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Much of the literature dealing with the global production network (GPN) of furniture tends to focus on larger transnational corporations especially in Asia. By contrast, research on the GPN of small and medium sized furniture enterprises like those in Brazil has been sparse even though Brazil is an emerging furniture market that doubled production over the past decade. The locational focus of this dissertation is the Brazilian furniture industry and especially several innovative firms in the Santa Catarina region. From 2011 to 2013, the Brazilian furniture industry in Santa Catarina was responsible for 43 percent of Brazilian furniture exports. More specifically, this dissertation explores several specific research questions. First, it will be argued that the furniture industry is spatially concentrated in Brazil, and that one of the most rapidly growing clusters, especially regarding international sales, is the Santa Catarina region with its emphasis on the São Bento do Sul furniture cluster. Second, based on a mixed-methods approach, it is hypothesized that Santa Catarina has emerged as an internationally connected furniture cluster because it has developed a global production network grounded in process and product innovation, the utilization of web-based technologies, and the development of a strong value production chain grounded in the local economy. Third, it will be argued that the development of any innovative furniture value chain in Brazil, or elsewhere in the Global South, is inherently constrained by the difficulties of developing a market brand that is well-recognized and trusted in Global

North markets, particularly as it relates to distribution networks. Much of this dissertation will embrace a mixed-methods approach based on both an empirically driven analysis of the economic geography of the Brazilian furniture industry, and an interview based approach regarding the competitive strategies of specific firms located in the Santa Catarina region. Such a comprehensive approach will elevate our understanding of how the furniture value chain in Brazil presents both opportunities and challenges regarding global production networks that attempt to link Global South and Global North markets. Particular attention will be focused on the Renar Móveis, Rotta Móveis and Temasa Móveis furniture companies, and the Brazilian Furniture Group located in High Point, NC because they seemed to have birthed furniture companies that have practiced innovative strategies, utilized web-based technologies, and developed various partnerships. It will be argued that these have all been key ingredients in developing a competitive global value chain that has successfully penetrated specific international markets.

GOING AGAINST THE GRAIN? BRAZIL AND THE GLOBAL FURNITURE  
PRODUCTION NETWORK

by

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## DEDICATION

I would like to dedicate this dissertation to my wife Lauren Matthews Sloop and our three amazing children, Noah Paul, Eli Byron and Eliza Jane Sloop.

APPROVAL PAGE

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## CHAPTER I

### INTRODUCTION

In 2012, the international furniture industry generated \$566 billion in revenues where the largest markets in production terms included China, United States, and Germany (Renda et al. 2014). Although the Brazilian furniture industry ranked just ninth in terms of revenues internationally, they are an emerging market having doubled their production values over the last decade (Renda et al. 2014). It is a rapidly growing sector, particularly in the Brazilian state of Santa Catarina where a substantive furniture industry cluster has rapidly evolved (Rocha et al. 2008; Rocha et al. 2012). This locational focus is because Santa Catarina is strategically located near shipping ports, population centers and natural resources. That said, much of the literature dealing with the global production network (GPN) of furniture has tended to focus on larger transnational corporations (TNC) especially in Asia (Coe et al. 2004; Liu and Dicken 2006; Yeung 2009). By contrast, research on the GPN of small and medium enterprises (SMEs) like those in Brazil has been sparse (Murphy and Lawhon 2011; Murphy 2012).

Much of the innovation in the furniture industry often originates in these smaller furniture operations that are frequently more flexible and nimble relative to their transnational counterparts (Wagner and Hansen 2005; Cao and Hansen 2006). Furthermore, furniture exports from low-income and transitional economies that have a

large number of small and medium sized furniture enterprises have increased in recent years (Kaplinsky et al. 2009). However, much of the growth in these SME's has not been without some challenges as many of these companies have struggled to compete with the large, more vertically integrated furniture transnationals that possess significant technology based advantages. Additionally, many of these emerging SME's have limited brand identity and face substantive cultural barriers particularly regarding building relationships with vendors in the Global North.

The locational focus of this dissertation is the Brazilian furniture industry and especially several innovative firms in the Santa Catarina region. From 2011 to 2013, the Brazilian furniture industry in Santa Catarina was responsible for 43 percent of Brazilian furniture exports. In 2015, Santa Catarina had 5,532 companies with 99,000 employees involved in the lumber (e.g., furniture, wood, paper and cellulose) industry (Santa Catarina Brasil 2015). Some of the leading and most innovative furniture companies in this region of Brazil included Renar Móveis, Rotta Móveis and Temasa Móveis that developed niche markets in North America and Europe in recent years. A significant portion of this dissertation will focus on these companies and the Brazilian Furniture Group located in High Point, NC in an attempt to better understand how these companies developed furniture value chains that were able to compete in the global marketplace.

Brazilian furniture firms have numerous physical resources already in place for furniture production along with the advantages of being more proximate to the North American market than their Asian competitors that have been the focus of so much

attention in the GPN literature. Additionally, the utilization of Brazil's wood resources for furniture, and other products, has been of increasing interest due to growing concerns regarding climate change and the depletion of the Amazon rain forest. More specifically, this dissertation explores several specific research questions:

- First, it will be argued that the furniture industry is spatially concentrated in Brazil, and that one of the most rapidly growing clusters, especially regarding international sales, is the Santa Catarina region with its emphasis on the São Bento do Sul furniture cluster.
- Second, based on a mixed-methods approach, it is hypothesized that Santa Catarina has emerged as an internationally connected furniture cluster because it has developed a global production network grounded in process and product innovation, the utilization of web-based technologies, and the development of a strong value production chain grounded in the local economy.
- Third, it will be argued that the development of any innovative furniture value chain in Brazil, or elsewhere in the Global South, is inherently constrained by the difficulties of developing a market brand that is well-recognized and trusted in Global North markets, particularly as it relates to distribution networks.

Much of this dissertation will embrace a mixed-methods approach based on both an empirically driven analysis of the economic geography of the Brazilian furniture industry, and an interview based approach regarding the competitive strategies of specific firms located in the Santa Catarina region. Such a comprehensive approach will elevate

our understanding of how the furniture value chain in Brazil presents both opportunities and challenges regarding global production networks that attempt to link Global South and Global North markets.

Particular attention will be focused on several highly innovative Santa Catarina furniture companies because they birthed furniture companies that practiced innovative strategies, utilized web-based technologies, and developed various partnerships. It will be argued that these have all been key ingredients in developing a competitive global value chain that has successfully penetrated specific international markets.

Overall, this dissertation will attempt to fill a gap that currently exists in the current furniture literature on global production networks and global value chains relating to export-oriented SMEs operating in a Global South context. Geographers have long been interested in the interconnectedness of various spatial interactions at different scales, and an explicitly spatial approach regarding this topic could provide a unique contribution to the growing literature on furniture production in emerging economies.



## CHAPTER II

### LITERATURE REVIEW

Although the literature is not extensive regarding small and medium sized enterprises (SMEs) in the furniture industry in the Global South, a significant amount of literature has focused on global commodity chains/ value chains and production networks. This literature review will highlight the interconnectedness of furniture related global chains/ networks particularly with respect to information technology. Additionally, a significant amount of literature has explored the role that agents/ actors play in building trust and developing connections between furniture buyers and sellers. This literature review will explore the role of these agents as key ‘deal-makers’ particularly in the Global South with an emphasis on Brazil. The literature review will next look at the geographic marketability of production networks and agents with particular attention focused on the emergence of the industry cluster literature particularly as it relates to the furniture industry related to SMEs in the Global South. Finally, I discuss the role of innovation and competitive advantage for SMEs in the Brazilian furniture industry.

This dissertation seeks to add to the growing literature on the interconnectedness of global chains/networks, IT, agents, and industry clustering by identifying specific examples of how these three topics are represented within the Brazilian furniture industry.

As presented in this literature review, there are numerous studies on the furniture industry of entire nations or furniture clusters as a whole. Although research has been conducted on the São Bento do Sul furniture cluster (Rocha et al. 2012; Morrison 2004; Rocha et al. 2008; Rocha et al. 2009) in Santa Catarina, Brazil, these studies did not take into account information technologies as a source of innovation. Nor did these studies expound on the spatial concentration of São Bento do Sul in relation to other furniture companies within Brazil or even the state of Santa Catarina.

### **Commodity Chains, Value Chains and Production Networks**

The global commodity chains, value chains and production networks literature can provide a good conceptual framework by better explaining the creation, valuation and movement of furniture goods on a broad spatial scale. It is important to understand the Brazilian furniture industry at this level before delving deeper into the complexities of what really exists ‘on the ground.’ These value chains help generalize the processes so that researchers, policy makers, and governments can develop a general understanding of how goods are produced and brought to market.

#### *Commodity Chains*

According to Gereffi and Korzeniewicz (1994), a commodity chain incorporates the design, production, and marketing of a product with all its associated activities as they function across space. Gereffi (1999) further asserts that there are two main types of commodity chains: producer-driven and buyer-driven. Producer-driven commodity

chains usually involve transnational manufacturers who are central in making sure that all production networks link together. Buyer-driven commodity chains are characterized by large retailers and are highly competitive with decentralized global factories that obtain components from widely scattered sources (Gereffi 2009). Global commodity chain analysis is largely focused on the industry's organizational structure in how their supplies move from producer to buyer. The main interest lies in how the resulting commodity relates to the places involved in its value creation (Pratt 2008). In other words, interest focuses on how global industries organize themselves, along with identifying the actors and relationships of production and distribution (Coe et al. 2008). The main emphasis of the global commodity chain (GCC) approach focuses on the actors within the commodity chain as well as the production and distribution of goods (Porter 1998).

