer to have things made-to-order than off-the-rack/shelf	3.46	1.14
I rarely pass up the opportunity to order custom features on products I buy	3.28	1.14

Rank order of product preferences were analyzed using multi-response group frequency for product selections of 1st, 2nd, and 3rd, for each product attribute of uniqueness, color, function, and quality for both Guatemala and Peru products. Participants' Guatemalan product preferences with highest frequency for uniqueness are displayed in Figure 15. The Guatemalan product with the highest frequency for uniqueness was a cream-colored contemporary coat with three hand woven squares of shades of blue and black weavings (G16). The cultural textile weavings were inset into the coat in front pockets and center back panel. The second and third product preferences were furniture items of a chair (G21) and table (G20). The top of the accent table had insets of small hand woven textiles of black and red. The chair featured a cushion constructed from a vintage huipile textile, a traditional blouse worn by indigenous Mayan women. The shape of the huipile was maintained and inset into hemp canvas to fit the repurposed rattan chair frame.



Figure 15. Guatemalan products with highest frequency for uniqueness.

Guatemalan products were coded for three categories for colors in the exhibition: 1) Bold & Bright; 2) Black & White Contemporary; and 3) Muted Vintage (Engel-Enright, 2016).

Participants' color preferences for Guatemalan products were 48% Muted Vintage, 25% Black & White Contemporary, and 22% Bold & Bright Colors. Product preferences for 'function' of Guatemalan products were 46% apparel, 20% furniture, 19% pillows, 11% tabletop, 2% framed art, and 1% accessories. As shown in Table 5, N represents the total responses for the sample of the multi-response frequency for 1st, 2nd, and 3rd rankings of product selections from the survey. The top five ranked product preferences were similar across all four product attribute selections.

Consumer preferences showed little difference when considering specific product attributes of color, function, and quality. In terms of the top five preferred products for uniqueness: two were similar for color, four were similar for function, and four were similar for quality.

Table 5. Multiple response frequency analysis of Guatemalan product preferences for product attributes (Product # G1 - G31)

<i>RANK</i>	<i>UNIQUE</i> (<i>N</i> = 799)	<i>COLOR</i> (<i>N</i> = 778)	<i>FUNCTION</i> (<i>N</i> = 784)	<i>QUALITY</i> (<i>N</i> = 757)
<i>1st</i>	Coat G16 (10.8%) n = 86	Dress G2 (8.0%) n = 62	Coat G16 (12.0%) n = 94	Coat G16 (16.5%) n = 125
<i>2nd</i>	Chair G21 (9.8%) n = 78	Top/Skirt G9 (7.7%) n = 60	Table G20 (10.8%) n = 85	Table G20 (8.5%) n = 64
<i>3rd</i>	Table G20 (8.6%) n = 69	Placemat G4 Chair G21 (7.6%) n = 59	Chair G21 (7.3%) n = 57	Chair G21 (6.7%) n = 51
<i>4th</i>	Top/Skirt G9 (8.5%) n = 68	Coat G16 (7.5%) n = 58	Bodice/Skirt G28 (6.4%) n = 50	Jacket/Pants G1 (6.5%) n = 49
<i>5th</i>	Dress G2 (8.3%) n = 66	Jacket/Pants G1 (6.7%) n = 52	Dress G2 (5.6%) n = 44	Dress G2 (5.7%) n = 43

Multi-response frequency analysis for uniqueness for the Peru products found a hand crafted tassel belt (P56, upper left), long poncho (P57, 2nd from left), and knit dress (P47, 2nd from right) received the highest rank percentage. These five products are shown in Figure 16. The dress (P42, right most) ranked 2nd in unique and color was co-designed by a design student who integrated hand-woven cultural textiles into the center front and back panel of the design. An authentic hand woven wool runner was draped over a leather sofa (lower left) ranked second in function and quality.



Figure 16. Peruvian products with highest percentage for uniqueness.

Peruvian products were coded for three categories for color: 1) Muted Vintage, 2) Natural Alpaca, and 3) Natural Plant Dye. Results of color preferences of Peruvian products were 47% preferred Muted Vintage, 41% Natural Plant Dye, and 12% Natural Alpaca. Product preferences for ‘function’ of Peruvian products were 58% apparel, 26% accessories, 8% furniture, 4% pillows, and 4% framed art. Belts and aprons were coded as accessories.

As shown in Table 6, N represents the total responses for the sample of the multi-response frequency for 1st, 2nd, and 3rd rankings of Peruvian product selections from the survey. The tassel belt, handcrafted by the textile artisans, was preferred for uniqueness and was selected 4th for color. The knit dress with Peruvian textile design silk-screen was selected 1st for function, 3rd for uniqueness and color. The long poncho, handcrafted by textile artisans in Peru was selected 1st for color and quality, 4th for uniqueness and function. There were not consistent choices for each of the attributes for the Peruvian products however eight products were ranked by participant preferences for the top five choices in four attributes.

Table 6. Multiple response frequency analysis of Peruvian product preferences for product attributes (Products # P40 - P60)

<i>RANK</i>	<i>Unique (N = 800)</i>	<i>Color (N = 769)</i>	<i>Function (N = 779)</i>	<i>Quality (N = 743)</i>
<i>1st</i>	Tassel Belt P56 (15.9%) n = 127	Poncho P57 (13.0%) n = 100	Knit Dress P47 (9.9%) n = 77	Poncho P57 (10.0%) n = 74
<i>2nd</i>	Dress P42 (9.9%) n = 79	Dress P42 (12.5%) n = 96	Sofa Runner P46 (9.1%) n = 71	Sofa Runner P46 Poncho P47 (9.8%) n = 73
<i>3rd</i>	Knit Dress P47 (9.1%) n = 73	Knit Dress P47 (8.5%) n = 65	Apron P60 (8.5%) n = 66	Dress P42 (9.4%) n = 70
<i>4th</i>	Poncho P57 (8.9%) n = 71	Tassel Belt P56 (8.2%) n = 63	Poncho P57 (8.0%) n = 62	Poncho P43 (8.6%) n = 64
<i>5th</i>	Apron P60 (8.8%) n = 70	Apron P60 (7.5%) n = 58	Table Runner P58 (7.6%) n = 59	Apron P60 (7.0%) n = 52

Participants' product preferences for each of the four product attributes of uniqueness, color, function, and quality were highly correlated and statistically significant at the .001 level for both Guatemalan and Peruvian product preferences. Effect sizes between .34 and .49 for preferences for the four product attributes are moderate. Reliability for the product preferences for the four attributes showed positive correlation. Participants considered all attributes when making a product preference. Correlation coefficient analysis between product attributes is shown in Table 7 with all relationships showing significance below .001.

Table 7. Correlation matrix of product preferences per product attribute

Attribute	Uniqueness 1	Color 2	Function 3	Quality 4
Guatemala Product				
1. Preference for Unique				
2. Preference for Color	.416*			
3. Preference for Function	.337*	.421*		
4. Preference for Quality	.407*	.404*	.488*	
Peru Product				
1. Preference for Unique				
2. Preference for Color	.453*			
3. Preference for Function	.454*	.436*		
4. Preference for Quality	.458*	.371*	.403*	

*Significant at the .001 level

Comparison of Product Preferences for High and Low scores for DUCP

The overall mean for the 8-item scale for Desire for Unique Products was computed as a new variable and analyzed. The mean for the DUCP was 3.91 with a SD of .658. Frequency analysis determined the upper 25% and lower 25% quartiles of the participants. The upper 25% mean of means was greater than 4.38 (N = 78) and the lower 25% mean of means was 3.50 or less (N = 71). Product preferences of these two quartile groups were compared to understand how the Desire for Unique Consumer Products (DUCP) score related to product preferences.

Descriptive analysis explored Guatemala and Peruvian product selections' first choice for each products attribute for participants with high DUCP score compared to participants with low DUCP score. Table 8 displays product numbers and frequency values for Guatemala product preferences selected for 1st ranking for uniqueness, color, function, and quality comparing upper 25% and lower 25% of mean of means score for Desire for Unique Consumer Products. For each of the four product attributes, highest frequencies of product preferences for unique, color, function, and quality were all apparel products (G2, G16, G1) for high and low scores of DUCP.

Both upper and lower DUCP scores for function and quality selected the coat (G16). Cultural textiles, inset into familiar products and silhouettes, were preferred by participants for function and quality. Design collaborations with cultural textile artisans may be enhanced if product design incorporates modern silhouettes and functional product categories that relate to contemporary consumers taste and lifestyles. The fourth ranked product preference for uniqueness for the upper DUCP quartile was a wrist cuff accessory (G29) made of vintage Mayan textile and trimmed in white leather. The lower 25% quartile selected a jacket and pants (G1) of vintage textiles, for both unique and quality attributes. Versatility in apparel with modern silhouettes and casual functionality may be a product category that could increase demand for cultural textiles.

Product preferences for color for both upper and lower quartiles of DUCP scores reflected fashion trends and textiles that were co-designed with Maya Traditions using color trend inspirations. The exception was a placemat (G4) ranked third by both upper and lower quartiles. The placemat was constructed of bright contrasting colored textiles and featured an embroidered bird in the center.

Table 8. Comparison of Guatemala product preferences for upper and lower DUCP quartiles

<i>Attribute</i>	<i>Unique</i>	<i>Unique</i>	<i>Color</i>	<i>Color</i>	<i>Function</i>	<i>Function</i>	<i>Quality</i>	<i>Quality</i>
<i>Quartile</i>	<i>Upper</i> 25% <i>N = 76</i>	<i>Lower</i> 25% <i>N = 75</i>	<i>Upper</i> 25% <i>N = 75</i>	<i>Lower</i> 25% <i>N = 72</i>	<i>Upper</i> 25% <i>N = 76</i>	<i>Lower</i> 25% <i>N = 74</i>	<i>Upper</i> 25% <i>N = 74</i>	<i>Lower</i> 25% <i>N=67</i>
<i>Ranking</i>								
<i>1st</i>	G2 (N=11)	G16 (N=12)	G1 (N=9)	G2 (N=9)	G16(N=12)	G16(N=17)	G16(N=23)	G16(N=20)
<i>2nd</i>	G16 (N=9)	G28 (N=11)	G2 (N=8)	G16 (N=8)	G20 (N=9)	G2(N=6)	G20 (N=9)	G1 (N=8)
<i>3rd</i>	G20 (N=7)	G1 (N=9)	G4 (N=6)	G4 (N=7)	G 2 (N=8)	G4 (N=6)	G21 (N=6)	G20 (N=5)
<i>4th</i>	G29 (N=6)	G20 (N=7)	G12 (N=6)	G9 (N=7)	G 4 (N=7)	G20(N=6)	G2 (N=4)	G28 (N=5)
<i>5th</i>	G21 (N=6)	G21 (N=7)	G16 (N=6)	G1 (N=5)	G1 (N=6)	G21(N=5) G2 (N=5)	G1,G9,G12, G26 (N=3)	G8 (N=4) G19 (N=4)

Selection of Peruvian products were similar between the upper and lower DUCP quartiles for uniqueness, color, and function. Descriptive analysis of product preferences for Peruvian products for attributes of uniqueness, color, function and quality comparing the upper DUCP quartile and the lower DUCP quartile are shown in Table 9. Product preferences for quality found the long poncho (P57) ranked first by the upper quartile, while the student designed dress (P42) with center insets of hand woven textiles ranked first for the lower quartile. The silk screened tights (P40) were selected by the lower score quartile for unique, color, and quality and were not in the rankings for upper DUCP scores. These findings may indicate consumers with lower DUCP scores may prefer apparel products with symbols of cultural textiles. The tights were silk screened with a print of an original cultural textile design from the Peruvian weavers. Textile designs could be licensed from the weavers and printed on apparel with higher volumes at an affordable price. This product could innovate the design and development process for cultural textile artisans.

Table 9. Comparison of Peruvian product preferences for upper and lower DUCP quartiles

<i>Attribute</i>	<i>Unique</i>	<i>Unique</i>	<i>Color</i>	<i>Color</i>	<i>Function</i>	<i>Function</i>	<i>Quality</i>	<i>Quality</i>
<i>Quartile</i>	<i>Upper</i>	<i>Lower</i>	<i>Upper</i>	<i>Lower</i>	<i>Upper</i>	<i>Lower</i>	<i>Upper</i>	<i>Lower</i>
	25%	25%	25%	25%	25%	25%	25%	25%
	N = 77	N = 75	N = 75	N = 71	N = 76	N = 72	N = 74	N = 67
<i>Ranking</i>								
<i>1st</i>	P56 (n=19)	P56 (n=13)	P42 (n=15)	P42 (n=16)	P47 (n=16)	P47 (n=9)	P57 (n=15)	P42(n=10)
<i>2nd</i>	P42 (n=13)	P47 (n=10)	P47 (n=12)	P57 (n=10)	P42 (n=9)	P57 (n=9)	P47 (n=12)	P43 (n=8)
<i>3rd</i>	P47 (n=12)	P42 (n=9)	P57 (n=12)	P40 (n=9)	P57 (n=9)	P42 (n=7)	P56 (n=9)	P40 (n=7)
<i>4th</i>	P57 (n=6)	P40 (n=8)	P58 (n=6)	P56 (n=9)	P46 (n=7)	P49 (n=7)	P42 (n=8)	P47 (n=6)
<i>5th</i>	P41 (n=5)	P57 (n=7)	P43 (n=4)	P47 (n=6)	P58 (n=7)	P58 (n=7)	P43,P 46, P53, P58,P59 (n=4)	P57 (n=6)
			P60 (n=4)		P60 (n=7)			

Limitations

This research represents an important step in understanding consumer preferences of incorporating handcrafted cultural textiles into contemporary products. However, it has limitations that highlight practice-based research. Limitations were selected products displayed in the exhibition were specific to time, place, and space and not representative of all products or product categories that could be produced by cultural textile artisans. The number of people participating in the research was limited to a voluntary sample of visitors and students to the exhibition. The study is limited to people who completed the paper and pencil survey and may not be representative of all consumers in global markets. The majority of the sample were college students and findings may not reflect consumers of cultural textile products from other consumer segments or a broad consumer base for the products. Products in the exhibition were not priced, which may influence consumer preference based on perceived value or ability to purchase. Price was not included because the study was exploratory and many of the products were not produced commercially so the price of production was not determinable.