Figure 1 illustrates the broad global commodity chain for the global furniture industry, emphasizing the most basic steps in the creation of a product from when it is sold or consumed. Commodity chains help researchers understand the basic organizational structure, in this case that of the furniture industry. Within the furniture global commodity chain, there exist geographical distribution of labor and resources. For example, Phase I in figure 1 is usually located locally, thereby, the labor pool is going to be located close to the saw mills since the majority of Brazilian furniture companies own their forest, sawmills, and furniture factories. Phase II starts to expand the geographical reach of labor. Influences on furniture design can be from local, regional, or international influences, however, the furniture factory is usually located within close proximity to the forest and sawmills to ensure maximum profit. By phases III and IV the commodity chain

includes regional and international resources. Depending on the company, warehouses might be located near show rooms or retail stores. Now with the use of technology and the internet, the showroom and warehouse can be located in Brazil and a buyer be located in the United States. By using a commodity chain approach production, design and consumption are quickly identified. This approach views commodities at a very high level and does not get detailed in trying to understand all of the components that make up a product from start to finish within a globalized market.

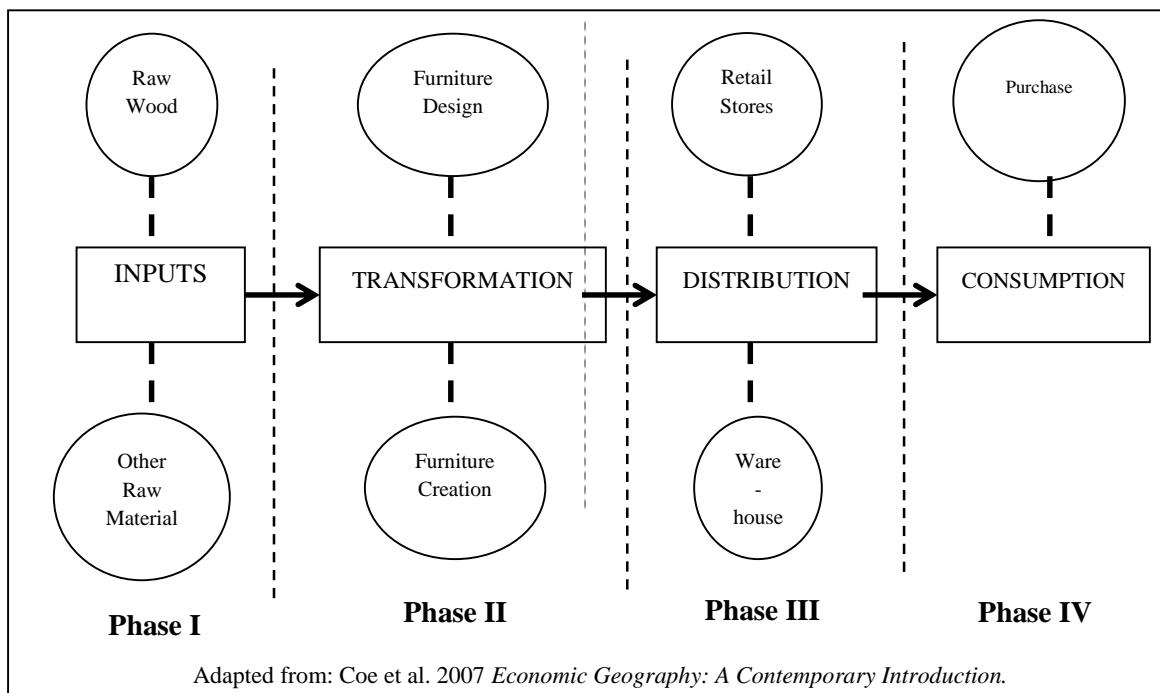


Figure 1. Furniture Global Commodity Chain

### *Value Chains*

Global commodity chains are “networks of labour and production processes whose end result is a finished commodity” (Aoyama et al. 2011 p. 137). The focus is on linking raw material locations with the final product location. The focus of global value chains is governance, which is not “determined by the commodity per se but instead by the nature of supplier-buyer relationships as a manifest in the geography of transactions” (Aoyama et al. 2011 p. 140). Value chains build on the idea of commodity chains (production) by adding the governance (supplier-buyer relationship) piece when evaluating the chains’ connections.

Kaplinsky et al. (2002) defines globalization as “a reduction in the barriers to the crossborder flow of factors, products, information, technology and values” (p. 1159). One way to understand globalization is through the theoretical lense of value chains. Value chains in short, explain how firms are globally interconnected, whether it is ‘buyer driven’ or ‘producer driven’ while also identifying the ‘lead firms’ and the interaction they have with other firms within the value chain (Gereffi and Kaplinsky 2001, Kaplinsky et al. (2002). This is pertinent information because of the way in which a company enters into the market can affect the selling and upgrading ability of the company.

Upgrades in value chains related to the global furniture market are produced by innovation, catering to niche markets, and the evolution of a company (Kaplinsky et al. 2008). Upgrading provides companies with a better chance of acquiring more sales. Buyers can see the effects of upgrading through the highly desirable and competitive

tangible and measurable factors of quicker delivery time, lower costs, and better quality products designed to enhance customer satisfaction.

Value chains help to illustrate the competition among different stakeholders. It is important to know who the stakeholders are because they can affect the cost of doing business (Kaplinsky et al. 2009). Important costs in value chains are generated by global buyers even though they do not own the product (Gereffi et al. 2005). In the South American furniture industry, this practice is classified as traditional manufacturing (Giuliani et al. 2005). This entails labor-intensive work coupled with traditional craft technology. Because the majority of Brazilian furniture industries involve traditional manufacturing, room exists for them to upgrade within clusters and value chains. This holds true in the Brazilian state of Santa Catarina and the furniture companies located therein.

At any given time, Brazilian furniture companies can participate in numerous value chains at different market levels (Navas-Alemán 2011). A company needs to learn process upgrading (improvements in the production system), product upgrading (new products, change designs, and improving quality) and functional upgrading (moving into different value chain stages) in order to be competitive in the global economy. The need for companies in Brazil to master these upgrades at different market levels (city, country, global) is important if they are to be competitive in the global economy.

A generalized global value chain for the furniture industry is illustrated in Figure 2. Within this value chain it is important to note that machinery is a key technology for all levels of furniture production, from harvesting the wood to the final product.

Therefore, labor is being replaced with technology which leads to increases in capital. As capital increases, companies are able to invest more in research and development thereby creating an opportunity for competitive advantage over their competitors (Porter 1985). Figure 2 illustrates the importance of the buyer (or agent) in the marketing and selling of the final product. Therefore, technology (machinery) and buyers (agents) are very important within global value chains and both will be examined more closely to give a better understanding of their roles in the overall global value chain.

### *Production Networks*

The theory of Global Production Networks provides a framework within which to examine flows of knowledge, power, and value (Henderson et al. 2002). Within the Global Production Network, there are three broad conceptual categories of value, power, and embeddedness (Figure 3). All of these are important for understanding agents and place. Aoyama et al. (2011, p. 143) defined Global Production Networks (GPN) as taking the “territorial view in understanding regional development processes, and stress the role of region-specific characteristics in embedding production activities.” Adding to the understanding of GPN, Coe et al. (2004) argued that development depends strongly on the coupling of global production networks and regional assets to stimulate value creation (workforce, business incubators, venture capital, etc.), value enhancement (knowledge and technology upgrades), and value capture (power).