Implications and Future Research

The study found product preferences for apparel, furniture, and unusual accessory items with relationship to the Desire for Unique Consumer Products. Participants had a higher than average mean for Desire for Unique Products. The mean for this study for the sum of the 8-item scale was 31.2 compared to 26.2 in the study confirming the development of the scale (Lynn & Harris, 1997). Lynn and Harris (1997) state, “highly competitive and status-oriented people should have stronger desires for unique consumer products than do less competitive and status-oriented people” (p. 610). Their validation of the scale inferred that the DUCP scale is useful in

basic research of consumers' responses to unique goods, which is applicable to cultural textile products.

Participants preferred muted natural colors or neutral with accents of color. Products of muted shades of traditional or vintage colors received higher frequencies from both upper and lower quartiles of Desire for Unique Consumer Products. In terms of function for cultural textile products, participants preferred apparel and furniture. Consumers preferred apparel, and more specifically, dresses, coats, jackets, and outerwear along with versatile knit dresses and tights. Three furniture products including an accent table and chair featuring artisan textile products along with a hand woven textile runner displayed on a contemporary sofa were preferred.

The relationship of Desire for Unique Consumer Product scores and participants' product preferences for 'quality' favored artisan textiles inset into contemporary apparel and constructed in the U.S. Participants preferred the coat, dress, jacket, and bodice and skirt incorporating authentic and co-designed cultural textiles in modern silhouettes. The preferred garments, that were designed and constructed by the researcher and design students, indicate product design by formally trained designers may benefit cultural textile organizations.

Preferences for quality of Guatemalan products included the top ranked furniture products constructed using co-designed Mayan textiles inset into other materials. Preferences for quality included Peruvian products that were hand woven and constructed by artisan textile weavers in Peru. These products included the long poncho, short poncho, sofa runner, and apron. Cultural textile artisans produced the preferred products from Peru.

The study concludes cultural artisan organizations may innovate product designs and function categories to increase sales to a global market and provide more income to cultural textile artisans. Many of the preferred products could be rapidly developed and produced with

strong consumer demand in the global marketplace. The knit dress and tights that are silkscreened provide an immediate opportunity for cultural textile artisans to connect with fashion trends and stay true to cultural heritage using traditional woven textile patterns. Cultural textile artisan organizations may want to explore the use of hand woven textiles insets into U.S. produced apparel as in the coat (G16), selected for unique, function, and quality. This would assure a higher standard of quality using a smaller amount of hand woven artisan textile. Smaller sized artisan textiles could be produced in shorter times in higher quantities with less interruption in production. Implementing the smaller weaving sizes may result in more sustainable income for the textile artisans.

Cultural textile artisan organizations traditionally develop jewelry, accessories, handbags, and tote bag products to provide consumers with lower priced items that were not preferred by participants. Instead, product categories of furniture and apparel received the most frequent selections for product preferences. Cultural textile artisans and organizations can explore the many possibilities of incorporating hand woven artisan textiles into accent furniture categories and partner with U.S. manufacturers to expand product options to retailers and consumers.

Future research in this area could compare artisan textiles products from other countries and cultures. Additional research could explore consumers' preferences related to purchase intention of cultural textile products. Additional exhibition research is encouraged because it allows for a similar environment to in-store experiences that is lacking in literature of cultural textile products. Exhibition of practice-based research allows participants to see, feel, and touch the products that may give greater understanding of product qualities and preferences versus studies of pictures or diagrams of cultural products. Much of the current body of literature involves consumer attitudes of e-commerce cultural textile products.

Practice-based research continues with an emerging social enterprise incorporating findings from this study. New product categories and co-designed cultural textiles will be offered for purchase and consumer preferences will be collected from sales of the products. Two of the design students participating in product designs continue to work with weaving organizations in Guatemala and Peru. Findings from this study are being integrated into handcrafted cultural textiles with the weaving organization in Guatemala for new product categories and new processes to work with design partners and develop textiles and products for apparel and home decor. The Desire for Unique Consumer Products related to cultural textile products encourages design and development of apparel and small furniture items while maintaining cultural heritage in textile designs and processes. Cultural artisan organizations are encouraged to produce products that are marketed as scarce while maintaining high quality standard in functional categories of apparel and small furniture for the global market.

CHAPTER 4

MILLENNIAL CULTURAL CREATIVITY CHARACTERISTICS AND PREFERENCES
FOR CULTURAL TEXTILE PRODUCTS FROM GUATEMALA AND PERU

Introduction

The commercialization of artisan production is expanding as the world market for craft objects grows (Grimes & Milgram, 2000). The success of handcrafted products is dependent on artisans producing quality products in keeping with the tastes and preferences of consumers. Increased commercialization of products for export markets requires artisans to include artistic craft and ethnic values with a touch of innovation (Dash, 2011). As global access expands with travel and the use of the Internet, consumers have opportunities to select unique products that were formerly only found in distant markets. Expanded use and access to the Internet has allowed consumers and producers to have flexible, fast, and inexpensive ways of participating in the global marketplace for products (Simeon, 1999).

With increased globalization, handcrafted products are becoming commoditized and artisans are competing with producers from all over the world (Dash, 2011). Craft production for sale outside of local areas is becoming an integral component of communities' economic activities especially in rural areas. Cultural artisans seek to develop creative, innovative, and market-driven products to a diverse customer base (Aageson, 1997). The overarching aim of this study is to explore millennial consumers' preferences in relationship to characteristics of cultural creativity for cultural textile products. By understanding preferences of millennial consumers regarding handcrafted textile products, artisans and the organizations they work with can innovate process and product to meet the needs and desires of a new generation of consumers.

Apparel and soft product producers of cultural textile products have recognized the importance of fashion trends to their product design and development (Littrell & Miller, 2001; Paige-Reeves, 1998). Communicating current fashion trends to cultural textile artisans is vital to their understanding and knowledge of foreign tastes and lifestyles (Lynd, 2000). According to specialists in international craft marketing, building strong artisan enterprises requires investment to train artisans for business skills (Littrell & Miller, 2001). The significance of this study is to understand millennial consumer preferences of products they ‘would most like to have’ for handcrafted co-designed and authentic cultural textile products.

The process of co-design will assist cultural textile artisans in understanding and interpreting fashion trends and consumer tastes in the global marketplace. Co-design is a process of collaborative design thinking involving joint inquiry and imagination in which diverse people explore and define a problem and collaboratively develop and evaluate solutions (Steen, 2013). Participants are able to express and share their experiences and negotiate their roles and interest to jointly create positive change. Co-design presents an opportunity to work with cultural textile artisans to create textiles and products with the intent to expand product offerings and sales in the global marketplace. Opportunities to learn and solve problems collectively, especially between designers and artisan weaving organizations may provide deeper satisfaction with the design process (Niinimäki & Hassi, 2001).

This study represents the culmination of three years of practice-based research in co-designing backstrap hand woven textiles with fair trade weaving organizations in Panajachel, Guatemala and Cusco, Peru. Incorporating co-design, the researchers provided fashion trends and color inspiration for the weaving designs while the artisans incorporated these trends and colors into their weaving skills and traditional cultural patterns to construct the textiles. The

weaving organization previously brought designers from the U.S. and Japan to assist and inspire artisans in creating new weaving designs and color combinations for hand-crafted textiles. The artisans would create samples of new weaving designs, but this was not a market driven process to design products to expand sales in the global marketplace. The researcher modified the innovation process through co-design and incremental innovation of the fair trade supply chain to develop handcrafted cultural textiles into contemporary products.

The success of handcrafted products has been said to be dependent on how well artisans can produce products in keeping with the tastes and preferences of consumers. To compare product preferences, both co-designed cultural textile products and authentic cultural textile products constructed by artisans from Guatemala and Peru were evaluated. There remain questions if millennial consumers prefer co-designed or authentic cultural textile products. Boutin (2006) writes that most products are complicated and require a deep domain expertise for the product design process. Sanders and Stapper (2008) question how co-design will influence the future of design and design education. The findings from prior research influenced the decision to explore the process of co-design within the framework of Sustainability Oriented Innovation to understand consumer preferences of co-designed cultural textile products in relationship to traditional authentic cultural textile products.

The methodology involved exhibiting co-designed and authentic handcrafted cultural textile products from Guatemala and Peru artisans in a 1,000 square foot gallery space divided into two distinct areas for each country. The exhibit presented hand-woven and hand-embroidered textiles in six different product categories. Consideration was given as to how visitors would experience evaluation of the textile products. Color stories depicted provided

information about the textiles specific to each of the geographic areas in Guatemala and Peru related to the cultural artisans.

Sustainability-Oriented Innovation

Opportunities to innovate for sustainability received attention with the Brundtland report in 1987, which encouraged the importance of firms to create, redesign, adapt, and diffuse environmentally sound technologies (WCED, 1987). From this initial eco-innovation debate, a new stream of research on SOI with a broader focus on environmental, social, and economic dimensions was initiated to integrate the design of new products, processes, and organizational structures (Hall, 2002; Rennings, 2000; Schaltegger & Wagner, 2011; van Kleef & Roome, 2007).

Klewitz and Hansen (2014) describe SOI as a process or direction toward sustainability with deliberate management. Klewitz and Hansen (2014) developed an integrated framework on innovative practice in terms of strategic sustainability behaviors and types of SOIs. As displayed in Figure 17, the integrated framework for SOI practices has five strategic sustainability behaviors as well as innovative efforts at process and products. Incremental innovation is exemplified as a new product designed using existing technologies targeted toward existing markets, which might be found in an apparel company using more environmentally friendly materials (product) and providing better working conditions for production workers (process).

Fair trade weaving organizations would be classified as small to medium enterprises. A systematic review of small to medium enterprises (SME) explored holistic views of sustainability that covered both environmental and social dimensions. They perceived innovation for sustainability was more about relative improvements in process, product, and organizational innovations than disruptive market failures. By creating more sustainable production methods,

market structures, and consumption patterns, SOI is suggested to be successful in niches or even mass markets (Schaltegger & Wagner, 2011).

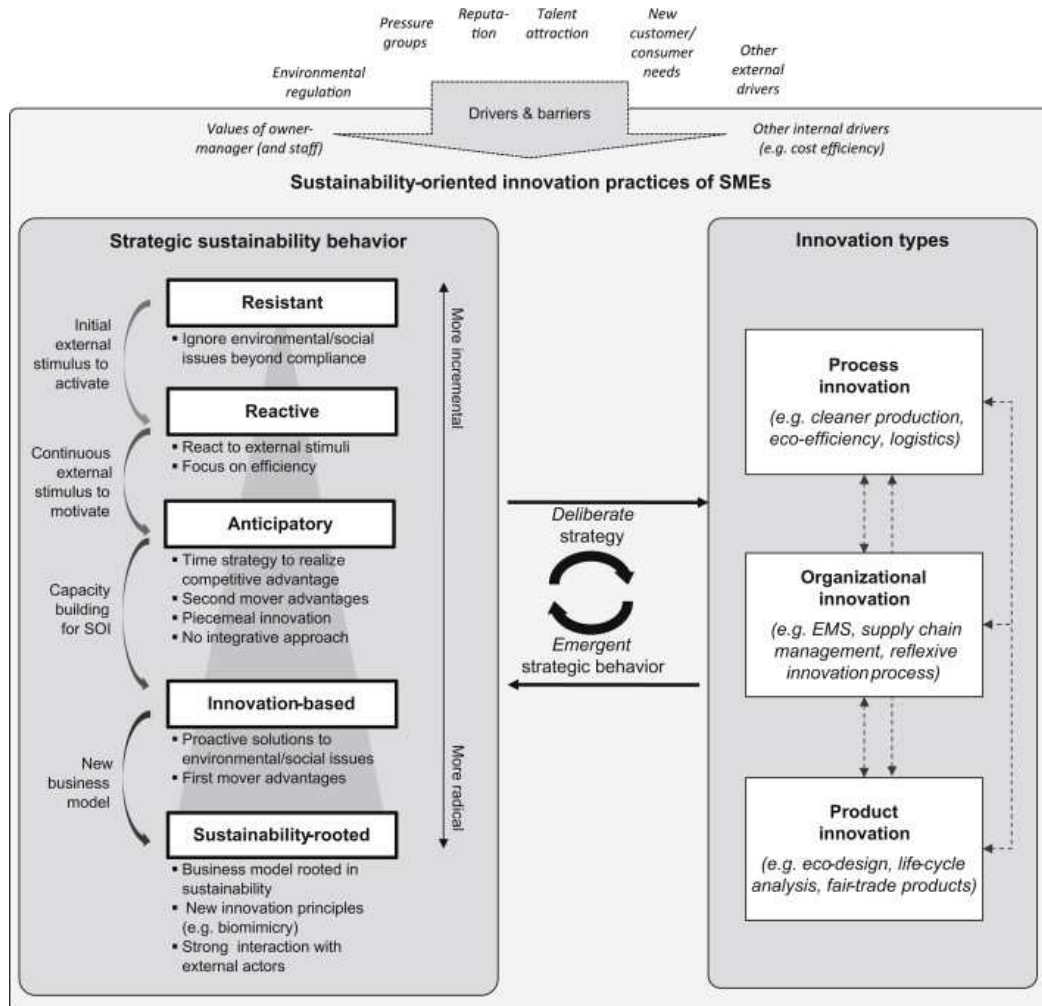


Figure 17. Integrated framework of Sustainability-Oriented Innovation (Klewitz & Hansen, 2014).

Sustainable entrepreneurship is associated with owner-managers' values with a specific culture and approach to solving social and environmental problems through business activities, which evolve into a vehicle for social change (Anderson, 1998; Kearins et al., 2010).