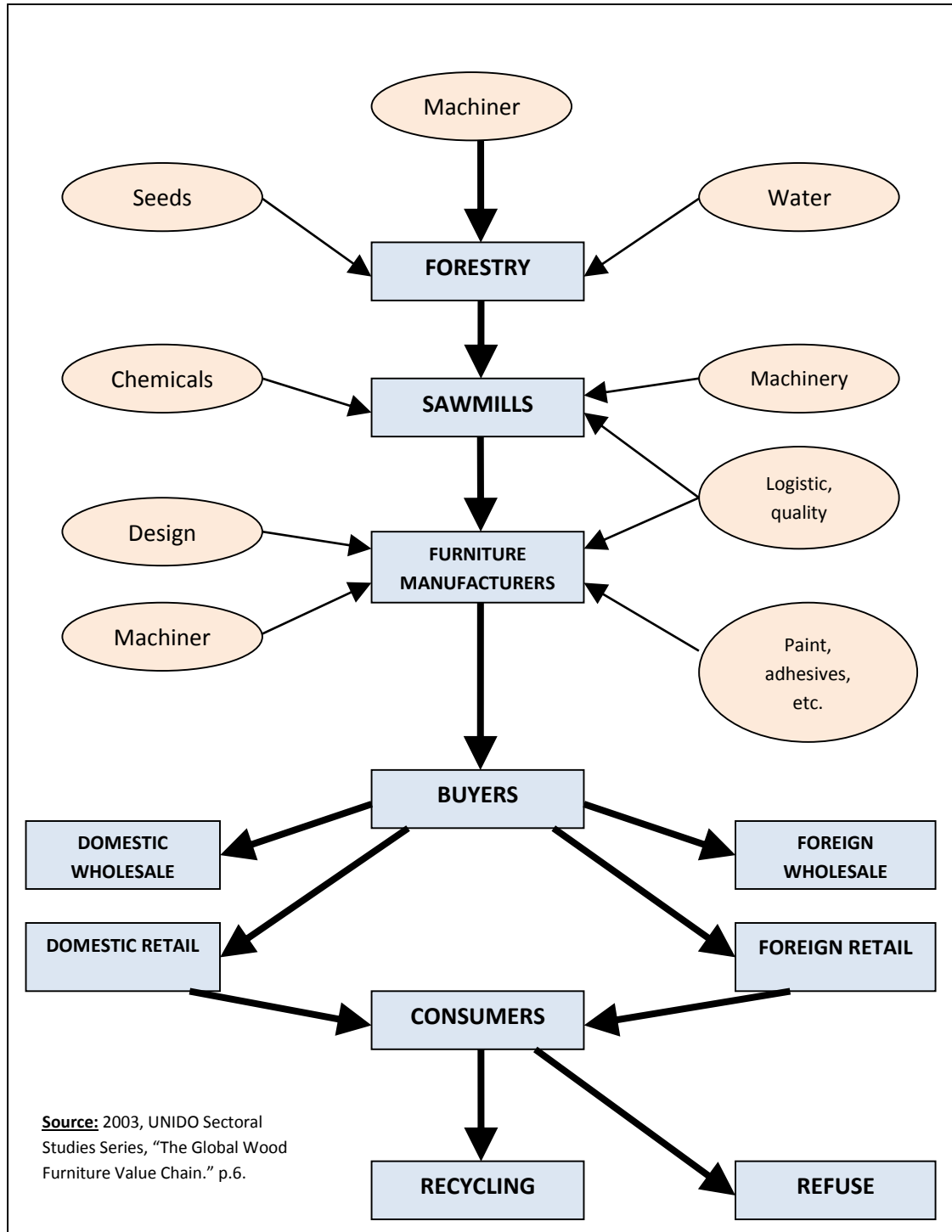


Figure 2. Value Chain in the Wood Furniture Industry



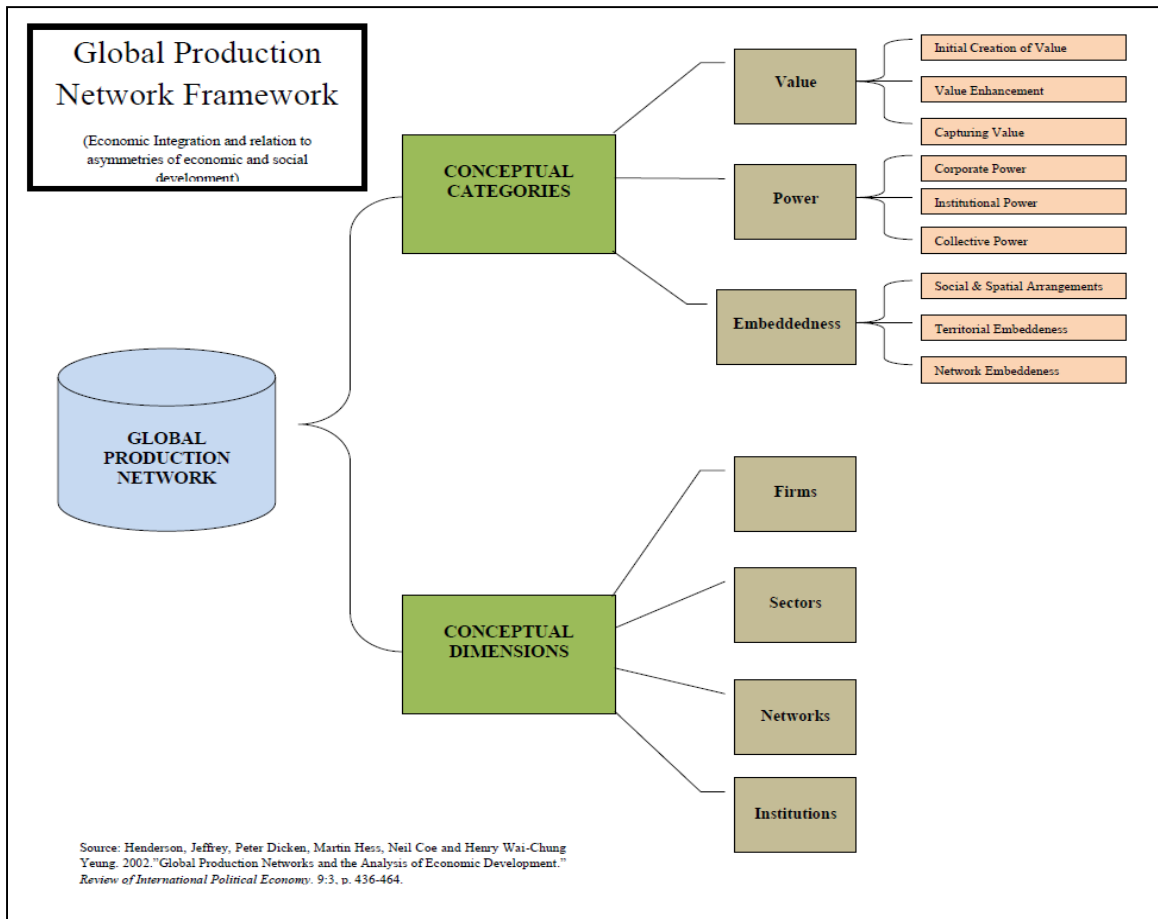


Figure 3. Global Production Network Framework

Therefore, global production networks are concerned with the multi-actor/ multi-scalar characteristics of transnational productions. This is important to understand because of possible divisions of labor and competitive advantages. The GPN literature regularly examines three broad conceptual categories of value, power, and embeddedness.

The first conceptual category mentioned by Henderson et al. (2002) is value. Individuals and what they are willing to purchase as a commodity and what they are willing to pay for that commodity create value. The unevenness of value between Brazil and the United States can be seen within the currencies being used. The dollar (although

fluctuating in value) is almost worth double the value of the Brazilian Real. The customers in the United States are willing to pay a lot of money for hand crafted furniture from Brazil because of the implied value of a piece of furniture from Brazil that was hand crafted by Brazilian artisans. The above example illustrates the difference between types of values that exist between different countries.

Power, the second category identified by Henderson et al. (2002) can be seen and displayed through various avenues such as corporate power, individual power, or governmental power (Henderson et al. 2002). There are power differences between the United States and Brazil. Manifestations of these power relationships can play out at the national level between countries signing formal trade agreements or within a specific industry such as furniture. Because of the complexity of power relationships, one should not assume or imply that the findings within the different parts of the Global Production Networks do not match, or that their findings are therefore incorrect. One should instead take the opportunity to explore the differences more thoroughly in order to understand the power relationships. Scholars need to understand these networks as they are, not what they think that these systems should be in order to function better. In other words, scholars need to understand what is really going on before passing judgment or advice on to others (Murphy 2008; Pollard et al. 2009). Knowing the different power relationships, cultural differences and languages that exist between Brazil and the United States can help a researcher make important connections between agents, business, and processes within the Global Production Networks.

The GPN is unique because it takes into account location or embeddedness. Henderson et al. (2002)'s discussion of embeddedness is broken into three categories: social and spatial arrangements, territorial embeddedness, and network embeddedness. Social and spatial arrangements focus on the relationships with the company (i.e. managers and employees) and the relationships the company has within the community. These relationships can be manifest in different ways such as philanthropy, corporate social responsibility, or creating shared value (Porter 2013). Territorial embeddedness looks at how place can affect a company because of local, state, regional, and national laws. Also, under this category, it helps to describe how a company can affect and change the local community through hiring locals and investing money back into schools and the community as a whole. Porter (1990) explains that government policy should lay a foundation for upgrading industries to make them more competitive, while also encouraging these companies to upgrade through government policies. Network embeddedness deals with the creation of networks between agents based on trust and the trust building between network agencies (Henderson et al. 2002). Embeddedness within the Global Production Network refers to the congruity between culture and the identity of a certain region and how this affects economies and relationships in that given area (Henderson et al. 2002; Coe et al. 2004; Aoyama et al. 2011).

Although Brazil is physically located in South America, it is the only country that speaks Portuguese. The Treaty of Tordesillas (1494) divided South America between the Spanish and Portuguese Empires. Brazil has a very diverse ethnic culture with many immigrants from Germany, Italy, Africa, and China. Therefore, cultural differences exist

between Brazil and the rest of South America. Now put the cultural differences of Brazil with China and there will exist many cultural differences including everything from language, physical appearance, food, and business practices. There are many differences between Brazil and the United States, one of which is language. The three main languages used between the two countries are English, Spanish and Portuguese. Therefore, knowing that there exists three different languages, assumptions can be determined about differences in histories of people, trade and government. However, many native languages of Brazilian immigrants are still being used in Brazil today, just as in the United States. This adds another layer of understanding to history, culture and identity. By understanding the different types of value and embeddedness, the power relationships among residents of various locale can be understood.

An example of a GPN is understood through the notion of ‘white wood,’ an industry term for unfinished furniture. The idea behind this production chain strategy is to create incompletely finished furniture that is then shipped back to the United States where all of the finishing work is done, thereby maximizing the space and cost of shipping, thus increasing profit. Customized furniture work was not completely outsourced from North Carolina, for example, furniture facilities and a trained labor force are still in place to reassemble the ‘white wood.’ Local politics and culture help drive decisions on where to locate production, distribution and marketing. The United States has a competitive advantage for certain stages and types of furniture manufacturing due to its long history with the furniture industry while local governmental incentives help potential and in-place firms locate and remain in the U.S. (Walcott 2011). This example

is an innovative way of participating within the global economy by creating furniture at a low cost in one location and assembling the finished product in another location.

Globalization of production and trade change the way that companies market, sell, produce, and distribute goods. This leads to what trade economists call ‘fragmentation’, or ‘flexible production,’ to describe how goods are now manufactured over different geographic locations (Coe et al. 2004, Stimson et al. 2006, Aoyama et al. 2011).

Disintegration of production makes spatial distribution important to understand especially as it relates to value chains. Fragmented companies create production networks that require trust, reputation, and dependence in order to be effective. This vertical disintegration allows each part of the furniture process to be highly specialized while distributing the risk. In this research project, the Brazilian furniture company Temasa is a great example of disintegration. Temasa is the parent company with two child companies: Temasa Florestal and Copas Verdes. Temasa is in charge of furniture production, while Temasa Florestal deals with the management of their forest and Copas Verdes deals with the planting and handling of raw materials for Temasa (Temasa Company 2015). When increased coordination is needed, the cost of business rises with the increased complexity. Therefore, it is important to understand location, and the cost of production, assembling and shipping associated with these locations.

The global production network takes the global commodity chain and global value chain into account while adding a spatial context to the production of goods. An emphasis of the global production networks is the embeddedness, power, and value of products. These aspects are explored within the furniture companies located in the

Brazilian state of Santa Catarina and how this state has developed a global production network grounded in process and product innovation and the utilization of web-based technologies, while being grounded in the local economy.