Entrepreneurs incorporating sustainability principles address unmet needs and demands of a larger group of stakeholders. Stakeholder demands go beyond the economic interests of shareholders and may be a source of opportunities aimed at realizing social objectives as well as environmental or social improvements (Dean & McMullen, 2007).

Verganti (2008) identified three sources of innovation: 1) market pull, 2) technology push, and 3) design driven. Market pull innovation occurs when a designer observes users' needs, analyzes these needs, and proposes a solution to meet user needs. In this source of innovation, users may propose a solution to their unmet needs, which occurs in co-design.

Sustainability innovation may involve including customers, as lead users, in a co-design process co-creating innovative products that customers want and desire and most importantly are willing to buy. Lead user is the oldest method of involving customers in product design process and relies on direct interaction between the customer and product development teams. Lead user methods may be used to improve existing products and innovate products to meet specific needs. Lead users are customers at the leading edge of the marketplace. Lead users have current needs that may emerge in the marketplace in future years. Lead users are familiar with conditions that might determine market needs for the future and can provide new product concepts (von Hippel, 1986). Fair trade artisan products may be enhanced with lead user marketing research in sustainability-oriented innovation to develop new product concepts in the product design process. Studies of SOI did not include cultural textile product development.

Evaluative Criteria of Fair Trade Cultural Products

Artisans produce a range of handcrafted products including apparel, accessories, jewelry, home décor, and functional home products. In the fair trade sector, products are noted for their ethnic identity and aesthetic features of local traditions. Some level of hand production is

common in artisan products (Littrell & Dickson, 2010). Cultural textile artisans may adopt a product development strategy to follow traditions in color, embroidery, fabric, and construction techniques for the U.S. target market (Littrell & Miller, 2001). Olson (1999) reported, international clients actually prefer irregularities in textile construction, dye lots, and design because products appear unique and noncommercial and have an indigenous quality. Fashion silhouettes and closures may require adaptation of cultural embedded products (Kotabe & Helsen, 1998).

In their study of 244 western consumers' preferences of designs by artisans from India for new pant and skirt designs concluded, "artisans may need to break from tradition to customize the current apparel silhouette and fastening system to those current in the consumers' culture" (Littrell & Miller, 2001, p. 83). Garments held greater potential for purchase when they had familiar overall garment and fabric features compatible with participants' wardrobes. Littrell and Miller suggest a product development strategy to extend product attributes of color, fabric, construction and embroidery for a U.S. market.

In the content analysis of 200 cultural product websites, over 50% of the websites had a scarcity of narrative and pictorial information about the products, cultures, and artisans (Lee & Littrell, 2003). Little information was provided regarding the artisans, craft processes, and cultural traditions to address consumers' motivations for buying cultural products. Product material, price, and usage did not give enough descriptive information for cultural creative consumers to judge quality. Lee and Littrell (2003) suggest websites should significantly expand product information regarding textile construction and dye methods, size of product, weight of yarn and fabric, hand or drape of fabric, price, and care instructions to attract consumers. In

addition, cultural information about artisans' lives and craft production with views of product details would enhance customers' experiences with cultural products on the Internet.

Websites offering cultural products have an opportunity to market products in ways that help customers act on their concerns about artisans' well-being and ecological sustainability through fair trade. Balderjahn (1988) found a strong association between attitudes toward ecologically conscious living and corresponding behaviors. Companies providing ample narrative and pictorial information for cultural consumers have a competitive advantage with Internet marketing technology. Lee and Littrell (2003) concluded that many websites failed to market their products in ways that helped customers act on their concerns about artisan enterprise and ecological sustainability. "A few well-placed stories about how raw materials are processed or how artisan wages help to enhance household well-being could encourage customers to affirm their social responsibility through web site purchases" (p. 368).

The potential for artisans to develop their handcrafts to meet consumer preference and market-driven demand is significant (Ray, 1997). Product attributes that are closely allied with the culture, such as fabric, color, and embellishment, are good candidates for extension in product development. Cross-cultural marketing research provides important market-driven input for entrepreneurial development programs focused on artisans' self-efficacy, creativity, and problem solving for product design and development in less developed countries (Dana, 2000).

Cultural Product Consumers

There are five motivations for consumers to select cultural products: 1) creating aesthetic experiences and meaning with the physical features of the products, 2) viewing, touching, and learning about a product's structural and aesthetic qualities, which provide an inward, individualistic, and affective interaction with the products, 3) enhancing daily life activities with

products used for eating, cooking, playing, dressing, and decorating, 4) establishing self-identity and creating a personal style with products that differentiate the owner from others, and 5) allowing consumers' connection with others, their communities, and ways of life through understanding artisan processes (Littrell & Dickson, 1999). Lee and Littrell (2003) state, "when products spark momentary surprise, delight, or diversion, the quality of life is enhanced" (p. 358). The consumption of cultural products affirms consumers' sense of social responsibility related to the products' ethnic, aesthetic, function, and symbolic characteristics (Littrell & Dickson, 1999).

Littrell, Ma, and Halepete (2005) analyzed 1,055 fair trade retail customers using cohort analysis to understand the commonalities and differences among three generational groups: 1) Swing Generation; 2) Baby Boom Generation; 3) and Generation X consumers. Wearing ethnically inspired products had the strongest influence on intention to purchase fair trade apparel for each of the three generational cohorts. Their study found marketing messages regarding fashionability of attire would be well received by Generation X consumers. Generation X was less likely to wear ethnic clothing but more likely to wear fashionable attire. Findings from their study reported, "very little promotional attention is directed to the uniqueness, ethnicity, and quality of fair trade products in stores, catalogs, and internet sites" (Littrell, Ma, & Halepete, 2005, p. 418). This suggests that attention to marketing materials and information regarding uniqueness, ethnicity, and quality may positively influence consumers in identified market segments. Respondents in a study of 220 consumers of cultural product websites were most interested in buying jewelry (67%), followed by fashion accessories (41%) and seasonal or holiday items (37%) (Lee & Littrell, 2006). Customers asked for greater variety in product selection and lower prices.

There are many perspectives regarding measurement of consumer attitudes and purchase intentions of ethical and artisan products that do not explicitly include the price of these products being taken into consideration (Browne et al., 2000). Price may affect attitudes and intentions of consumers regarding ethical considerations. Attitudes alone are generally poor predictors of buyer behavior especially in the social marketing area (Shaw & Clarke, 1999). Other factors indicate the discrepancy between attitudes and ethical buying behavior may be the lack of availability of ethical products, disbelief of ethical claims, and lack of information (Roberts, 1996).

Demographics & Psychographics of Cultural Product Consumers

Generational characteristics may differentiate consumers of cultural products and their product preferences. Members of a generational cohort may share similar experiences and unique life events during their formative years resulting in similarities in values, beliefs, preferences, motivations, and behaviors (Mitchell, 2003). Typically, cohorts are organized in 20 year increments, although subgroups within generational groups have been used to provide a more refined understanding of consumer preferences (Young & Hinesley, 2012). Consistency in defining cohort characteristics in college students is significant to marketing and business strategy (Meredith & Schewe, 2001). Understanding key influencers of a generation means a business can anticipate consumer preferences.

In 2011, baby boomers accounted for largest generational group of consumers as 25.74% of the adult population (Howden & Meyer). Baby boom consumers have remained strong positive drivers for the home furnishings market (Burnsed, 2009). A sub-group of the baby boom generation, named Cultural Creatives, was identified with interests in global cultures with attention to social and environmental issues and systems and values of volunteering in social and

environmental programs (Ray & Anderson, 2000). Cultural Creatives are identified as a consumer segment to whom fair trade philosophy, practices, and products may be predominantly salient (Littrell & Dickson, 1999). Research on Cultural Creative consumers of crafts suggests they are motivated toward affirming social responsibility through their consumers' decisions (Lee & Littrell, 2003). Cultural Creatives are open to world cultures and are attentive to global issues and systems (Littrell, Ma, & Halepete, 2005). As a coherent subculture, Cultural Creatives share worldviews, values, lifestyles, and value community building, creating a better society, and ecological sustainability.

The Cultural Creative is a prolific user of media and prefers rich holistic stories rather than bullet point summaries of human events and conditions. They have a strong desire for product authenticity and are attracted to the foreign or exotic (Ray & Anderson, 2000). The 'Cultural Creative' wants to know how a product was made, who made it, and what will happen to it when they are done with it (Ray, 1997). Homes of consumers identified as 'Cultural Creatives' exhibit eclectic decoration with individual styles displaying art and craft objects. The marketing of cultural products may be relevant for this US market segment (Lee & Littrell, 2003).

The Gen Y population, born between 1980 and 2001, is 7% larger than the baby boom generation and in 2013, accounted for 21% of total consumer expenditures in the U.S. (Doherty, 2013). Gen Y consumers are unpredictable, discriminating, and have a high need for uniqueness. They came of age during a period of economic growth and the disappearance of modernist values and experienced a strong emergence of social media, reality television, and influences from popular culture (Parment, 2011). Gen Y consumers may have a different frame of reference than other generations because of their exposure to popular culture. Offering unique products and

devising communication programs and messages that stress the uniqueness of merchandise will be helpful in attracting Gen Y consumers (Rajamma et al., 2010).

Generation Y consumers have been classified as ‘Millennials’ and are the most recent generation to become consumers in the marketplace (Young & Hinesley, 2012). Personality profiles describe Millennials as confident and self-reliant, technologically savvy and connected; open to change and diversity; closely connected to family and social organizations; service oriented; able to multitask with digital media; and gain immediate access to information (Brown & Washton, 2010). The motives that underlie and guide millennials’ consumer behavior do not have strong empirical data to make assumptions regarding preferences of cultural textile products. Review of literature found a lack of research regarding preferences of cultural products by young consumers, particularly millennial consumers. This research may contribute to understanding cultural textile product preferences and promotional strategies for millennial consumers.

Emerging tools of practice-based research address questions in holistic and engaged ways in which theory and practice are intertwined (Leavy, 2009). This study seeks to bridge the gap in sustainability innovation and product design process with practice-based research for cultural textile artisans and organizations utilizing handcrafted cultural textiles. The study explores factor analysis of values related to cultural creativity of millennial consumers with product preferences they ‘would most like to have’ of Guatemalan and Peruvian cultural textile products to address the following research questions:

RQ1. What are the characteristics of millennial consumers related to cultural creative values?

RQ2. What are the preferences of millennial consumers they ‘would most like to have’ for cultural textile products from Guatemala and Peru?

RQ3. How do millennial consumer product preferences relate to millennial cultural creative characteristics?

Methods

The population for this study were visitors to a ‘Journey into Sustainability’ exhibition of 51 cultural textile products from Guatemala and Peru. The exhibition was free and open to the public Monday through Friday from 9 a.m. to 5 p.m. in a university gallery. Visitors to the gallery included the public, students, and university staff and faculty. Participants for the study volunteered to complete a paper and pencil survey while visiting the exhibition (See Appendix G). For this study, surveys from participants who identified their age as the millennial generation were collected. The sample consisted of 255 millennial participants, 86.7% were female (n = 221), 12.5% male (n = 32), and 0.8% gave no response (n = 2).

The survey included statements of values chosen from a study of Cultural Creative consumers developed by American LIVES, a market research firm specializing in the lifestyles, interests, values, expectations, and symbols of Americans. Ray and Anderson (1997) reported these statements in their report on *The Emerging Culture*. Studies using the statements reported psychographics related to cultural products (Lee & Littrell, 2006; Littrell & Miller, 2001). Consumer psychographics were measured by 22 statements related to values and experiences of Cultural Creative Consumers (Ray, 1997). Participants were asked to rate their agreement with the statements with a 5-point Likert scale of “strongly disagree” (1) to “strongly agree” (5).

Results and Discussion

The first research question addressed the characteristics of millennial consumers through analysis of mean scores of twenty-two statements related to aspects and experiences of cultural creativity. Descriptive analysis for aspects and experiences of cultural creative consumers found highest mean scores for 1) “I like travel that offers adventure” (4.63) 2) “I am an active user of the Internet” (4.63), and 3) “I like to wear fashionable clothing” (4.62). Standard deviation was the lowest for these three items ranging from .69 to .65. Table 10 displays descriptive statistics for the statements of Cultural Creative values and experiences. The lowest mean scores for Cultural Creative values were: 1) “I am a book buyer” (3.05), 2) “I follow holistic health practices that integrate body, mind, and spirit” (3.39), 3) “when I shop I want to know how the products I buy were made” (3.43), and 4) “I like to wear ethnic-inspired clothing” (3.47). These items had the largest standard deviations of the 22 items ranging from 1.14 to 1.29.

Table 10. Descriptive statistics of Cultural Creative statements of millennial consumers

<i>Cultural Creative values and experiences</i>	<i>N</i>	<i>M</i>	<i>SD</i>
I like travel that offers adventure	255	4.63	0.691
I am an active user of the Internet	255	4.63	0.680
I like to wear fashionable clothing	255	4.62	0.646
I like learning about ways of life in different parts of the world	255	4.36	0.829
I like travel that is educational	255	4.30	0.836
I devote time to developing and sustaining relationships	255	4.29	0.791
I enjoy having craft and art objects around my home	255	4.22	0.882
I devote time and energy to maintain my personal health	255	4.22	0.830
I enjoy shopping on Internet sites for interesting, unique merchandise	255	4.16	1.044
I enjoy ethnic and/or gourmet cooking	255	4.16	1.007
I place importance on helping other people and bringing out unique gifts	254	4.08	0.883
It's important to me that consumer goods are authentic, rather than imitation	254	3.94	1.026
I take part in activities to make my community a better place	254	3.93	0.936
I consider myself a well-informed consumer	255	3.80	0.904
My home decoration is eclectic, incorporating objects and furniture of many styles	255	3.60	1.156
I often think about issues that affect the whole planet, including ecological sustainability and overpopulations	254	3.59	1.066
I volunteer for one or more good causes in my community	255	3.58	1.164
I commit time to conservation of the natural environment	255	3.52	0.983
I like to wear ethnic-inspired clothing	255	3.47	1.135
When I shop I want to know how the products I buy were made	255	3.43	1.066
I follow holistic health practices that integrate body, mind, and spirit	255	3.39	1.221
I am a regular book buyer	255	3.05	1.293

The second research question analyzed millennial consumer preferences of Guatemalan and Peruvian cultural textile products they ‘would most like to have’. Product preferences with highest frequency for both Guatemala and Peru were co-designed with the cultural artisans and designers associated with the research as displayed in Table 11.

Results of frequency analysis for Guatemalan cultural textile products were 46.4% for apparel, 30.6% for home décor pillows, 12.8% for furniture, and 5.6% for accessories. Three apparel items had the highest preference: 1) coat (G16) with co-designed hand woven textile insets had the highest preference of 17.1%; 2) co-designed tunic dress (G2) of vintage cultural textile with 13.8%; and 3) authentic hand woven long skirt and hand woven bodice (G28) with 10.2%, 4) an accent table (G20) with co-designed textile insets with 7.7%, 5) co-designed jacket and pant ensemble (G1) of vintage cultural textiles with 5.3%, 6) repurposed chair (G21) with a cushion constructed of vintage hand woven huipile combined with 3.7%, and 7) home décor pillow (G12) with a co-designed hand woven textile inset with 3.3%.

For Peruvian products, Millennial preferences of ‘would most like to have’ were 70.4% for apparel, 16.7% for fashion accessories, 5.8% for furniture, 2.9% for table décor, 1.2% for framed textiles, and 1.2% for home décor pillows. The apparel product with the highest frequency was a tank dress (P47) with a silkscreen of an authentic Peruvian textile weaving design (34.2%) followed by a dress (P42) with hand woven textile inset designed into the front and back of the dress (19.8%). The third highest product were tights (P40) which were silk-screened Peruvian textile designs (8.2%).

Table 11. Millennials' first product preferences for 'would most like to have'

Product Description	#	N	%	Function	Co-Design Textile	Co-Design Product
Guatemala		(N = 246)				
Coat	G16	42	17.1	Apparel	Yes	Yes
Dress	G2	34	13.8	Apparel	No	Yes
Skirt & Bodice	G28	25	10.2	Apparel	No	No
Coffee Table	G20	19	7.7	Furniture	Yes	Yes
Jacket & Pants	G1	13	5.3	Apparel	No	Yes
Chair	G21	9	3.7	Furniture	No	Yes
Pillow	G12	8	3.3	Home Decor	Yes	Yes
Peru		(N = 243)				
Print Tank Dress	P47	83	34.2	Apparel	Yes	Yes
Vertical Dress	P42	48	19.8	Apparel	No	Yes
Print Tights	P40	20	7.8	Apparel	Yes	Yes
Sofa Shawl	P46	14	5.8	Furniture	No	No
Long Poncho	P57	13	5.3	Apparel	No	No
Apron	P60	12	4.7	Accessory	No	No

Principal Component Analysis of Cultural Creative Characteristics of Millennial Consumers

To address the third research question regarding the relationship of millennial consumer Cultural Creative characteristics with cultural textile product preferences, multiple analyses were conducted. First, the 22 items used to measure Cultural Creative aspects and experiences were reduced using exploratory factor analysis. Principal component analysis with Varimax rotation of the 22 items was used to reduce the variables. Two items, 'I enjoy having craft and art objects around my home' and 'I devote time to developing and sustaining relationships', were removed from the analysis because of cross loading to improve the total variance explained. Second, the remaining 20 items were re-analyzed revealing five factors with Eigenvalues greater than 1.00. The 5-factor model explained 55.68% of the variance. Table 12 shows results of the rotated component matrix for the five factors.

Table 12. Rotated component matrix of millennial consumer Cultural Creative characteristics

Cultural Creative Values and Goals	Ethnic	Sustainable	Connected	Cause	Health
Eigenvalue	5.416	1.788	1.514	1.355	1.043
I enjoy shopping on Internet site for interesting, unique merchandise			.574		
I like travel that is education	.606				
I volunteer for one or more good causes in my community				.810	
When I shop I want to know how the products I buy were made	.580				
I enjoy ethnic and/or gourmet cooking	.654				
I follow holistic health practices that integrate body, mind, and spirit					.645
I like travel that offers adventure			.403		
I commit time to conservation of the natural environment		.529			
I place importance on helping other people and bringing out unique gifts	.555				
I like learning about ways of life in different parts of the world	.730				
It's important to me that consumer goods are authentic, rather than imitation	.499				
I like to wear fashionable clothing			.765		
I take part in activities to make my community a better place				.823	
I devote time and energy to maintain my personal health					.705
I consider myself a well-informed consumer		.570			
I am a regular book buyer		.570			
I often think about issues that affect the whole planet, including ecological sustainability and over populations		.747			
My home decoration is eclectic, incorporating objects and furniture of many styles		.745			
I am an active user of the Internet			.710		
I like to wear ethnic-inspired clothing	.474				

Extraction Method: Principal Component Analysis
Rotation method: Varimax with Kaiser Normalization
Values reported $\geq .400$

The first factor labeled 'Ethnic' had an Eigenvalue of 5.42 and accounted for 14.5% of the total variance. The Ethnic label for this factor related to aspects and experiences of ethnic cooking, ethnic clothing, educational travel, authentic consumer goods, learning about the lives of others, and helping others. The 7 items of Cultural Creative aspects and experiences loading for the 'Ethnic' factor are: 'I like travel that is educational'; 'when I shop I want to know how

the products I buy were made'; 'I enjoy ethnic and/or gourmet cooking'; 'I place importance on helping other people and bringing out unique gifts'; 'I like learning about ways of life in different parts of the world'; 'it's important to me that consumer goods are authentic, rather than imitation'; and 'I like to wear ethnic-inspired clothing'. This factor held strong internal reliability with a Cronbach's alpha of .79.

The second factor labeled 'Sustainable' had an Eigenvalue of 1.79 and accounted for 12.90% of the total variance and included 5 items related to environment and conservation. Items loading for 'Sustainable' included: 'I commit time to conservation of the natural environment'; 'I consider myself a well-informed consumer'; 'I am a regular book buyer'; 'I often think about issues that affect the whole planet, including ecological sustainability and overpopulations'; and 'my home decoration is eclectic, incorporating objects and furniture of many styles'. This factor also demonstrated strong internal reliability with a Cronbach's alpha of .72.

The third factor, labeled 'Connected', had an Eigenvalue of 1.514 and accounted for 10.306% of the total variance with four items related to the Internet, shopping, and fashionable clothing. Measures of 'Connected' included, 'I enjoy shopping on Internet sites for interesting, unique merchandise', 'I like travel that offers adventure', 'I like to wear fashionable clothing', and 'I am an active user of the Internet' with internal reliability of a Cronbach's alpha of .60 which is acceptable for exploratory research (Nunnally, 1978).

The fourth factor, labeled 'Cause' with Eigenvalue of 1.344, included two items related to volunteering and activities within the community and accounted for 9.862% of the total variance. Measures for the factor 'Cause' included 'I volunteer for one or more good causes in my community' and 'I take part in activities to make my community a better place'. This factor had minimum internal reliability measurement with a Cronbach's alpha of .57.

The fifth factor labeled 'Health' held two measures related to personal health and holistic health practices. This factor's Eigenvalue was 1.043 with 8.089% of the total variance explained. 'Health' included 'I follow holistic health practices that integrate body, mind, and spirit', and 'I devote time and energy to maintain my personal health'. An internal reliability of .50 Cronbach's alpha for this factor was below acceptable levels but for purposes of theoretical explanation, this factor was retained. Pearson correlation of the two items was significant, with an average effect size of .351.

New composite variables were created for the five factors found in the principal component analysis and mean scores were calculated for the new constructs by averaging the sum of the mean scores. The highest mean score was found for 'Connected' (4.52, SD = .526) followed by 'Ethnic' (3.96, SD = .644), 'Health' (3.80, SD = .850), 'Cause' (3.79, SD = 1.109), and the lowest mean score was 'Sustainable' (3.51, SD = .746). Millennials showed high scores for internet use and shopping, adventurous travel, and fashionable clothing. Millennials also displayed high scores for values related to ethnic characteristics of educational travel, knowing where products are made, appreciation of authentic consumer goods, and learning about life and helping people in different parts of the world.

The five factors addressed different consumer characteristics so it was expected that millennial preferences of Guatemalan and Peruvian cultural textile products might differ for each of the factors and between high and low scores within each factor. Data was collected for product preferences of Guatemala and product preferences of Peru for participants' selection for 'would most like to have'. Data was analyzed across each country and not compared between the two countries.

From the mean scores of the new composite variables, quartiles were calculated for each of the five factors and then analyzed for the Guatemalan and Peruvian product preferences for both the upper 25% and lower 25% of each of the factors. It was assumed there would be different product preferences for each of the five factors. The top five product preferences for both upper and lower quartiles of each of the five factors are displayed in Tables 13 through 17.

For Ethnic characteristics, as shown in Table 13, millennial consumers' preferences of Guatemala products were primarily co-designed apparel. The coat with co-designed textile insets into a contemporary silhouette was selected by both the upper and lower quartiles. The co-designed tunic dress and co-designed jacket and pants were also selected by both upper and lower quartiles. These apparel products were constructed of traditional vintage cultural textiles and were co-designed into modern silhouettes with closures that are familiar to consumers. Preference for Peru products were also apparel for both upper and lower quartiles that were co-designed for the exhibition. The upper quartile selected the sofa shawl which was a hand woven alpaca weaving displayed on a white leather sofa. This product would reflect a luxury item in home décor. The lower quartile chose two accessory items of belts, one that was co-designed and an authentic tassel belt handcrafted by artisans in Peru.

Table 13. Millennial consumer product preferences related to ‘Ethnic’ for upper and lower quartile mean scores

‘Ethnic’ <i>m</i> = 3.96, <i>SD</i> = .644		
<i>Guatemala product preference</i>	<i>Upper 25% (N = 73, >4.4)</i>	<i>Lower 25% (N = 79, <3.7)</i>
1 st ‘would most like to have’	G16 Coat (n = 13, 17.8%)	G16 Coat (n = 11, 13.9%)
2 nd ‘would most like to have’	G2 Tunic Dress (n = 9, 12.3%)	G2 Tunic Dress (n = 11, 13.9%)
3 rd ‘would most like to have’	G1 Jacket & Pants (n = 6, 8.2%)	G28 Skirt & Bodice (n = 11, 13.9%)
4 th ‘would most like to have’	G28 Skirt & Bodice (n = 5, 6.8%)	G1 Jacket & Pants (n = 4, 5.1%)
5 th ‘would most like to have’	G20 Table (n = 4, 5.5%)	G12, G25 Pillow (n = 4, 5.1%)
<i>Peru product preference</i>	<i>Upper 25% (N = 75, >4.4)</i>	<i>Lower 25% (N = 78, <3.7)</i>
1 st ‘would most like to have’	P47 Tank Dress (n = 20, 27.4%)	P47 Tank Dress (n = 31, 39.7%)
2 nd ‘would most like to have’	P42 Vertical Dress (n = 17, 23.3%)	P42 Vertical Dress (n = 12, 15.4%)
3 rd ‘would most like to have’	P46 Sofa Shawl (n = 7, 9.6%)	P40 Tights (n = 11, 14.1%)
4 th ‘would most like to have’	P56 Tassel Belt (n = 5, 6.8%)	P48 Belt (n = 4, 5.1%)
5 th ‘would most like to have’	P57 Long Poncho (n = 5, 6.8%)	P56 Tassel Belt (n = 4, 5.1%)

For ‘Sustainable’ characteristics, as displayed in Table 14, millennial consumer product preferences for Guatemala were the co-designed tunic dress of vintage handcrafted textiles, the coat with co-designed textile insets, and the skirt and bodice of vintage textiles selected second by the lower quartile. The table with textile insets was also selected by upper and lower quartiles. The jacket and pants constructed of vintage cultural textiles in modern silhouettes was selected in fourth place for both upper and lower quartiles for Sustainable. The upper quartile chose one of the home décor pillows with co-designed textile inset in fifth place. Millennial consumer product preferences from Peru for Sustainable were the co-designed silk-screened tank dress and tights for both upper and lower quartiles as well as the co-designed vertical strip dress with inset of hand woven textile. For Sustainable, the apron and long poncho, both authentic products constructed by the Peruvian textile artisans, were selected for the upper quartile. The apron and long poncho reflect current fashion trends in color and shape. In the lower quartile, the co-designed belt and authentic artisan tassel belt were selected in fourth and fifth place, the same as for the Ethnic variable.

Table 14. Millennial consumer product preferences related to ‘Sustainable’ for upper and lower quartile mean scores

‘Sustainable’ factor <i>m = 3.51, SD = .746</i>		
<i>Guatemala product preference</i>	<i>Upper 25% (N = 82, >4.0)</i>	<i>Lower 25% (N = 79, <3.0)</i>
1 st ‘would most like to have’	G2 Tunic Dress (n = 16, 19.5%)	G16 Coat (n = 12, 18.2%)
2 nd ‘would most like to have’	G16 Coat (n = 12, 14.6%)	G28 Skirt & Bodice (n = 10, 15.2%)
3 rd ‘would most like to have’	G20 Table (n = 12, 14.6%)	G2 Tunic Dress (n = 8, 12.1%)
4 th ‘would most like to have’	G1 Jacket & Pants (n = 6, 7.3%)	G1 Jacket & Pants (n = 4, 6.1%)
5 th ‘would most like to have’	G17 Pillow (n = 4, 4.9%)	G20 Table (n = 3, 4.5%)
<i>Peru product preference</i>	<i>Upper 25% (N = 82, >4.0)</i>	<i>Lower 25% (N = 78, <3.0)</i>
1 st ‘would most like to have’	P47 Tank Dress (n = 24, 29.3%)	P47 Tank Dress (n = 21, 32.8%)
2 nd ‘would most like to have’	P42 Vertical Dress (n = 16, 19.5%)	P40 Tights (n = 9, 14.1%)
3 rd ‘would most like to have’	P60 Apron (n = 7, 8.5%)	P42 Vertical Dress (n = 8, 12.5%)
4 th ‘would most like to have’	P57 Long Poncho (n = 5, 6.1%)	P48 Belt (n = 5, 7.8%)
5 th ‘would most like to have’	P40 Tights (n = 5, 6.1%)	P56 Tassel Belt (n = 4, 5.9%)

For ‘Connected’ characteristics, as shown in Table 15, millennial consumer product preferences for Guatemala were the co-designed tunic dress of vintage cultural textiles and the coat of co-designed textile insets as first and second choice for both upper and lower quartiles. The co-designed jacket and pants of vintage cultural textiles was selected third by the upper quartile as well as a co-designed wrist cuff accessory, in fifth place. The table with co-designed textile insets was selected by both upper and lower quartiles. For Peruvian products, millennial consumer preferences were the co-designed silk-screened tank dress, the co-designed vertical stripe dress, and the co-designed tights. The authentic long poncho and tassel belt, handcrafted by artisans in Peru, were selected for the upper quartile. The authentic apron and table runner, handcrafted by artisans were selected for the lower quartile.