Hess (2004) explains, “Embeddedness, then, may become a key element in regional economic growth and in capturing global opportunities” (177). Therefore, economic activity is “socially constructed, maintained, and historically determined by individual and collective actions expressed through organizations and institutions” (Hess 2004, 181). This is a useful way of understanding place as an important part of the GPN framework. This conceptualization also explains why some companies will have subsidiaries in other parts of the world, but the upper manager in those facilities will usually be of the ethnicity of the home company management. Dicken and Thrift (1992) observed,

[B]usiness organizations are themselves ‘produced’ through a complex historical process of embedding which involves an interaction between the specific cognitive, cultural, social, political and economic characteristics of a firm’s ‘home territory’, those of its geographically dispersed operations and the competitive and technological pressures which impinge upon it (p. 287).

The importance of cultural congruence and familiarity with both the home country (Brazil) and that of the countries where business is conducted is important to understand. The wooden furniture industry is becoming more competitive, with more producers which is causing the overall price of furniture to drop (Kaplinsky et al. 2003). Lessons learned from this study are: 1) External crisis can be the catalyst for creating cooperation among furniture companies; 2) Trust can be established regardless of past differences; 3)

Lead firms play a critical role in creating and sustaining value chain cooperation; 4) Internal and External change agents are needed to facilitate deals and help build trust inside and outside the furniture cluster and; 5) The creation of furniture lobbying groups to work with the government for the creation of laws and policies that support the furniture industry (Kaplinsky et al. 2003). This will be further illustrated in the discussion of Brazilian furniture companies, their markets and the role of cultural familiarity and transcendence in chapter four.

### *Flow of Capital*

In this research, all of global chains/networks are important to consider since in the Brazilian furniture industry there is a lack of access to capital, which is needed to start businesses. Without capital, these businesses will not be able to invest in the IT and machine technology which will help them stay current and/or excel. However, technological advances including inexpensive web technologies and social media allow SMEs within Brazil to gain access to the global market with a relatively low entry cost.

It was not until 1982 when David Harvey wrote *The Limits to Capital* that much thought was given to the spatial aspects of Marx's circuits of capital. Harvey (1982) extended Marx's ideas by proposing two new circuits: secondary and tertiary circuits.

These circuits are described as follows:

Secondary circuits – regulated by the state but controlled by private sector actors – provide a key mechanism through which primary capital is diverted into financial markets, fixed capital and the built environment (Aoyama et al. 2011, 132).

Tertiary circuits – transfers of excess profits and taxes into science and technology research and social expenditures – also play a key role in the urban and regional development process in that they provide for public goods, pay for the costs of governing, fund technological invention and innovation, and facilitate the skilling, training and social reproduction of labor (Aoyama et al. 2011, 132-134).

Even though this dissertation does not focus on the movement of capital (money), it is important to note the different kinds of capital that exist, thereby allowing one to see where there might be insufficient capital to invest in new technologies or even exportation of products. Harvey's proposed two new circuits deal with investment from and to technology and how money is controlled by the government.

From these additional circuits, the role of location is seen as an important factor within capitalism and the flow of goods. As Coe et al. (2007) explain, "A global shift in development patterns is based upon a movement towards more profitable locations – either because of new sources of labor, or new markets, or most often both" (75). This is the notion of spatial fix, which was derived from David Harvey's additional circuits of capital. Harvey (1981) explained that in order for capitalism to survive, there needs to be a consistent and fresh supply of labor at the local, regional and/or global scale. This labor is needed in order to produce commodities, which are then sold for more capital. Capital is then reinvested in the company and to continue this cycle. This very basic understanding of capital is needed in order to understand why some furniture companies prefer to locate or cluster near other companies.

The furniture industry demonstrates the role of labor with the use of strategies such as offshoring and reshoring of furniture companies in order to cut transportation and



labor cost while capturing the value created by unique skill sets at various stages of production (Walcott 2014). Also, tied into this search for skilled labor is the role of education. Education as the ability to train workers is a “key component of regional competitiveness” (Gereffi 2006, 1). Locations offering training are able to attract businesses, especially when coupled with low labor costs, such as in Mexico (Harner 2003). On January 1, 1994 the North American Free Trade Agreement (NAFTA) went into effect. This agreement allowed the Mexican furniture industry opportunity to thrive because of their location to the United States and cheap labor. The majority of furniture companies in Mexico are small and medium sized companies that have the ability to change styles and products utilizing the additional advantage of cheap labor. These competitive advantages allow Mexico to be a competitor in the North American furniture industry, further using the location advantage of proximity (Harner 2003).

### *Information Technology*

Technology plays an important part in the global economy. Enhancement and learning can be improved through the international links within a global value chain. However, just being part of a global value chain does not guarantee success. The links within a global value chain are critical in allowing access to technological knowledge, learning and innovation. This newly acquired knowledge allows firms to implement technology at the technical, managerial and organizational levels within the firm. Without this knowledge, these technologies do not profit the firms, and in fact can be investments without a positive return on investment (Morrison et al. 2008).

Technology and the GPN are correlated in that changes in technology lead to changes in the GPN. As a result, when technology advances, adjustments must be made in the global value chains (Gereffi et al. 2005). Whether this is investing in new technology for workers (Cao and Hansen 2006) or in software such as geographic information systems (GIS) and supply chain management (SCM), a company must invest in technology to stay competitive in an ever changing global economy (Tavasszy et al. 2003; Guan and Lin 2008; Eksioglu et al. 2009).

Cao and Hansen (2006), for example, studied China's furniture industry and found Chinese furniture companies invested in the future by providing scholarships and design contests with local universities to recruit innovative employees. Cao and Hansen (2006) point out that a major criteria in evaluating recruitments forums of innovation were automation and technology. These two items are giving the Chinese furniture industry a competitive edge in the global economy (Cao and Hansen 2006). However, Chinese furniture makers have had problems breaking into the upscale furniture market for a variety of reasons, including difficulty in creating a favorable local and/or broader market for Chinese design, quality and consumer brand preference.

The invention of the World Wide Web opened up many new opportunities for companies utilizing Internet access. Moodley (2002) explains, "The Internet is becoming a key enabler of the global networked economy" (p. 31). Furniture companies and markets are no exception to these competitive advantages – and challenges – created by this global reach. E-commerce plays a vital role in the world economy, especially in the furniture industry. The internet unites businesses and customers that are thousands of

miles away from each other. The internet also gives developing countries' businesses access to the global market (Moodley 2002). Gereffi (2009) emphasized that the internet was one of the major drivers of global economic development in the latter half of the 20<sup>th</sup> century because of its ability to traverse the world in a matter of seconds, connecting people, places and resources and thus enabling economic transactions.

Moodley (2002), in his research on the South African furniture industry, found that the Internet provides connectivity to potential global players through marketing and sourcing from their websites. He further explains SMEs can increase their competitive advantage in the global market if they are able to effectively utilize their knowledge of e-commerce. A key driver in economic globalization is the access to information and communications among firms via technology. In recent years, international production and trade are becoming more centralized around the use of internet technologies (Moodley 2002).

Moodley (2002) explains, "Trade in the global economy is characterized by a dense web of transactional relationships organized through networks of firms" (p. 643). These network arrangements include clusters, alliances, networks, and value chains with global buyers representing major retailers that are helping organize trade within the global furniture market (Moodley 2002; Brown et al. 2004). Global buyers are increasingly using the internet to find new sources of supply and trade. Internet technologies or e-commerce can use the internet to create networks of trust and knowledge sharing between different organizations (Moodley 2002; Davenport & Prusak 1998). The use of e-commerce is an opportunity for SMEs in the furniture industry to

have access to the global market with very little investment, whereas before the internet, it required a sustainable investment from a company to enter into the global market.

However, SMEs need to adapt this technology to market their current competitive strengths and not simply replicate large firm approaches. It is also important to note that not all companies want to become global players (Moodley 2002). Although technology has allowed for SMEs to gain access to the global market, some companies do not want to change, or they lack the resources to adopt the new technology.

E-commerce is critical for staying competitive in the global markets. If smaller companies do not integrate e-commerce technologies into their strategies, they “run the risk of being ‘frozen out’ of the value chain (Moodley 2003 p. 317). The global wood furniture market is becoming more and more organized by global buyers, who work for the lead firms in the value chain. SMEs need to develop ways to integrate information and communication technology into their strategies for connecting to lead firms. “E-commerce will play an instrumental role in establishing and in sustaining global linkages” (Moodley 2003 p.323), thereby allowing companies access to the global market.

Moodley (2001) noted that the international wooden furniture buyers are relying more on the internet as a way of conducting business, collaborating with partners and to develop relationships with suppliers. With the advent of the internet and the increasing use of it as a tool for furniture companies, no longer is the global market only for large enterprises. The internet allows SMEs to access many of the same potential buyers and sellers that larger corporations only had access to previously. The “reduced transaction costs, lower barriers to market entry and improved access to information are likely to

reduce the economically optimal size of firms, thereby encouraging smaller firms to work together to develop global market reach” (Moodley 2001 p. 90-91). However, furniture companies have to calculate the risk associated with any technology investment. Just having a web-site does not guarantee success at the global level.

Lall’s (2000) study of manufacturing exports from developing countries, claims that exporting success is important to the success of your business and the company’s overall economic performance. He later adds, “Export success is also increasingly linked to the ability to attract more and better foreign direct investment (FDI)” (Lall 2000 p. 338). FDI is important for developing countries. Investment in technology is not cheap and is usually a large investment in both money and knowledge. Just because a country is gaining large amounts of FDI does not necessary mean it will be technologically advanced. However, some countries promote technology within industries as a way to create comparative advantage (Lall 2000).