Table 15. Millennial consumer product preferences related to ‘Connected’ characteristic for upper and lower quartile mean scores

‘Connected’ <i>m</i> = 4.52, <i>SD</i> = .526		
<i>Guatemala product preference</i>	<i>Upper 25% (N = 64, =5.0)</i>	<i>Lower 25% (N = 75, <4.25)</i>
1 st ‘would most like to have’	G2 Tunic Dress (n = 12, 18.8%)	G2 Tunic Dress (n = 10, 13.3%)
2 nd ‘would most like to have’	G16 Coat (n = 10, 15.6%)	G16 Coat (n = 10, 13.3%)
3 rd ‘would most like to have’	G1 Jacket & Pants (n = 4, 6.3%)	G20 Table (n = 7, 9.3%)
4 th ‘would most like to have’	G20 Table (n = 4, 6.3%)	G28 Skirt & Bodice (n = 6, 8.0%)
5 th ‘would most like to have’	G29 Wrist Cuff (n = 4, 6.3%)	G8 Pillow (n = 4, 5.3%)
<i>Peru product preference</i>	<i>Upper 25% (N = 63, >5.0)</i>	<i>Lower 25% (N = 74, <4.25)</i>
1 st ‘would most like to have’	P47 Tank Dress (n = 25, 39.7%)	P47 Tank Dress (n = 22, 29.7%)
2 nd ‘would most like to have’	P42 Vertical Dress (n = 14, 22.2%)	P42 Vertical Dress (n = 10, 13.5%)
3 rd ‘would most like to have’	P57 Long Poncho (n = 5, 7.9%)	P40 Tights (n = 7, 9.5%)
4 th ‘would most like to have’	P40 Tights (n = 3, 4.8%)	P60 Apron (n = 7, 9.5%)
5 th ‘would most like to have’	P56 Tassel Belt (n = 3, 4.8%)	P58 Table Runner (n = 5, 6.8%)

For ‘Cause’ characteristics, as shown in Table 16, millennial consumer product preferences for Guatemala were the coat with co-designed textile insets, the co-designed tunic dress of vintage cultural textiles, and co-designed jacket and pants of vintage cultural textiles. Both upper and lower quartiles selected the table with co-designed textile insets for fourth place, and home décor pillows with co-designed textile insets for fifth place. Peruvian products selected by millennial consumers were the co-designed silk-screened tank dress, co-designed vertical stripe dress, and co-designed silk-screened tights. Three authentic products, long poncho, table runner, and sofa shawl were handcrafted by Peruvian artisans and selected for fourth and fifth place in both upper and lower quartiles of the ‘Cause’ variable.

Table 16. Millennial consumer product preferences related to ‘Cause’ for upper and lower quartile mean scores

‘Cause’ factor <i>m</i> = 3.79, <i>SD</i> = 1.109		
<i>Guatemala product preference</i>	<i>Upper 25% (N = 79, >4.5)</i>	<i>Lower 25% (N = 69, <3.0)</i>
1 st ‘would most like to have’	G16 Coat (n = 16, 20.3%)	G16 Coat (n = 10, 14.5%)
2 nd ‘would most like to have’	G2 Tunic Dress (n = 9, 11.4%)	G28 Skirt & Bodice (n = 9, 13.0%)
3 rd ‘would most like to have’	G1 Jacket & Pants (n = 7, 8.9%)	G2 Tunic Dress (n = 8, 11.6%)
4 th ‘would most like to have’	G20 Table (n = 5, 6.3%)	G20 Table (n = 7, 10.1%)
5 th ‘would most like to have’	G9 Pillow (n = 4, 5.1%)	G12 Pillow (n = 5, 7.2%)
<i>Peruvian product preference</i>	<i>Upper 25% (N = 78, >4.5)</i>	<i>Lower 25% (N = 78, <3.0)</i>
1 st ‘would most like to have’	P47 Tank Dress (n = 29, 37.2%)	P47 Tank Dress (n = 21, 30.4%)
2 nd ‘would most like to have’	P42 Vertical Dress (n = 21, 26.9%)	P42 Vertical Dress (n = 12, 17.4%)
3 rd ‘would most like to have’	P40 Tights (n = 8, 10.3%)	P40 Tights (n = 6, 8.7%)
4 th ‘would most like to have’	P46 Sofa Shawl (n = 5, 6.4%)	P57 Long Poncho (n = 5, 7.2%)
5 th ‘would most like to have’	P60 Long Poncho (n = 4, 5.1%)	P58 Table Runner (n = 4, 5.8%)

For ‘Health’ characteristics, shown in Table 17, co-designed apparel of the coat and tunic dress were selected as first and second by the upper quartile, and first and third in the lower quartile by millennial consumers for Guatemala products. The home décor pillows with co-designed textile insets were selected for both upper and lower quartiles. The chair constructed from a vintage huipile, was selected by the lower quartile. For the Peruvian products, the co-designed silk-screened tank dress and tights, along with the co-designed vertical stripe dress with cultural textile insets received the highest frequency for upper and lower quartiles. The authentic artisan apron was selected by both upper and lower quartiles and the authentic artisan long poncho was selected by the lower quartile. The upper quartile selected the authentic artisan tassel belt and a co-designed necklace in fifth place, the only jewelry selected by any of the factor variables.

Table 17. Millennial consumer product preferences related to ‘Health’ characteristic for upper and lower quartile mean scores

‘Health’ factor <i>m</i> = 3.80, <i>SD</i> = .850		
<i>Guatemala product preference</i>	<i>Upper 25% (N = 83, >4.5)</i>	<i>Lower 25% (N = 64, <3.0)</i>
1 st ‘would most like to have’	G16 Coat (n = 14, 16.9%)	G16 Coat (n = 12, 18.8%)
2 nd ‘would most like to have’	G2 Tunic Dress (n = 13, 15.7%)	G28 Skirt & Bodice (n = 7, 10.9%)
3 rd ‘would most like to have’	G28 Skirt & Bodice (n = 8, 9.6%)	G2 Tunic Dress (n = 6, 9.0%)
4 th ‘would most like to have’	G1 Jacket & Pants (n = 4, 4.8%)	G12 Pillow (n = 5, 7.8%)
5 th ‘would most like to have’	G14 Pillow (n = 4, 4.8%)	G21 Chair (n = 5, 7.8%)
<i>Peruvian product preference</i>	<i>Upper 25% (N = 83, >4.5)</i>	<i>Lower 25% (N = 63, <3.0)</i>
1 st ‘would most like to have’	P47 Tank Dress (n = 32, 38.6%)	P47 Tank Dress (n = 24, 39.7%)
2 nd ‘would most like to have’	P42 Vertical Dress (n = 19, 22.9%)	P40 Tights (n = 11, 17.5%)
3 rd ‘would most like to have’	P56 Tassel Belt (n = 5, 6.0%)	P42 Vertical Dress (n = 7, 11.1%)
4 th ‘would most like to have’	P60 Apron (n = 5, 6.0%)	P57 Long Poncho (n = 5, 7.9%)
5 th ‘would most like to have’	P41 Woven Necklace (n = 4, 4.8%)	P60 Apron (n = 4, 6.3%)

These analyses did not find unique product preferences for each of the five factors of Cultural Creative values and characteristics. Instead, the same products held similar appeal across the millennial product preferences within each country of origin for each of the 5 factors. The product preferences affirmed millennial consumers selected co-designed textiles designed into modern silhouettes in apparel, contemporary furniture, and home décor products. The same was true for cultural textile products with low millennial consumer preference. Millennial consumers selected few of the products in categories of accessories, bags, and jewelry. This demonstrates a change in consumer preferences that relates to fair trade and artisan organizations. These analyses also affirm new opportunities for cultural textile artisans and organizations to develop apparel and home décor products which may have great market appeal for millennial consumers.

The top five product preferences for Guatemala were similar for each of the five factors between upper and lower quartiles of mean scores within each composite variable. The top five products for frequency are displayed in Figure 18. Products with co-designed textiles inset into

apparel ranked the highest for all five factors, followed by vintage textiles designed into a modern silhouettes and shapes in apparel. The table, with co-designed textile inset in the top, had high preference in relationship to each of the five composite variables. The skirt and bodice, which ranked in the top five products for Ethnic for the upper quartile and in the top five for all factors in the lower quartile, was constructed from authentic Guatemalan textiles. The bodice was styled for the exhibition by a merchandising student out of a vintage religious stole with a modern silhouette.



Figure 18. Millennial consumer product preferences for ‘would most like to have’ of Guatemalan cultural textile products (left to right): coat (G16), tunic dress (G2), skirt and bodice (G28), jacket and pants (G1), table (G20)

Frequency analysis of Peruvian product preferences for ‘would most like to have’ found highest preference of two co-designed modern silhouette dresses. These dresses were co-designed with cultural artisans by students in the apparel design program. The tank dress was silkscreened with an authentic Peruvian textile design on the front of the dress. The vertical stripe dress was in actuality an authentic artisan table runner that was inset into center front and back of a contemporary dress.

The student designer chose a contrasting textile in color and texture to mix with the cultural textile. The long poncho, sofa shawl, apron, table runner, and tassel belt reflected products preferences were designed and constructed in Peru by textile artisans. The tights, selected in all factors by the lower quartile, were silkscreened with a traditional Peruvian textile design. The co-designed products in the Peruvian section incorporated incremental improvements in process from the sustainability-oriented innovation using technology to apply textile design to contemporary garments in the tank dress and tights. The top six Peru product preferences of Millennials are displayed in Figure 19.



Figure 19. Millennial consumer product preferences for ‘would most like to have’ of Peruvian cultural textile products (left to right): silkscreened tank dress (P47), vertical stripe dress (P42), long poncho (P57), apron (P60), silkscreened tights (P40), sofa shawl (P46)

Limitations

Product preferences of millennial consumers were limited to time, space, and place for the exhibition. Participants of the study were limited to visitors to the exhibition that were primarily university students and may not reflect the attitudes of the public or be generalized for all millennial consumers. The research is also limited by the 51 products displayed in the exhibition and are not representative of all cultural textile products. The study is limited to the

two countries of Guatemala and Peru and may not represent consumer preferences of cultural textile products from other countries.

Implications and Future Research

Exploratory factor analysis revealed a five-factor solution to evaluate values and characteristics of millennial consumers. Principal component analysis, using Varimax rotation, of cultural creative values and experiences identified five factors: 1) 'Ethnic', 2) 'Sustainable', 3) 'Connected', 4) 'Cause', and 5) 'Health'. The statements contained in each factor were identified and created into five composite variables to examine the relationships of cultural textile product preferences for 'would most like to have' with each factor.

The characteristics of millennial consumers related to cultural creative values and experiences were examined and found high scores for internet use, internet shopping, wearing fashionable clothing, and travel that offers adventure. Exploratory factor analysis found millennial consumers are not one group but have values and goals related to five factors. The results support millennial consumers are technologically well informed, connected, and effective with digital media (Brown & Watson, 2010; Parment, 2011). Cultural textile artisans and organizations may be effective in marketing to millennial consumers through websites that offer fashionable apparel incorporating cultural artisan textiles in modern silhouettes.

In addressing the preferences of millennial consumer for cultural textile products, they would most like to have from Guatemala and Peru, co-designed apparel, co-designed furniture, and co-designed home decor had the highest frequencies. Millennials reflected different preferences in cultural textile products than previous studies that found preferences for accessories, jewelry, and small gifts (Lee & Littrell, 2006; Littrell & Miller, 2001). Preferred apparel products had extended attributes of traditional textile designs and techniques with adaptations of silhouettes and closures (Kotabe & Helsen, 1998). Each of the apparel products

reflected current fashion trends and indicates cultural textile products will have higher appeal to millennial consumers if they incorporate fashion trends.

The relationship of cultural creative values with millennial consumer preferences for cultural textile products were co-designed apparel products incorporating current fashion trends across all five factors and mean scores. Findings confirm consumers are more likely to prefer fashionable attire and less likely to prefer authentic ethnic clothing. This value was reflected in a low mean score for “I like to wear ethnic clothing” (Littrell, Ma, & Halepete, 2005). Millennials did not select ethnic jewelry, accessories, or home furnishings that were preferred in previous studies of cultural product websites (Lee & Littrell, 2006). Products that were innovated in process and product design using the sustainability-oriented innovation model included the coat, table, and jacket and pants. Co-designed products from Guatemala with co-designed textile insets accounted for 43.8% product preferences for ‘would most like to have’. Product preferences from Peru for ‘would most like to have’ found 44.4% for co-designed apparel. Millennials showed a preference for apparel items from Peru that reflected current fashion trends and modern silhouettes. The size of the Peruvian weavings inset into the vertical stripe dress was smaller than most hand woven textiles from Peru. Insets of smaller weaving by cultural textile artisans might allow the combination of handcrafted textiles combined with modern silhouettes and fabrics that are comfortable to wear and easily constructed into garment details.

The co-designed apparel products with Peruvian artisans that ranked highest for ‘would most like to have’ were a modern silhouette dress and tights. These products could be produced at a moderate price level and might benefit artisan textile organizations with increasing sales, ultimately leading to increased income for cultural textile artisans. The knit tank dress and tights (Products P40 and P47) were co-designed apparel products with silk-screened graphic designs of

Peruvian textile weavings. The graphic design was an authentic textile design from the artisans in Cusco.

Fine art reproduction of weavings can be copyrighted in the U.S. for the cultural textile artisans who create the weaving designs and patterns to have their textile designs legally protected as intellectual property. Reproduction of cultural artisans' weaving designs could result in a limited edition printed product to sell at a lower price level that would make these products available to more consumers than authentic cultural woven products that take considerable time to produce and may reach production capacity with the artisans. Utilizing innovation and digital technology to reproduce the weaving designs might allow cultural textile artisans and organizations to reach more consumers and provide additional income for the artisans.

The relationship of cultural creativity characteristics for millennial consumers found similar product preferences across the five factors identified with this research. Millennial consumers have similar values for cultural creativity as found in Ray and Anderson (2000). Ray and Anderson's research did not include this generational cohort of consumers because they were not of age at the time of the study. Cultural textile product preferences of millennial consumers reflect preferences related to incorporating co-design into process and product innovation. This may indicate that millennial consumers' high use of internet for shopping and awareness of fashionable clothing trends could expand markets for cultural textile artisans on the internet. Awareness of cultural textile products may also be reflected in fashion trends for millennial consumers who have easy access to expanded product awareness through the internet and e-commerce websites.

Future research is recommended to investigate millennial consumers regarding price points for cultural textile products as well as their interest in cultural artisans' well-being.

Future research may investigate the development of lower priced apparel items using digital textile printing technology and the effect of this process for cultural textile artisans and organizations. Further studies could explore millennial consumers' product preferences with intention to purchase of cultural textile products from other countries and in expanded product categories. Millennial consumers' research could also explore product preferences and intention to purchase in e-commerce web sites of cultural artisan products.

CHAPTER 5

SUMMARY AND CONCLUSION

This chapter presents a summary of the study and important conclusions of this practice-based research. The specific research conducted for the three-article dissertation format is presented to compile the distinct perspectives and conceptual frameworks related to product design and consumer preferences of cultural textile products. Conclusions of the findings leads to discussion for implications for action. Recommendations for future research are presented as well as limitations of the study.

Summary of Research

For the past thirty years, artisans have worked with alternative trade organizations and principles of fair trade to reach consumers of cultural textile products. The fair trade industry in hand crafted textiles faces competition from mass-producing importers. Artisans want to continue to practice their tradition and heritage and be paid fairly for their textile products. However, there are questions as to how to innovate these textiles and product design processes to compete in the global market and increase income to the artisans and artisan organizations.

The overarching aim of this practice-based research was exploring new product design processes and product categories of cultural textiles to gain increased access to global markets for artisans. The research was developed with the framework of sustainability-oriented innovation to incrementally improve the processes currently used by cultural textile artisans. Research based guidance in product design decision-making will aid cultural artisans to develop strategies to expand new markets (Littrell & Miller, 2001).

The concept of co-design was explored in working directly with cultural artisan textile groups in Guatemala and Peru and examining consumers' preferences. The research sought to understand if co-designed textiles and products would be preferred over authentic, traditional

cultural textile products that are currently being marketed through fair trade organizations. The purpose of this research was to understand consumer preferences of a variety of cultural textile products, both co-designed in textiles and product design from two countries with rich history of cultural textiles, Guatemala and Peru.

Research questions were formulated according to three distinct perspectives and theoretical frameworks: 1) Co-Design with Sustainability-Oriented Innovation, 2) Desire for Unique Consumer Products, and 3) Millennial consumers' Cultural Creative values. To explore the process of innovating the fair trade supply chain, the co-design process for cultural textiles was implemented with the Guatemalan weavers through communication of fashion trends and selection of colors along with modifications of traditional weaving layouts. Co-design involves joint inquiry and imagination in which diverse people explore and define a problem and collaboratively develop and evaluate solutions (Steen, 2013). Products were designed with insets of the textiles by the researcher in a variety of functions and with considerations of sustainability, price, and quality. Peruvian textile artisans worked with two apparel design students to co-design unique products with cultural textiles. The co-design process with apparel design students included creating graphic textile designs from the artisans' textiles and screen-printing to apparel. The Peruvian artisans worked with the student designers to make unique jewelry and accessories for the exhibition.

Research questions relating to the co-design experience explored the experience of consumers as participants in the study and experiences of the designers working with artisan organizations. Participants' product preferences were examined to determine if co-designed textile products were preferred over authentic cultural textile products. In addition, the research

explored consumer preferences to suggest improvements to the traditional fair trade product supply chain that may assist cultural textile artisans in expanding their markets.

Fifty-one products were displayed in a university gallery open to the public for ninety days. The exhibition featured both Guatemalan and Peruvian areas and grouped products according to color. Both co-designed products and authentic cultural products were displayed. Paper and pencil surveys were collected from a convenience sample over a period of sixty days.

Quantitative analysis found participants' product preferences were primarily apparel, especially co-designed apparel and co-designed furniture. The apparel design students co-designed two dresses with artisans for the Peru products that were preferred for participants 'would most like to own'. Ninety-four percent (94%) of the participants were Millennials who preferred the two co-design dresses from Peru.

Qualitative analysis of participants' written responses to "describe what you find most interesting and attractive" about the product in the exhibition that you would most like to own found consumer preferences for 'Modern mix with traditional' and 'I love the details'. There was clear appreciation of color contrast with the theme of 'pop of color', and an appreciation for products that could be used, and worn in the theme 'versatility'. Consumers described the products as emotional and personal experiences in how they would use or wear the product and their enjoyment of the product. Descriptions included details relating to fashion trends and intricate patterns in the textiles. The participants described the textiles in terms of "tribal", "ethnic", and "native". In the written descriptions, there was a lack of descriptions relating to artisans, the culture, or the country of origin. There were also few specifics regarding environmentally friendly textiles or sustainable practices in the written descriptions.

Qualitative analysis of the designers' perspectives found themes relating to “textiles tell a story”, “women work hard”, experience of “design collaboration”, and “sustainability”. There was a focus of working with women weavers and the respect for passing the knowledge, skill, and tradition of weaving to the next generation. The designer perspective found great appreciation for the difficulty of the work and limitations of time and revenue.

Consumers with high interest and desire to develop a self-concept that is different from others may consider cultural products unique. Consumers with a high desire for unique products may wear or display products not available locally and found during travel for personal wardrobes and home décor (Lynn & Harris, 1997). An eight item scale, Desire for Unique Consumer Products (DUCP) was used to create a goal-oriented difference variable. This desire has an increased tendency for consumers to acquire and use products that are scarce, innovative, and customized along with an increased tendency to shop in small unique retail outlets.

Participants in the study had a high mean score compared to the study validating the scale for Desire for Unique Consumer Products (DUCP). Upper and lower quartiles of the Desire for Unique Consumer Products were analyzed to see if there was a difference of product preferences between the quartiles regarding product attributes. Those with high scores for uniqueness preferred cultural textile products while low scores for uniqueness preferred products with symbols of cultural textiles. The four product attributes of uniqueness, color, function, and quality were positively associated with high effect levels for product preferences of participants.

Co-designed apparel products accounted for 43.8% product preferences from Guatemala and 44.4% of product preferences from Peru. Co-designed textiles from weavers in Guatemala were inset into apparel and home décor pillows. The coat with cultural textile insets received high rankings for ‘uniqueness’, ‘function’, and ‘quality’. The vertical stripe dress with hand

woven textile insets from Peru was highly selected for ‘color’, ‘function’, and ‘quality’. The tank dress and tights with silkscreened Peruvian textile designs ranked as preferred products for ‘uniqueness’, ‘color’, ‘function’, and ‘quality’ and represent a possible new product category for cultural textile artisans.

The majority of participants were female, 86%, who reflected a high preferences for apparel that incorporated cultural textiles in modern silhouettes. Males, who accounted for 14% of the participants, selected furniture, home décor pillows along with hand woven ponchos for their product preferences for ‘would most like to have’.

Cultural creativity of millennial participants was analyzed with 22 statements of values and experiences previously used to research consumers of fair trade and cultural artisan products. Millennials consumers scored high for adventurous travel, shopping and use of the internet, and wearing fashionable clothing. The values that scored low were book buying, holistic health practices, wanting to know how products are made, and wearing ethnic clothing. The product preferences selected for ‘would most like to have’ for Guatemalan products were 46.4% apparel, 30.6% home décor pillows, 12.8% furniture, and 5.6% accessories. Peruvian products millennials selected for ‘would most like to have’ were 70.4% apparel, 16.7% accessories, and 5.8% furniture. Product preferences with highest percentage selected for ‘would most like to have’ were co-designed apparel for both Guatemala and Peru.

The 22 items were reduced with exploratory factor analysis resulting in a five-factor solution: 1) Ethnic, 2) Sustainable, 3) Connected, 4) Cause, and 5) Health. New composite variables averaging the sum of mean scores were created for the five factors with the items included in each value. ‘Connected’ had the highest mean score of 4.52 and ‘Sustainable’ had the lowest mean score of 3.51 for millennials.

Upper and lower quartiles were examined for each of the five composite variables representing the characteristics of each factor to see if there was a difference in product preferences. Millennial product preferences were examined for each country for each of the factors and between upper and lower quartiles of each factor. The same products were preferred across all five factors and between upper and lower quartiles of each factor for both Guatemala and Peru. Product preferences affirmed millennial consumers selected co-designed textiles designed into modern silhouettes in apparel, contemporary furniture, and home décor products.

Summary of Results

Building strong artisan enterprises is positively impacted by working with artisans in international craft marketing especially as the products preferred for this study were co-designed and developed collaboratively with design specialists (Littrell & Miller, 2001). Participants preferred products that recognized current fashion trends and confirms cultural artisans can produce market-driven products as previously found in Aageson (1997) and Paige-Reeves (1998).

Cultural textile artisans in this research created textiles in traditional patterns while modifying traditional colors (Littrell & Miller, 2001; Lynd, 2000). Products were preferred with modern silhouettes and design features that were compatible with consumer tastes and lifestyles of participants (Littrell & Miller, 2001). Participants that supported modern fashion trends (Kotabe & Helsen, 1998) preferred both silhouettes and closures on co-designed apparel. Products that were modified to cross cultural traditions were preferred with the coat, jacket and pants, and the dresses that mixed modern silhouettes with traditional cultural textile patterns (Littrell & Dickson, 1999).

Sustainability-oriented innovation provided a working framework for textile and product design with cultural textile artisans for process and product innovation in disseminating color inspiration and weaving layouts to the artisans with digital technology and modifying traditional weaving practices for textile insets that will increase production and provide more income to artisans (Klewitz & Hansen, 2014). This research will continue with new textile design and development with the Guatemalan weaving organization and may result in further organizational innovation.

Co-design allowed joint inquiry between the weaving organization and designers to innovate the textile design and weaving process. Through co-design, diverse people explored and defined the problems with cultural textile products and collaboratively developed solutions for new product designs preferred by participants (Steen, 2013). Preferences of participants affirmed the co-design process allowed for opportunities to learn and solve problems collectively with the researcher and cultural artisan organization to develop design outcomes with deeper consumer satisfaction (Niinimäki & Hassi, 2011).

The experience of designers and the weavers who continue to work with this practice-based research have the possibility of selling handcrafted textiles in the international market and maintaining their cultures and traditions while earning an income (Lynd, 2000). The smaller weaving layout allows production of small pieces of distinctive traditional weavings with less expense and time for weavers that may increase affordability of developed products for consumers (Lynd, 2000). Traditional designs were maintained with the weavings; however, communication of new color combinations and trends may have increased consumer preference selected for co-designed products.

The description of experiences of designers and consumers' perceptions of products found designers discussed visual representations and did not describe the experience of using the product. Consumers described a personal experience of using the product especially in emotional terms of 'love' that was used in 166 descriptions of products (Chamorro-Koc, Popovic, & Emmison, 2008).

This research found many of the products in the exhibition were included as first, second, or third choice for products preferences of participants. The variety of product preferences suggests companies that create multiple product options for consumers may meet the preferences and allow consumers to differentiate themselves by product choice (Lancaster, 1990). Apparel and furniture were the top product categories, which reflect Tian and McKenzie's (2001) findings that clothing and home furnishings may be marketed on the basis to express aspects of the self without spending a large amount of disposable income to purchase the product. Unique products embedded with cultural textiles were identified as versatile and functional products. Consumers with a high need for unique consumer products have favorable attitudes toward novel products (Halepete et al., 2009, Workman & Kidd, 2000).

Product preferences positively associated with quality confirm consumers purchase cultural products due to a high level of handcrafted workmanship and perceptions of high product quality (Dickson & Littrell, 1996; Kim et al., 1999; Lee & Littrell, 2006). However, results from this study did not relate to Lee and Littrell (2006) who identified consumers of cultural products were most interested in buying jewelry, scarves, and bags. The variety of products found that consumers are interested in apparel, furniture, and home décor. Accessories, jewelry, and bags (handbags and small item bags) received very few selections for product preferences from participants.

The Desire for Unique Consumer Products showed participants favored products as different, rare, and scarce (Lynn & Harris, 1997). High scores for uniqueness indicate high preferences for cultural handcrafted textile products considered as different and scarce. Participants had a high sum of mean score of 31.2 for Desire for Unique Consumer Products (DUCP) compared to the study confirming the development of the scale with a sum of mean score of 26.2 (Lynn & Harris, 1997). Lynn and Harris found strong Desire for Unique Consumer Products indicated highly competitive and status-oriented people. Product preferences for this study may provide good directions for artisans and designers for future product design and development due to the high scores of participants.