Supply chain management (SCM), information and communications technologies (ICT) are shaping and reshaping the world’s trading patterns (Tavasszy et al. 2003). SCM is becoming more effective because of ICTs, and this means potentially creating a greater return on investment for companies. It also means that trading patterns could change almost daily depending on technological innovations. With the onset of geographic information systems (GIS), the ability to track shipments and plan the most cost effective way to ship goods has proven to be a beneficial technology for companies. Businesses and researchers alike are designing new systems to improve logistics. Guan and Lin (2008), for instance, designed a logistics information system using Supermap’s WEB

GIS. Their system unites various departments to reduce cost and provide a reliable method of shipping and tracking orders.

### **Agents/Actors**

The agent/ actors are important within the GCC, GVC, and GPN because they are the individuals who are making connections between buyer and seller, building trust and closing deals between buyers and sellers. These individuals are key players within all of these chains because they have social capital and market knowledge. These individuals have an intimate knowledge of how the furniture market works and who are key participants (suppliers, labor pools, logistic firms, etc.) within local, regional and global markets. The definition of agent that will be used throughout this research is: An individual who has knowledge of the furniture industry, who uses this knowledge along with their social capital to create, make, or close business deals relating to the furniture industry.

Feldman and Zoller (2012, 24) define this as the “Role of dealmakers – individuals with valuable social capital, who have deep fiduciary ties within regional economies and act in the role of mediating relationships making connections and facilitating new firm information”. Various terms for agents, actors, or dealmakers are used interchangeably throughout different studies (Feldman and Zoller 2012; Murphy 2012) However, the one thing in common among these different titles is they are referring to individuals and not objects. In this dissertation, the term agent will be used to

represent the individuals who help develop relationships by making connections and sharing information.

The South African furniture industry provides an example of the need to bring the right agents together in order to have a successful furniture value chain. In 1998 the Industrial Research Project (IRP) – which was composed of the School of Development Studies at the University of Natal and the Institute of Development Studies at the University of Sussex - organized workshops on the global furniture industry (Kaplinsky et al. 2003). These workshops emphasized international competitiveness and value chain approaches for understanding the furniture market. In order to help South Africa's furniture industry the IRP team was hired to document South Africa's furniture value chain, although the IRP research team needed to gain support from key players within the value chain, which posed a challenge because the "historic lack of trust in the sector created a particular challenge" (Kaplinsky et al. 2003, 29). In this case the IRP assumed the role of agent who "had a vital role to play in building the trust necessary for cooperation" (Kaplinsky et al. 2003, 29) among the members of the South African value chain. In order for the South African furniture value chain to be successful, trust needed to be established among the different agents and companies (Kaplinsky et al. 2003).

In the case of South American furniture, agents are usually former employees of the furniture firms who held upper management positions (Morrison 2004). They already have numerous skills and connections within the furniture industry, which allow them to maintain and expand their relationships with manufactures and buyers at the local, regional and global levels (Morrison 2004). "Relations between actors are socially

embedded when they involve trust that is based on friendship, kinship and experience through repeated interaction” (Boschma and Frenken 2010 p. 122). Rocha et al (2009), analyzed the São Bento do Sul Furniture Cluster in Santa Catarina, Brazil and they noted the key role of socially embedded firms. They noted that the first two furniture companies in Santa Catarina to export their product were Zipperer and Artefama. Both company owners were immigrants from Austria who brought their knowledge and wood working skills to Brazil. Because of the common culture and trust that was developed, other companies wanted to locate near these two companies to learn the business from them and potentially also become an exporting company (Rocha et al 2009). Relationship building within the furniture industry is important for finding new sources of supplies and markets. Relationship building is more than meeting people, but the building of trust and relationships. Boschma and Frenken (2010) explain the nature of how these relationship networks are formed:

The probability of the two actors forming a relation, who already relate to a common third, is expected to be much higher than the probability of two actors forming a relation who do not relate to a common third. The establishment of such triangle relationships is called ‘closure’ and such a closure mechanism will increase the degree of clustering (in a network sense) over time. The reason for closure to be common is twofold: 1) each actor can be informed by the common third about the properties of the other (what knowledge it possesses) and trustworthiness of the other, and 2) once the relationship is formed each actor has less incentive to behave opportunistically because of loss of reputation regarding the common third (p. 128-129).



This notion of trust and actor network building will be explored more within this dissertation when studying furniture companies in and around Santa Catarina, Brazil. Another type of agent who is important within the furniture global networks area are the buyers. Global buyers play a critical role in connecting producers with product consumers from other countries. They also act as market informants to producers by educating them about new furniture codes and standards (Kaplinsky et al. 2002). In their research on the South African furniture market, Kaplinsky et al. (2002) identified ways in which global buyers helped furniture companies upgrade by providing the following:

buyers provide clear signals to suppliers by setting quality, price and delivery targets and checking performance compliance, the provision of direct training to suppliers, provision of finance, working directly with suppliers to upgrade their performance, and helping suppliers with their own supply chain (p.1166).

ABIMOVEL produced a book entitled *Study of the North American Furniture Industry* (Estudos O Mercado Norte-Americano de Móveis) which goes into great detail about the importance of quality and standards expected in the North American furniture market. Although the book was published in 1999, the awareness it brought to the Brazilian furniture industry was considerable. Throughout this section of the literature review, numerous terms for agents and actors have been used.

## **Clusters**

Clusters are known by different names such as industrial clusters, industrial agglomerations, or industrial districts, however they all largely represent “geographic

concentrations of economic activities” (Aoyama 2011 p. 85). Industrial clusters do not happen by chance and their physical clustering tends to be in a concentrated area (Porter 1990). Industries tend to be linked through buyer-seller relationships or common customers and technology (Porter 1990, Porter 1985). Porter (1990) describes the benefits of clusters as industries who are mutually supportive of one another which allows benefits to flow through the cluster to create spin-off companies. The creation of new companies provides new competition among companies which provides an atmosphere in which companies can compete and improve themselves so they will become more competitive in a global market (Porter 1990, Porter 1980, Porter 1985). In Brazil, Rocha et al (2012) examined furniture exports in the São Bento do Sul furniture cluster located within the Brazilian state of Santa Catarina. They found that the furniture companies within this cluster accounted for 50 percent of the employment in this area thus leading to new educational and employment opportunities associated with the furniture industry.

Location is key in understanding the global furniture industry. As Porter (2001) argues:

A nation’s competitiveness depends on the capacity of its industry to innovate and upgrade. Companies gain advantage against the world’s best competitors because of pressure and challenge. They benefit from having strong domestic rivals, aggressive home-based suppliers, and demanding local customers (p. 73).

One way that location affects businesses is through urban infrastructure's function of linking (or obstructing) links to other firms and markets through the movement of people, goods, and ideas.

Clusters can be created through the linking of firms and markets by infrastructure. In his study of the city of Mwanza, Tanzania, Murphy (2006) showed how furniture sector designers gained ideas for design from other retailers and catalogues in the cluster. Furniture makers also gathered and discussed what they were doing in terms of furniture making and design. These small-scale manufacturers faced many challenges preventing them from growing into a large company. There is little incentive for these companies to grow because the local government would increase their taxes. A key question concerns how a place can nurture and encourage small companies – which form the bulk of firms in the furniture industry, particularly in developing countries - to grow and expand their market share. Porter (1990) suggested that, “Government Policy must be concerned with laying the foundation for upgrading competitive advantage in a nation's industry and prodding firms to do so” (p. 622). In other words, creating policy that encourages growth by investing in infrastructure that will allow the movement of goods and providing educational opportunities to citizens, thereby creating labor pools for industries. However, not all countries have policies that encourage business development.

Delving deeper into understanding how SMEs enter into the global market, a knowledge of the roles of clusters and how they facilitate growth and innovation is necessary. Clusters provide an atmosphere of collective learning and access to information. Through these collaborations, competitive advantages are formed in these

specific areas (Porter 1980, Porter 1985). These competitive advantages manifest themselves in knowledge spill-over (next generation training of employees), partnerships, specialized/ highly trained employees and agglomeration of similar companies near each other providing opportunities to reduce production cost.

Small enterprises in developing countries particularly need to rely upon collective learning, since their access to information is relatively limited. This collective learning is a major factor for competitiveness for these small enterprises. Collective learning usually takes place in clusters which provides an atmosphere for facilitating information access, economic productivity and specialization, especially in developing countries (Cater 2005; Beerepoot 2008; Power and Jansson 2008; Morgan 2009). In these clusters lie informal social interactions as well as a place that contains specialized and skilled laborers. Beerepoot (2008) explores the social interactions and learning within a furniture cluster in Metro Cebu, located on the island province of Cebu in the Central Philippines. The Metro Cebu area is a place where individuals with limited education can find employment. The majority of furniture businesses outsource work informally to small subcontractors and home workers as cost-cutting procedures for these large companies. This strategy is beneficial to the local labor pool because it provides them opportunities to gain knowledge and skills through apprenticeship-like relationships. The payment system for these arrangements are based on the number of pieces produced. The resulting flexibility of production spaces allows the mobilization of apprentices and young family members to learn the trade, thereby increasing the skilled labor pool (Beerepoot 2008). The São Bento do Sul furniture cluster within Santa Catarina, Brazil has similar

characteristics to Cebu. The majority (95%) of the 16,000 firms located within this cluster are domestically and family-owned businesses (Rocha et al. 2012). This dynamic allows for the dissemination of knowledge about the industry to pass from one generation to the next, thus securing an educated workforce with learned skills for the future.

Two types of knowledge can be found within these clusters: 1) formal and 2) tacit. Formal knowledge is gained through formal education relying on written transmission of knowledge, such as in schools, universities, or industry specific training facilities that grant certification. Tacit knowledge, on the other hand, is informally transmitted information conducted through personal contacts. Therefore, tacit knowledge is not as widely distributed because it is usually more localized and passed among smaller groups of individuals. As Morrison (2004) explains, “industrial districts are seen as the reigns of tacit knowledge, with the complementary view that only personal relationship can vehicle it, being tacitness connected inextricably to the broader culture and language of the people” (p. 3).