The majority (94%) of participants identified as Millennial generation, born 1980 and later. There are few studies of millennial cultural creative values related to product preferences of cultural textile products. The exhibition was open to the public and expectations were to have representatives from all generational cohorts. The study sought to understand cultural creativity across generational cohorts, which has typically been described as a baby boom generation sub group. However, the sample for the study was primarily participants who identified themselves in the millennial generation. Results of millennial product preferences of cultural textile products will add to the body of knowledge regarding millennial consumer preferences of cultural textile products. In addition, results of cultural creative values and goals of cultural creativity will add to the body of knowledge.

Millennials found five factors for cultural creative values and experiences. The five factors were 'Ethnic', 'Sustainable', 'Connected', 'Cause', and 'Health'. Product preferences of millennials for 'would most like to have' were co-design apparel, co-design furniture, and co-design home décor pillows. The relationship of the five factors with product preferences did not

find different preferences related to the characteristics of cultural creative values and characteristics for the five factors. Millennial product preferences for this study aligned with preferences found in the other perspectives of Co-design and Desire for Unique Consumer Products. The high mean score for ‘Connected’ factor for millennials reinforced internet consumers have flexible and fast ways to participate in the global marketplace for products (Simeon, 1999).

Apparel with embedded cultural textiles preferred by millennials support the findings of fair trade businesses that emphasizes uniqueness, quality, and ethnicity that positively influence consumers (Littrell, Ma, and Halepete, 2005). Millennials support artisan development programs with focus on creativity and problem solving for product design and development in less developed countries. These findings suggest there may be a large consumer market that is interested in meshing cultural interests with product decisions (Dana, 2000). Millennial high scores for cultural creative values and goals affirm consumers’ sense of social responsibility related to products’ ethnic, aesthetic, function, and symbolic characteristics (Littrell & Dickson, 1999). This study contributes and expands the current knowledge base regarding cultural products. In the past, cultural textile artisans have primarily developed jewelry and accessories. This study suggests consumers may have strong interests and desire cultural products in apparel and furniture product categories that are unique or exotic.

Conclusions

The implementation of the co-design process was positive according to consumer preferences. This process may assist cultural weaving associations in innovation of products and organization. The process of communicating fashion color trends and allowing cultural textile artisans to produce traditional designs may provide incremental improvements in the product

development process with potential for increased access to and interest of a global market (Lynd, 2000). Smaller sized weaving insets into contemporary products received high levels of preference from participants. Preferences for home furnishings products provides support for varied product development and incremental improvements in new product categories which may expand market demand for cultural textile products.

Participants in the study preferred vintage muted colors, earth tone colors, and black and white with a pop of color. These preferences are important to artisan organizations as they develop new products. Muted and earth tone colors will appeal to a broader target market. However, the results of this study found consumers enjoy a contrast of colors and colors that pop. Color trends may be modified to reflect more muted, natural colors, with a small textile that contrasts and highlights the traditional cultural pattern that may fit with contemporary consumers' wardrobes and interior. Co-design processes will allow for changes in color combinations as fashion trends change. New product categories were facilitated by combining artisan textiles from Guatemala and Peru with other materials and processes to produce apparel and furniture products with local manufacturing.

Sustainability-oriented innovation incorporating the process of co-design provides a theoretical framework that is intertwined with practice (Leavy, 2009). This practice-based research found joint creation of value with the weaving organization and the researcher, an expected result of co-design (Prahalad & Ramaswamy, 2004). Co-design provides a framework for designers and new enterprises to work with cultural artisans to innovate the design process and supply chain to achieve social and economic goals for cultural artisans. Maya Traditions has collaborated with many new ethical fashion companies as design partners to create weavings in modern designs and fashion colors. Guidelines for the weaving organization are informed by

findings from this research and innovative processes and are now being developed to innovate the supply chain, especially for e-commerce ethical fashion businesses.

Cultural textile artisans have excellent skills in handcrafts including cultural patterns and symbols. However, cultural artisans may not have training or the resources in product design and production to produce high quality and functional products that meet the demands of global consumers. Artisans who live in remote villages may not have access to the internet to gain information regarding consumer tastes and current market and fashion trends. Therefore, the products they make for the global market may not meet the needs and desire of contemporary consumers, who are interested in cultural, ethnic, and high quality products. Working with artisans in Guatemala and Peru in practice-based research provided an opportunity for contemporary consumers to evaluate cultural products for uniqueness, color, function, and quality in a setting where they could see, feel and touch the textiles.

Participants in the study preferred apparel that embedded small weaving strips, co-designed textile insets, symbolic graphic designs of weavings, and repurposed vintage textiles in contemporary silhouettes. Attention to detail of fasteners, construction, and fit were incorporated into the garments by the designers involved with the exhibition. The preferred products featured cultural textiles that were constructed in the U.S. by trained designers who had developed skills in pattern making and industrial practices of garment construction. Participants preferred the co-design process of mixing traditional patterns of textiles, either handcrafted textiles or graphic representations. Designers who are trained in color and trend forecasting as well as fundamentals of art and design determined colors in the textile insets.

Designers developed a variety of products with emphasis on new product designs of small accent furniture and tabletops to give participants choices in function. The two furniture

products in the Guatemala area received high rankings from study participants. The small table with small weaving insets in the tabletop is a product design that has an opportunity for artisan development. Coats and jackets with small weavings inset into the design also have the potential for product development and market demand.

The research found high consumer preference for the silk-screened knit tank dress and tights (P40 and P47) with graphic designs of cultural textile patterns. The graphic design was patterned from authentic Peruvian textile designs from the artisans in Cusco. These graphic designs can be copyrighted in the U.S. so the pattern would be legally protected. Reproduction of the graphic design could result in a product at a lower price level to reach global consumers.

The research found artisan textile organizations would benefit from working directly with trained designers for product design and development. Design collaboration may be mutually beneficial for artisans creating unique hand crafted textiles that are customized to be incorporated into contemporary products to fit with the lifestyles of modern global consumers.

Implications

Implications suggests fair trade artisan organizations may refine their business plans and supply chain to become more viable and sustainable. Artisan organizations are often directed by volunteers interested in improving the livelihoods and living conditions of cultural artisans in undeveloped countries. They are working with an outdated business model and producing products that are directly competing with mass produced imports. A new business model, based on sustainability-oriented innovation, would utilize the expertise of artisan craftpersons and incorporate handcrafted textiles into contemporary products for global consumers. Artisan organizations would benefit from expertise in design, product development, production, and

e-commerce to expand artisan businesses and provide economic viability for artisans and design collaborators.

The fair trade supply chain may be modified by incorporating incremental improvements in process, products, and organizations for market driven cultural textile products. The revised supply chain would incorporate technology to inform artisans regarding fashion trends and design details to assist the artisans in creating contemporary products for the global markets. Previously, the supply chain started with input from the producers. With the revised supply chain, the input for cultural textile products is a design collaboration between the artisans, the organizations they work with, and design partners who are small to medium enterprises. Figure 20 shows the revision of the fair trade supply chain incorporating co-design and sustainability-oriented innovation with the use of technology.



Figure 20. Sustainability–Oriented Innovation Supply Chain

Maya Traditions in Panajachel, Guatemala now uses a questionnaire for designers when they are interested in co-designing a textile to determine which weaving group is best suited to produce the textile. Maya Traditions is working to improve their quality and style of textiles and products for more contemporary customers who are trend conscious. The weaving organization

is producing exclusive textile designs of their own called ‘liensos’, which are 17” to 19” wide and 90” long. These textiles are best sellers to companies such as Ara Collective that produce home décor products that requires larger weavings for throws and pillows.

Maya Traditions works with principles of sustainability by fulfilling the ten principles of fair trade specifically in determining fair wage for the weavers. “Working with artisans on a fair trade basis is so drastically different from brands designed in the United States” (Textile Trekker, 2014). The co-design process in textile and product development for this exhibition is beneficial to producing products to meet tastes and lifestyles for contemporary consumers (Lynd, 2000).

This study led to one of the student designers interning and subsequently being hired by Maya Traditions as Product Development and Sales Manager. In professional practice, she coordinates with the weaving groups in Guatemala to innovate the process of co-design and expand opportunities for the artisans. The co-design process continues to be utilized in practice by the researcher in an emerging apparel and home décor enterprise incorporating the results of this study.

Limitations

Exposure of consumers to artisan products was limited to a specific time, space, and place in a university gallery. Participants were able to see, feel and touch cultural textile products under museum quality lighting in an inviting environment. Signage in the exhibition attended to information about the artisans, communities, processes, and craft techniques of the textile products. Exhibition design research allowed participants to experience the products and is desirable for practice-based research. Participants were limited to visitors to the gallery who voluntarily chose to complete the survey and may not be representative of the entire population that visited the exhibition. This study was limited in a small sample for swing, baby boom, and

Gen X generations. The results are specific to the sample of the study and limited by the products, product categories, and colors presented in the exhibition.

Consumer preferences for ‘most willing to have’ was limited by not having pricing attached to each product that may have altered consumer preferences. Attitudes alone may be poor predictors of buyer behavior (Shaw & Clarke, 1999). However, in research studies, attitudes and intention toward ethical or cultural products may be measured without explicitly taking of the price of the products into consideration (Browne et al., 2000).

Recommendations for Future Research

The study could be improved by displaying cultural products in a public building with visitors representing a broader population to gain more insights in consumer preferences based on demographics. The products displayed in the exhibition were constructed from the first co-design process with the weaving organizations in Guatemala and Peru. This research has continued and has improved the textile co-design process so future research could incorporate new textile designs, products and new product categories that have been developed.

This research could expand the consumer population by using pictures of the products for the study. Photos could replicate the study and allow participants to choose preferences within product categories and color themes. Research could explore consumers’ preferences of cultural textiles to be embedded into their choice of product for function or size for apparel. This would allow for customization of cultural textile products by consumers. However, pictorial and visual research would lose the ability for consumers to see, feel and touch the tactile qualities of cultural textiles that was found in the exhibition research.

Future research could explore the cultural textile artisan experience in working through the co-design process including how artisans adapt to the change in weaving layouts and

traditional designs in new colors. Additional research could explore the training of younger artisans and the passing of craft techniques to younger generations. There is concern that young indigenous people will not be interested in continuing the craft. Practice-based research could work with these younger weavers to determine how their work can be sustainable and rewarding as well as determining the values and goals for their lives as well as their motivation in continuing the handcraft of weaving for their livelihood. Research could explore working with textile artisans in other cultures and countries. The researcher has begun working with Vietnamese embroidery artisans in producing products from traditional Vietnamese designs. Future research could explore testing hypothesis for process models related to co-design and consumer preferences that could be applied for artisan work.

This study was a culmination of working with artisans and organizations that support cultural artisans in getting their textiles to market. It has been a learning experience for the researcher and the two design students as each of them has a passion to continue with this work and to explore possibilities to expand markets and increase livelihoods for the textile artisans.

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APPENDIX A – PHOTOS OF GUATEMALA PRODUCTS IN EXHIBITION

CULTURAL TEXTILE PRODUCTS FROM GUATEMALA (G1-G31)

















APPENDIX B – PHOTOS OF PERUVIAN PRODUCTS IN EXHIBITION
CULTURAL TEXTILE PRODUCTS FROM PERU (P40-P60)

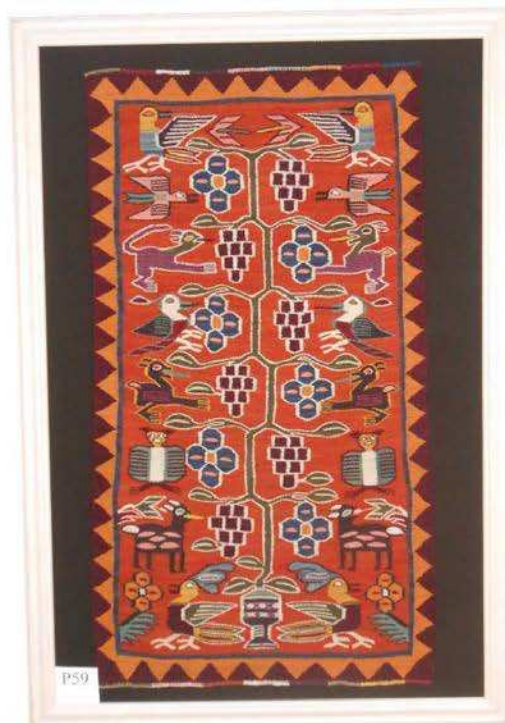












APPENDIX C

GUSTAFSON GALLERY
EXHIBITION APPLICATION FORM

Proposed Exhibition

Title: Journey to Sustainability: Textile Artisan development in Guatemala and Peru

Brief discussion of exhibit theme and content: The Exhibit will feature contemporary products incorporating handcrafted textiles made by textile artisans in Guatemala and Peru. Discussion boards will ask questions to provoke discussion about artisans in underdeveloped countries, sustainable product development (=as culture) and living/working conditions. A continuous media stream will be played showing pictures and video of artisans in their working environments, for example the process of back-strap weaving and spinning of cotton thread.