Formal education is important for actors in responsible positions within a developed world company, but this is not always the case in developing countries. Many firms have foremen and supervisors possessing only elementary education. Because of the lack of formal learning, it is important to analyze the upward mobility of workers, while focusing on training and educational opportunities. Training refers to the transfer of knowledge, skills, or attitudes that might enable another worker to perform his or her task in a more effective way. Education in clusters may result in apprehension among some entrepreneurs about giving their workers training. Employers fear workers will

find other jobs because they are more valuable due to their training. It was found that small companies (artisan) have less formal training whereas larger companies (machine-based) have and need more formal training.

...The furniture industry relies strongly on informal channels for knowledge acquisition; experience is a vital mechanism of informal knowledge absorption and transfer of knowledge to others (Beerepoot 2008, 2443).

Local labor mobility plus gaining experience over time are key mechanisms for informal learning. Even though skilled workers have opportunities for upward mobility, they might find it hard to move beyond a certain point. Within developing countries, clusters are an important source of employment, but not necessarily upward mobility for the workers (Beerepoot 2008).

The exchange of informal knowledge through clustering also occurs during furniture trade fairs (Power and Jansson 2008). This is because trade fairs simulate real world clustering within a fixed environment. Participants normally want to be grouped with similar styled companies, thus giving an opportunity for networking. Power and Jansson's (2008) research showed the value of furniture companies attending trade fairs because there are opportunities for networking, sharing of ideas, and a place for creating new innovations.

Yeung (2009) proposed that a geographical perspective is necessary when studying transnational corporations (TNC) because local and regional development heavily impact the global market. Innovation and competitive advantage are two additional driving factors for successful businesses irrespective of and transcending their

particular location. Morrison (2003) explains knowledge spillover with in the São Bento do Sul furniture cluster in Santa Catarina Brazil is based on networks of trust and cultural understanding. He points out that knowledge freely circulates within the cluster as a commodity, but until it is captured it has no value for the cluster. Once the knowledge is captured, it can be beneficial to all in the cluster. This knowledge is also acquired by participating within global value chains. By participating within these chains, companies, as well as individuals, receive technical support, facilitation with foreign companies and introduction to international standards. However, participating within international value chains can also have a negative impact on the local economy because the market might dictate where a firm buys their supplies, which could mean a supplier who is not a part of a furniture company's respective furniture cluster. Lissoni (2001) studied the Brescia mechanical firms and found that "...knowledge is not 'in the air', but circulates within a number of relatively close networks" (Lissoni 2001 p. 1499). These networks include individual workers, suppliers and customers' technicians.

### **Innovation and Competitive Advantage**

To be competitive means to do something cheaper than or different from the competition (The Economist 2008). Porter (1990) states, "A nation's competitiveness depends on the capacity of its industry to innovate and upgrade" (p. 73). As innovation increases, so will the productivity of a company (Porter 2003). "Competitiveness is determined by the productivity with which a nation, region, or cluster uses its human,

capital, and natural resources” (Porter 2003 p. 3). A key in innovation is technology, a main driver of competition (Porter 1985).

“Although furniture is a resource- and labour-intensive product, it is striking that the major exporting countries are the industrially advanced economies” (Kaplinsky and Readman 2005 p. 685). According to the Centre for Industrial Studies report (2009), 61 percent of all furniture exports are by developed countries with emerging countries making up 31 percent of furniture exports. In order to participate within the global economy, a firm needs to have the capacity to innovate products and processes both incrementally and quickly in order to stay competitive. Being innovative in a timely manner enhances income growth and this additional funding can be reinvested in research and development (Kaplinsky and Readman 2005).

Due to the fact that more and more furniture companies are targeting the global market, one of the most sustainable ways of staying competitive is developing a capacity to innovate. Not just to innovate, but to innovate more quickly and effectively than your competitors (Kaplinsky and Readman 2005). Innovation is vital for a company’s success and longevity. The majority of a company’s decisions about innovation come from the top down (Wagner and Hansen 2005). Executives decide the type and amount of innovation needed and incorporate it into their company and its products. Companies must maintain a constant flow of innovation in order to stay competitive in the fast-changing global economy (Wagner and Hansen 2005). However, innovations can also be generated from the bottom and pass upward through the chain of command – a key component of open learning systems such as the so-called Toyota model (Walcott 2014).



The Toyota model is based on creating a particular quality-oriented and time-efficient culture of the firm. Even though Toyota has offices outside of Japan, the corporate practices and business culture remains firmly tied back to the country of its origin, Japan. For example, when Toyota has offices within the United States, Toyota sends ‘company men’ to run the operations. Geography is crucial when dealing with companies’ set-up as Toyota models because this culture shapes the various ways in which relationships and business deals will be made (Coe et al. 2007). This model also affects the way that companies deal with innovation and technology, making them open and flexible to efficiency promoting changes. The Toyota model shows how Toyota can create “competitive advantage through innovation...including both new technologies and new ways of doing things” (Porter 1990 p. 74). Toyota was innovative in their management style, this in turn set them apart from their competition thus creating competitive advantage. Furniture companies are experimenting with changing workflow to increase productivity such as lean manufacturing or reshoring of their companies (Walcott 2014).

An example of the Toyota model within the furniture industry is Hickory Chair. Under the leadership of Jay Reardon, Hickory Chair examined the workflows within the company to identify areas in which the company might improve (Walcott 2014). Mr. Reardon forged a relationship with Toyota through their Supplier Support Center director was able to learn lean manufacturing techniques through monthly workshops (Walcott 2014). Hickory Chair then created their own program EDGE (Employees Dedicated to Growth and Excellence) based on the Toyota model which allowed the company to

increase profits, decrease waste, rewarded employees for suggestions that help streamline production and changed management to a “management by walking around” rather than sitting in offices (Walcott 2014).

Wagner and Hansen (2005) proposed three categories on how businesses deal with technology. First are the ‘First Movers,’ consisting of companies that adopt new technology as soon as it is available. Next are the ‘Cost-Benefit Analyzers,’ who tend to look at return on investment in terms of monetary benefits and production benefits. The final category includes ‘Second Movers,’ the last companies to adopt the new technology. They wait and examine how other companies are applying the new technology before implementing the technology themselves. It is very important for furniture companies to have a technology adoption plan so when opportunities present themselves they will be able to make informed decisions about how their company should react. Porter (1985) explains that technology is a principal driver of competition and technology change is among the most prominent forces that can change the rules of competition. Furniture companies can be ‘First Movers,’ ‘Cost-Benefit Analyzers,’ or ‘Second Movers.’ All that really matters is whether or not what you are doing is going to set you apart from your competition, because “not all technological change is strategically beneficial” (Porter 1985 p. 60). Therefore, companies must develop ways of evaluating technology and strategically implementing these technologies (Porter 1985).

Schumpeter’s (1942) theories on innovation and competitiveness hold that large companies usually will have more capital, which allows them to be capable innovators, invest in new technologies, and distribute fixed cost over larger outputs. SMEs are thus

under more pressure to innovate effectively if they want to grow within a globalizing market. Companies need to expand their capacity for innovation, both as creators and absorbers, but not just for expansion purposes. They need to be expanding more rapidly and effectively than their competitors, and be able to absorb lessons learned and apply them effectively (Kaplinsky and Readman 2005; Wagner and Hansen 2005; Cao and Hansen 2006).

Wagner and Hansen's (2005) study of the Chilean market showed that small Chilean companies used innovations within products, processes and business systems to give themselves a competitive advantage and allow them to export their products. Wagner and Hansen (2005) found SMEs that are innovative in the areas of products, processes, and business systems have a great chance of competing within a globalizing market. Companies need to be agile enough to find overseas buyers because of insufficient internal markets. However, this means they have to be willing and ready to compete within a world market, which means competing with everyone from other places serving the world market. In order to stay competitive, small companies need managers that have a good understanding of their competitors and their own competencies and capabilities.

In examining China's furniture industry, Cao and Hansen (2006) found innovation with new product design applied to three categories: marketing, design, and manufacturing. They also found that innovation might reflect the market orientation of a particular company. In studying China's furniture market, they discovered that small and medium sized industries are making incremental improvements in their companies since

they are flexible enough to be responsive to changes and address potentially competitive available niches.

Kaplinsky and Readman (2005) use furniture statistics on unit-price and market-share in order to create a measurement of innovation for the furniture market in a globalizing economy. They argue that the only way to increase your value in the global market is to innovate and innovate effectively. Companies need to expand their capacity for innovation, but not just for expanding purposes. They need to be expanding more rapidly and effectively than their competitors (Kaplinsky and Readman 2005, Porter 1985). Companies need a clear vision and understanding of how innovation can give their company a competitive advantage. Innovation and competitive advantage are two driving factors in successful businesses in both developed and developing countries.

### **Contributions to the Literature**

Research on global commodity chains, global value chains, and global production networks have focused more on transnational corporations as opposed to SMEs (Pietrobelli 2004; Veiga and Rios 2010). Moreover, the work on the many different chains and networks have been holistic in their approach (Kaplinsky et al. 2009; Gereffi et al. 2005; Coe et al. 2004). These studies are important to gain a global, national and state perspective of how economic activity is occurring. However, what is lacking within the literature are the individualized studies of furniture companies to see if the holistic approach is a true representation of what is really happening at the individual firm level. This research explores the chains and networks of specific Brazilian furniture companies

and the São Bento do Sul furniture cluster in detail to better understand how web-based technologies, process and product innovation, and embeddedness within the local economy helps these companies enter into the global market.

The majority of the research outlined within this literature review shows that many of the studies (Pietrobelli 2004; Veiga and Rios 2010; Rocha et al. 2012; Morrison 2004; Rocha et al. 2008; Rocha et al. 2009) use a mixed-method approach to understand the market. This dissertation also utilizes the mixed-method approach to capture a holistic view of the furniture industry in the state of Santa Catarina, while doing a more focused view of the most innovative furniture companies within Santa Catarina.

The mixed methods approach lends itself to allowing a researcher to employ all of their faculties in data gathering, permitting them to “draw on their broad cultural or commonsense knowledge” (Denzin and Lincoln 1998, p. 84). Through the mixed methods approach, qualitative insights from interviews and surveys provide insight into the global production networks of the Brazilian furniture industry with a focus on agents and culture. Yeung (1995) further explains that qualitative interviewing is a social process, and as such the researcher and interviewee interact through an open dialogue based on a context established by the researcher. Therefore, the interviewing is an “interactive process between the researcher and the participants that is primarily descriptive and relies on people’s words as the primary data” (Marshall and Rossman 1989, p.11). Another benefit to using qualitative methods within this research is “qualitative research may also be essential for surfacing contextual dimensions . . . such as differences between countries” (Doz 2011, p.584). This is crucial for understanding

the world economy, and more particularly for understanding the place and operations of the Brazilian furniture within the context of a Global Production Networks. Henderson et al. (2002) state that:

We must comprehend how places are being transformed by flows of capital, labour, knowledge, power, etc. and how, at the same time, places (or more specifically their institutional and social fabrics) are transforming those flows as they locate in place-specific domains (p. 438).

## CHAPTER III

### METHODS

This dissertation utilizes a mixed methods approach along with primary and secondary data, which allows the researcher to gain an understanding of the Brazilian furniture industry through firsthand observation, while maintaining an objective view by comparing qualitative data with statistical analysis. Census and export data are utilized to help show where, and how much, furniture is being exported out of Brazil versus what is staying locally in the country. By interviewing a selection of Brazilian furniture companies, an in-depth understanding of each company's use of technology and agents within the global chains and networks are revealed, thereby demonstrating the need for agents within the global production network that are proficient in language, culture and the furniture industry. The secondary data fosters a better understanding of how companies view furniture production within the Santa Catarina region of Brazil and what is needed to compete in the global economy. Between in-depth interviews and secondary data, common themes emerged regarding the importance of understanding the market, the importance of agents, and the need to understand the different markets and customers.

#### **Research Questions**

The purpose of this dissertation is to better understand the spatially concentrated Brazilian furniture industry through the state of Santa Catarina, which has emerged as an

internationally connect furniture cluster. It will be argued that the Santa Catarina furniture industry has developed a global production network grounded in process and product innovation through the utilization of web-based technologies, and the development of a strong value production chain grounded in the local economy. However, Brazilian furniture industry, as with any others located in the Global South are constrained by the furniture global production network and their ability to build relationships and gain trust from other companies.

### **Primary and Secondary Data**

This dissertation relies on primary and secondary data sources. The primary data used within this research includes site visits, and interviews via email, phone and in person to validate Brazilian furniture operation. The secondary data sources are in the forms of websites, reports by the North Carolina Department of Commerce, and Brazilian furniture organizations such as Abimóvel which is the Brazilian Furniture Industry Association, and one of the leading organizers of trade fairs, expos, exhibitions, forums, and seminars within Brazil. Abimóvel also lobbies the Brazilian government for best practices in the furniture industry. In addition, they publish material on different global furniture markets as resources for the furniture industries in Brazil that are trying to enter into the global market. Another source is the Instituto de Estudos e Marketing Industrial (Institute of Studies and Industrial Marketing) (IEMI) which is a research group focused on the textile, footwear, and furniture industries of Brazil. They provide research and



special studies related to each of their focus industries, and also information from other media outlets such as newspapers and journals.

*North Carolina Department of Commerce, São Paulo, Brazil Office*

The North Carolina Department of Commerce maintains offices outside of the United States to “support export activity or to facilitate foreign direct investment in the state” (NC Commerce International Regions 2015) and all of these services are free of charge. André Neufeld, the Director of the International Trade Brazil Office for the State of North Carolina Department of Commerce – International Trade Division located in São Paulo, Brazil provided two key reports. The first was the “Commercial Service (CS) Brazil Market Research – Furniture Industry in Brazil” (2007) report and the second supplied was “The Emergence of New and Successful Export Activities in Brazil: Four Case Studies from the Manufacturing and the Agricultural Sector” (2008). Both of these reports contain information about the general characteristics of the furniture companies located within Brazil.

“The CS Brazil Market Research – Furniture Industry in Brazil” (2007) provided information about the following topics: Market Summaries, Market Highlights, Domestic Production, Import/Exports, Market Access, and information about domestic and international furniture industry shows. This report was sponsored by the United States Department of Commerce, which has an office located in Rio de Janeiro, Brazil. The main purpose of this report was to help potential investors understand the furniture market within Brazil. Therefore, the main topics covered are items important to

companies who participate within the global market. This report provided valuable data about the economic climate of the furniture industry in Brazil. It described the type of companies, size, whether they are mainly family owned, and provided information about taxes and the location of domestic furniture shows. All of these data helped in establishing the Brazilian furniture industry landscape. The research in this dissertation relies heavily upon knowing the economic and cultural landscape of Brazil so the spatial distributions of companies can be properly understood. The CS-Brazil report highlights the fact that very few U.S. furniture manufacturers are established in Brazil, a situation that speaks to the culture of the Brazilian furniture industry. This could be due to the differences in purchasing, tax laws (The Industrial Products Tax and The Merchandise Circulation Tax), trust (having a presence in Brazil) and the overall Brazilian culture of doing business (Leal 2007).

The second report on “The Emergence of New and Successful Export Activities in Brazil: Four Case Studies from the Manufacturing and the Agricultural Sector” (2008) was produced by the Inter-American Development Bank – Latin American Research Network. The report investigated new export-oriented activities and how this affected the economy of Latin American countries. This report provides a generalized description of the Brazilian furniture industry. The report also provides information on the larger furniture production clusters within Brazil, including a case study of the São Bento do Sul Furniture Cluster which is located within the study area of this project (Santa Catarina, Brazil). The case study focuses on history, characteristics (strengths and weaknesses), and recent strategic actions in the furniture cluster. To understand the

cluster, a few well-known companies within the cluster are interviewed to better understand the changes made over the years to the cluster and how companies are part of the changes occurring. “The Emergence of New and Successful Export Activities in Brazil: Four Case Studies from the Manufacturing and the Agricultural Sector” (Roacha et al. 2008) supplies information about the furniture landscape, especially within Santa Catarina and more particularly the São Bento do Sul furniture cluster. Other material includes historical data, which includes information about the original settlers who were immigrants from European countries, mainly Germany and Italy. Knowing this information is critical for understanding how this location ties into the Brazilian GPN. Understanding the historical settings and culture also helps to explain how these companies are structured and operate.

#### *Associação Brasileira das Indústrias do Mobiliário*

The Associação Brasileira das Indústrias do Mobiliário (Abimóvel) is the leading furniture industry association for Brazil. Abimóvel collaborates with other government programs and departments such as Apex-Brasil (the Brazilian agency that deals with exports and investments) and Sebrae (Sebrae supports micro and small business by promoting the sustainable and competitive development of small businesses) to help furniture companies grow in the local and international markets. Abimóvel is instrumental in helping organize trade fairs, expos, seminars and lobbying for the furniture industry to the government. In 1998, Abimóvel created the PROMOVEL program to increase the export of Brazilian furniture. The purpose of this was to increase

Brazil's "competitiveness and to gain new shares in the international market" (Tomaselli 2002 p.3). From this program, a guidebook was created, *Estudos: O Mercado Norte-Americano de Móveis* to help Brazilian furniture companies understand the United States furniture market and what Brazilian companies should do if they want to enter into this market. This guidebook gives a Brazilian furniture market perspective on how to enter into the US market. Jeff Holmes, one of the American consulting partners of this publication, was also interviewed and discussed the Brazilian furniture market while providing this publication to the researcher.

#### *Instituto de Estudos e Marketing Industrial*

The Instituto de Estudos e Marketing Industrial (IEMI) produces an annual report entitled "Brasil Móveis" which examines the market conditions of the Brazilian furniture industry by states and Brazil as a whole. Joaquim M. Dias (IEMI – Assessoria) provided excerpts from the 2012 report which includes information about global production and consumption, overall summary of the furniture sector in Brazil, effects on Brazilian economy, and investments and national evolution of the industry. The entire 2013 report was obtained for use in this research. This report is published by IEMI with support from the Associação das Indústrias de Móveis do Estado do Rio Grande do Sul (MOVERGS). After purchasing the report, a follow-up email (June 05, 2014) to Felipe Grando, the Economic Coordinator for IEMI, yielded more specific year 2013 data on the Brazilian State of Santa Catarina which was contained within this report. This data included

imports, exports, and general information about how the State of Santa Catarina compares nationally.

The 2013 report covers Brazilian intra-national and foreign trade, and provides a useful list of Brazilian furniture companies within Brazil. The list of Brazilian companies is broken down by states located within Brazil. This report, although not comprehensive but representative, lists 69 furniture companies in the state of Santa Catarina. Included with this dataset are attributes of location, contact information, main products, materials used, established dates, number of employees and if they export. However, adding three prominent companies not mentioned in this report brings this list to a total of 72 furniture companies. Although São Bento do Sul and the Brazilian Furniture Group (BFG) are not companies, but a furniture cluster and a partnership created for furniture distribution, they will also be examined within this dissertation because of their importance within the furniture industry in Santa Catarina. The three additional companies added were Indústrias Zipperer, Temasa Móveis, and Rotta Móveis. The reasons these companies were added is because of their uniqueness in conducting business and historical importance within Santa Catarina.

- Indústrias Zipperer – This is an important furniture company located within the São Bento do Sul furniture cluster. This company was one of the first to export furniture outside of the state and country. Other companies within this cluster modeled their business practices after Indústrias Zipperer (Rocha et al. 2007 and Rocha et al. 2008).