Exhibitor(s)/Artist(s): Carol Engel-Enright, Cory Hibbard, Averie Floyd, Guatemalan textiles. Jeri Nichols-Park, Bonie Shupe, Peruvian Textiles

Contact Information

Name of contact person: Carol Engel Enright

Address 313 Gifford

Phone # [\(970\) 491-5759](tel:9704915759) Email carol.engel-enright@colostate.edu

Affiliation: CSU

AM Faculty Sponsor* (if required) _____ Carol Engel-Enright _____

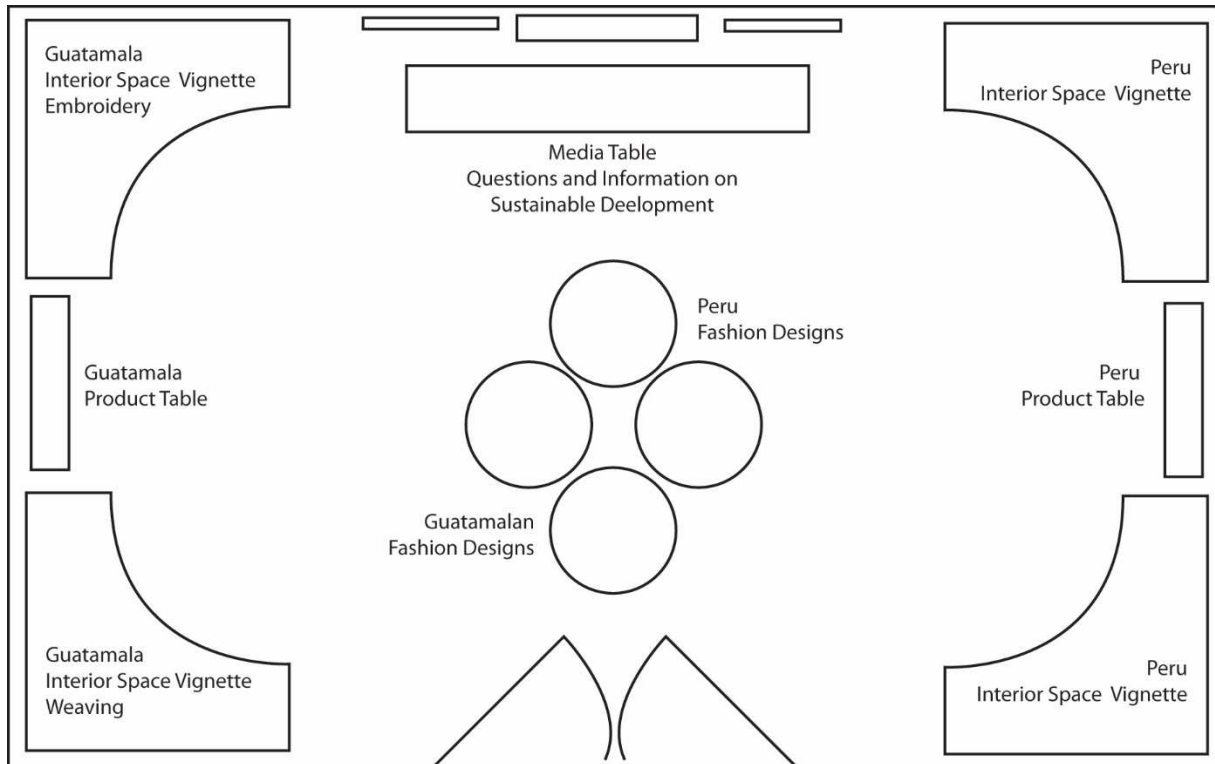
AM Faculty Sponsor's signature _____

date _____ May 15, 2013 _____

Faculty sponsors are required to assume responsibility for communicating with the exhibitor(s)/ artist(s), managing the receipt of exhibition objects, managing the installation, takedown, and promotion of the exhibit, and for the arranging of exhibit-related activities (e.g., reception, gallery talk, etc.), if planned Please see the **Gustafson Gallery Policy Statement.*

Description of Exhibition Plan (attach an additional page to describe exhibition plan, if necessary)

Please describe the general plan for the exhibit and state the type and number of objects to be exhibited, the type and number of fixtures needed, other materials or props to be used in the exhibit, and a space/layout plan appropriate for the room dimensions ($\approx 8.5'h \times 30'w \times 24'd$). Please note if the fixtures will be borrowed from the Department of Design & Merchandising or if they will be provided by the exhibitors. Also, please provide illustrations or photographs of the exhibition plan and objects.



The exhibit will mix home décor, product development, and apparel design incorporating artisan textiles from Guatemala and Peru into contemporary designs and products with consideration to function and marketability for the Western consumer. The exhibit space will be divided in half to give comparison of traditional textile design from Guatemala and Peru. The far wall of the halfway point, near the TV, will incorporate media space and information on sustainable artisan development. At that space there will be a table showing raw materials of textiles and equipment (for example a back strap loom and hand spinning).

Each half of the gallery space will utilize the corners (8ft x 8ft) to set up a vignette of interior space such as a home, office or hotel display, and function, and feature the artisan textile in home products as they would be utilized and visually merchandised in retail stores to appeal to the ultimate consumer. The vignettes will curve at the sides. Each sidewall of the gallery will have a 6 ft. display of items and accessories. The center of the exhibition space will feature four round podiums with models in contemporary clothing designs using artisan textiles.

Requested Exhibition Dates: Please indicated your preference for exhibition dates based upon the time periods listed. The exact dates for the opening and closing of exhibitions may

vary and will be determined by the exhibitor(s)/artist(s) in conjunction with the GG committee.

_____ Winter (January – March)

_____ Spring I (April – May)

_____ Summer (June – August)

x Fall I (September – October) August 15 – October ****This is two weeks earlier than the quarter exhibit. We are asking for an earlier installation date because Bonie Shupe will be leaving for Peru for her internship with the Center for Traditional Textiles in Peru. Thank you for your consideration.**

_____ Fall II (November – December)

Exhibition Budget & Funding

Total anticipated cost _____ \$600 for signage, reception, and exhibit materials _____

Source of funding _____ Personally funded by Carol Engel-Enright as founder/designer of Vivodec, LLC. Vivodec was established and funded as GSSE enterprise initially with an Infectious Disease grant and Rotary International Global Grant, enterprise developed under NEVA, College of Business, 2011 – 1013). Vivodec LLC operates as a social enterprise and is incorporated in the State of Colorado as a partnership with Carol Engel-Enright and Crystal Gardner.

Please attach the following items to this application:

1. An itemized budget for the proposed exhibition, including costs for the transport (receipt and return) of exhibition objects and other items, exhibit planning and installation materials, promotional materials, and opening or closing reception (if planned).

Journey to Sustainability: Textile Artisan Development in Guatemala and Peru

Exhibit Budget

1. An itemized budget for the proposed exhibition, including costs for the transport (receipt and return) of exhibition objects and other items, exhibit planning and installation materials, promotional materials, and opening or closing reception (if planned).

Transportation: \$0

Exhibition Objects: \$300

Signage & Video: \$150

Opening Reception: \$100

Total \$600

2. A completed insurance liability form (link will be supplied) with an itemized list of the value of the objects to be included in the exhibition, and

3. A record of the applicant's previous exhibition work, if available.

Carol Engel-Enright:

2010 Awarded 3rd prize for Queen Sirikit Institute of Sericulture Peacock Standard of Thai Silk Competition for "Golden Wheel of Life"

2009 ITAA Creative Scholarship, Fiber Arts Live Gallery, Seattle, Washington

2009 Selected among ten finalists in the US judging for the Queen Sirikit Institute of Sericulture Peacock Standard of Thai Silk Competition. Her apparel design was sent to Bangkok in June for final judging.

2007 Threads Magazine Design Challenge Finalist "Inspired by Art"

Bonie Shupe Exhibits:

2013 Parachute Dress, Gustafson Gallery

2012 Parachute Dress, Aspen Pointe

PLEASE SUBMIT THE COMPLETED FORM (AND ATTACHMENTS) TO:

Department of Design & Merchandising

c/o The Gustafson Gallery Committee

150 Aylesworth Hall, S.E.

1574 Campus Delivery

Fort Collins, CO 80523-1574

Review of applications will occur as received, on a rolling-basis.

For Official Use Only

Date application received 5/17/13 by GG Committee


Date application reviewed 5/24/13 APPROVED

Comments The requested time period, August 15 - October is approved provided that you are willing to assume responsibility for the take-down of the current exhibit including proper storage of the garments and mannequins; otherwise the gallery may not be available until August 31 (the exact take-down date for the exhibit has not yet been arranged).

When determined, please inform the committee of the specific dates for the opening and closing of the exhibit, as well as the reception, if one is planned.

Please submit a press release for the exhibit to Susan Torntore (CC the entire committee) 1 month prior to the date of the exhibit opening.

journey to
sustainability:



artisan development
*An exhibit of Contemporary Apparel and Home Décor
using authentic hand-crafted textiles
from Guatemala and Peru.
Work produced by faculty and students in the Department of Design & Merchandising*

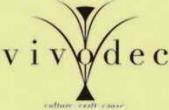
when:
Thursday, September 12 thru Friday, November 15, 2013
Open Monday thru Friday, 9 AM – 4 PM

where:
Gustafson Gallery
318 Gifford, 502 West Lake Street, Fort Collins, Colorado
Opening Reception:
Thursday, September 12, 4:30 – 8 PM

sponsored by:

College of Health & Human Sciences Department of Design & Merchandising Colorado State University

special thanks to:

 **Avenir Museum** of Design and Merchandising **CLOTH ROADS**
A Global Textile Marketplace


APPENDIX E



Research Integrity & Compliance Review Office
Office of Vice President for Research
Fort Collins, CO 80523-2011
(970) 491-1553
FAX (970) 491-2293

Date: September 16, 2013

To: Carole Makela, School of Education
Carol Engel-Enright, Design & Merchandising



From: Janell Barker, IRB Coordinator

Re: Consumer's Preference of Products Designed and Developed of Cultural Textiles from Guatemala & Peru

IRB ID: 114-14H Review Date: September 16, 2013
This project is valid from three years from the review date.

The Institutional Review Board (IRB) Coordinator has reviewed this project and has declared the study exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b)(2): Research involving the use of educational tests,.... survey procedures, interview procedures or observation of public behavior, unless: a) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects.

The IRB determination of exemption means that:

- **This project is valid for three years from the initial review.** After the three years, the file will be closed and no further research should be conducted. If the research needs to continue, please let the IRB Coordinator know before the end of the three years. You do not need to submit an application for annual continuing review.
- You must carry out the research as proposed in the Exempt application, including obtaining and documenting (signed) informed consent if stated in your application or if required by the IRB.
- Any modification of this research should be submitted to the IRB through an email to the IRB Coordinator, prior to implementing any changes, to determine if the project still meets the Federal criteria for exemption.
- Please notify the IRB Coordinator if any problems or complaints of the research occur.

Please note that you must submit all research involving human participants for review by the IRB. **Only the IRB or designee may make the determination of exemption**, even if you conduct a similar study in the future.

APPENDIX F



College of Health and Human Sciences
Department of Design and Merchandising
150 Aylesworth Hall SE • 1574 Campus Delivery • Fort Collins, Colorado 80523-1574
Phone: (970) 491-1629 • Fax: (970) 491-4855 • www.dm.chhs.colostate.edu

Dear Participant,

My name is Carol Engel-Enright and I am a researcher from Colorado State University in the School of Education and Department of Design & Merchandising. The purpose of this exhibition is an exploration with customized artisan textiles in product design. Fair trade textile organizations are interested in reaching larger consumer markets. With this exhibition we have worked the textiles into a variety of apparel and home products. This survey explores your consumer preferences of the products and textiles in this exhibition. The hand crafted textiles are from artisan groups in Guatemala and Peru

We would like you to review the products in this exhibition and complete the survey attached to this letter. Your valued participation will take approximately 15 minutes. Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop at any time without penalty.

Complete the survey and drop it in the 'SURVEY' box. Completed surveys will remain anonymous. While there are no direct benefits to you, we hope to gain more knowledge on how textile artisans can develop consumer products for the marketplace to sustain their livelihoods and support their families. For participation, you may complete the information at the bottom of this page and put it in the 'PARTICIPANT' box for a drawing of gift cards to be given to eight survey participants after the close of the exhibit.

There are no known risks to participate in this survey. The Principal Investigator is Dr. Carole Makela and the Co-Principal Investigator is Carol Engel-Enright, M.S. If you have any questions, please contact Carol Engel-Enright at 970-491-5759 or carol.engel-enright@colostate.edu. If you have any questions about your rights as a volunteer in this research, contact Janell Barker, Human Research Administrator, at 970-491-1655.

Sincerely,

Carol Engel-Enright, M.S.

Complete the following with your contact information for an opportunity to win 1 of 8 gift cards of \$25 for completing the survey. Separate this page from the survey and place in 'PARTICIPANT' box.

APPENDIX G

Select your favorite products in the exhibition

Please rank your favorite products for each of the categories below and write the number displayed on the product (i.e. G 1-32 & P 40-60) for 1st, 2nd, and 3rd choices, 1st choice being the most favorable for you.

Guatemalan Textiles # G1 – G32

	Unique	Color	Function – how the product is used	Quality	Would most like to have
1 st Choice					
2 nd Choice					
3 rd Choice					

Peruvian Textiles # P40 – P60

Rank	Unique	Color	Function – how the product is used	Quality	Would most like to have
1 st Choice					
2 nd Choice					
3 rd Choice					

Choose one product in the exhibition that you would most like to own.

Write the number shown on the product and describe what you find most interesting and attractive about the product:

Please read and circle the number that best reflects your agreement or disagreement with each statement.

1	2	3	4	5
Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree

- | | |
|--|-----------|
| 1. I am very attracted to rare objects | 1 2 3 4 5 |
| 2. I tend to be a fashion leader rather than a fashion follower | 1 2 3 4 5 |
| 3. I am more likely to buy a product if it is rare and/or unique | 1 2 3 4 5 |
| 4. I would prefer to have things made-to-order than off-the-rack/shelf | 1 2 3 4 5 |
| 5. I enjoy having things that others do not | 1 2 3 4 5 |
| 6. I rarely pass up the opportunity to order custom features on products I buy | 1 2 3 4 5 |
| 7. I like to try new goods and services before others do | 1 2 3 4 5 |
| 8. I enjoy shopping at stores with different and unusual merchandise | 1 2 3 4 5 |

We are interested in learning more about your values and goals. For each of the following items, circle a number to rate your agreement or disagreement with each statement.

1 Strongly Disagree	2 Disagree	3 Uncertain	4 Agree	5 Strongly Agree	
					1 2 3 4 5
					1 2 3 4 5
					1 2 3 4 5
					1 2 3 4 5
					1 2 3 4 5
					1 2 3 4 5
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					1 2 3 4 5

Check the category that includes the year you were born:

1980 to present _____ 1965 – 1979 _____ 1946 – 1964 _____ 1945 & before _____

Gender: Female _____ Male _____ Choose not to respond _____

Thank you for viewing the exhibition and participating in this survey.