- Temasa Móveis – This is an important company to understand because they are not the lead company within their production network. They do not produce products for Temasa, but are contracted out by larger companies that sell furniture, such as Walmart, Ikea, and Best Buy. Therefore, Temasa is heavily influenced by these lead companies in terms of production, quality and type of product.
- Rotta Móveis – This company is important because of its role in the Brazilian Furniture Group. They also are unique in the fact that they have store locations where you can buy their furniture, but have also created a website just for Brazil where you can buy furniture. There is no physical store for the furniture sold on this website, the furniture is shipped directly from the factory to the individual’s home.
- Brazilian Furniture Group – BFG is a partnership between Renar and Rotta Móveis. These two companies are located in two different towns within Santa Catarina about an hour apart. BFG is located in downtown High Point, NC within the furniture market area. This company is important to study because of the partnership that was created to help both companies be able to sell their products in a location that is very well attended by furniture buyers and sellers.

The location and names of these companies were obtained by talking with industry representatives and utilizing literature such as “The Emergence of New and Successful Export Activities in Brazil: Four Case Studies from the Manufacturing and the

Agricultural Sector” (2008), which highlighted companies that were not in the *Brasil Moveis 2013* report. Additional attribute data was added to the sample dataset, items about social media and languages found on websites. All 72 companies were Googled to see if they had a website and from the website more information was collected such as if the website had different language options and links to Facebook, YouTube, and Instagram. All of this information was combined with all the attribute data collected from the *Brasil Moveis 2013* report. Not all companies had websites; although during the Google searches it was revealed that many had a Facebook page, so this information was also gathered.

Six case studies (Figure 4 ) (Temasa Móveis, Rotta Móveis, Renar Móveis, Indústrias Zipperer, Rudnick Móveis, Artefama Móveis) were chosen based on the accessibility of information, historical significance and whether they followed the same patterns as the overall sample dataset provided by the *Brasil Móveis 2013* report and product offerings (Figure 5). Three (half) of the case studies were visited in their cities of residence. The three places visited were: Temasa Móveis – Caçador Santa Catarina, Brazil; Rotta Móveis – Caçador Santa Catarina, Brazil; and Renar Móveis – Fraiburgo Santa Catarina, Brazil. These six companies were chosen because they all represent the sample dataset in terms of characteristics. Other reasons for their selections were based on the way they used technology and the innovative ways of conducting business, so they can be competitive within the global furniture market.

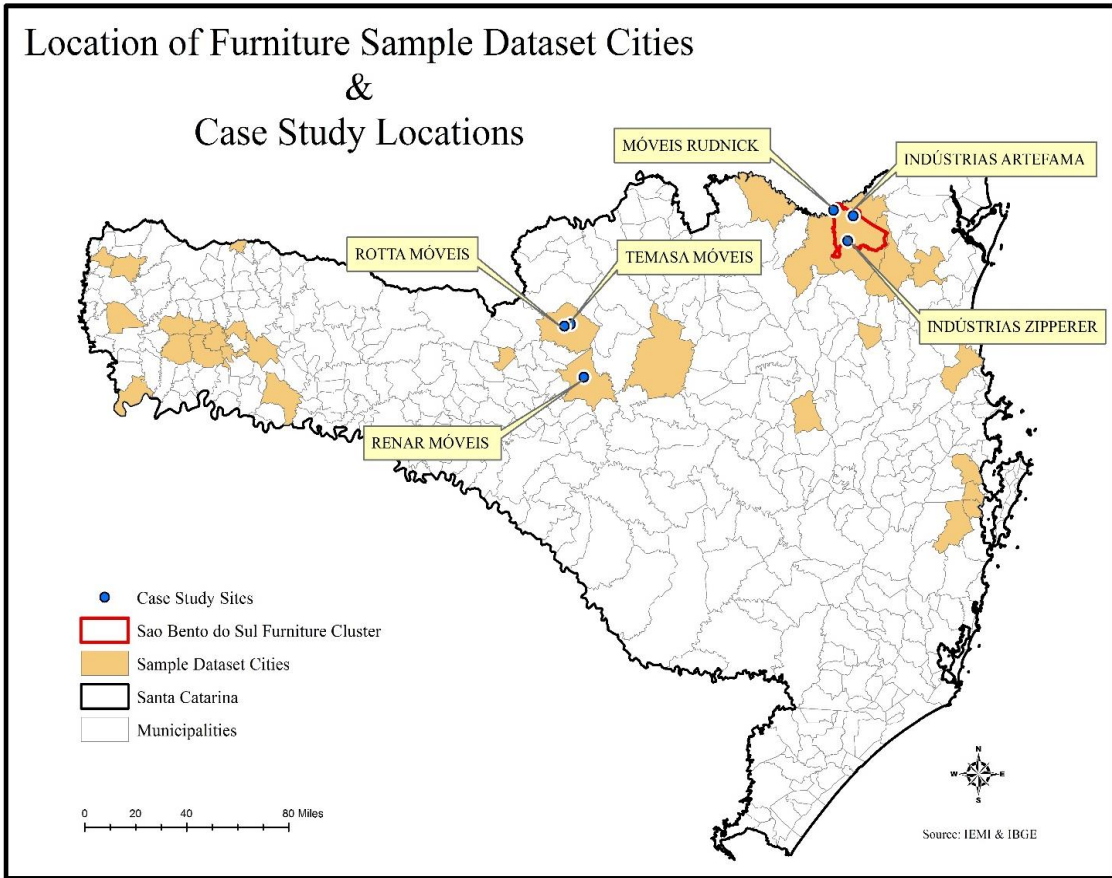


Figure 4. Location Furniture Sample Dataset Cities, Santa Catarina Brazil



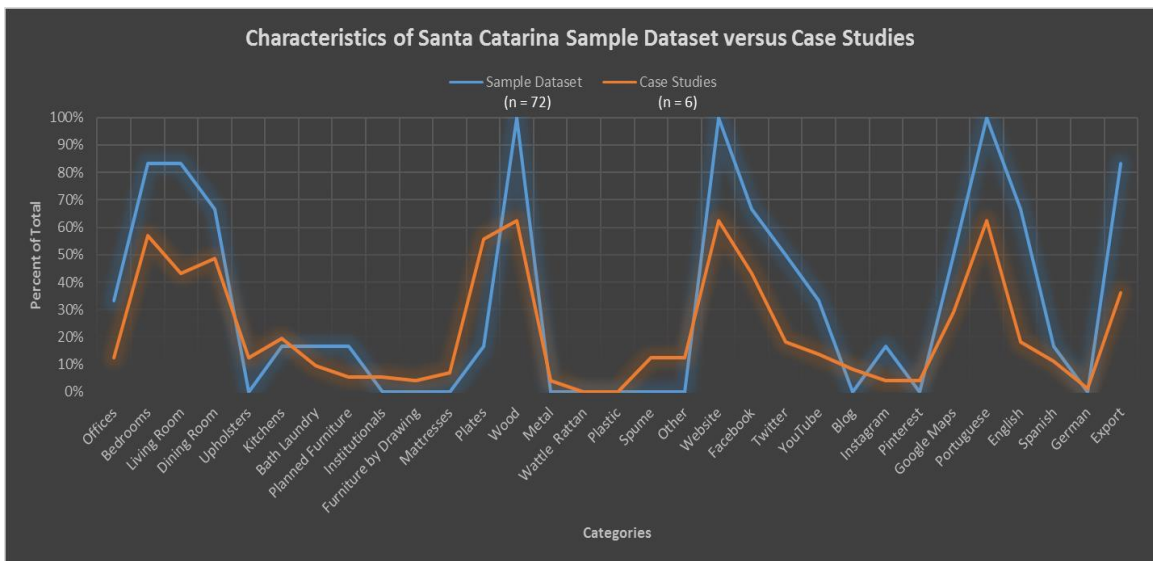


Figure 5. Characteristics of Santa Catarina Sample Dataset versus Case Studies.  
Source: IEMI and Author

### Interviews

Interviews conducted for this research took place via email, telephone and in-person. The in-person interviews occurred in High Point, NC and within the Brazilian state of Santa Catarina. Site interviews to the Brazilian Furniture Group (BFG), located in High Point, NC occurred April 2013 and October 2014. The individuals interviewed during these times were Marcelo Frey (Owner of Renar Móveis) and Josevil Palmeria (Director of International Operations of Renar Móveis), and Ilton Rotta, (Owner Rotta Móveis). These interviews were to better appreciate each company’s history and how Renar and Rotta Móveis partnered to create the Brazilian Furniture Group (BFG) in High Point, NC. These interviews lead to on-site interviews and visits to other Brazilian Furniture companies in Santa Catarina, Brazil – September 2013.

Other on-site interviews occurred in September 2013 at Renar Móveis, Rotta Móveis, and Temasa. All of these Brazilian companies are located in the State of Santa Catarina, Brazil. The purpose of these site-visits was to better understand individual companies from their perspective. These interviews included questions about the history of the company, its work force, products, and international furniture markets attended. The site visits permitted participant observation, by which the researcher gained insights from observing day to day operations. Locations of observation were planned and scheduled prior to visits due to the complexities of arranging scheduling, visas, and passports. The purpose of these visits were to observe production of furniture underway and to talk with company owners as well as individuals responsible for international exports.

Site visits to Brazilian furniture exhibitors at the High Point International Furniture Market in High Point, North Carolina occurred in April 2013 and October 2014. This visit enabled the researcher to function as a participant observer, and at the same time provided an opportunity to conduct semi-structured interviews with the companies' representatives. Since the interviews were semi-structured, a list of initial questions were prepared and memorized (Table 1) in order to initiate and frame the conversations between researcher and interviewee. This allowed the researcher to observe the way in which agents interact in a market setting and to observe deals being made, while at the same time talking directly with the agents in order to understand their roles and goals of attending an international furniture market. All of the interviews were based

on the semi-structured interview method. The interviews were conducted in an environment created by the participants.

Table 1. Semi-Structured Interview Questions – Site Visits for Renar, Rotta, and Temasa

<b>Semi-Structured Interview Questions for On-Site Visits for Renar, Rotta, and Temasa</b>	
<i>English</i>	<i>Portuguese</i>
How many workers do you have?	Approximadamente quantos funcionários você tem?
How long has your company been in operation?	Quantos anos tem a sua empresa está em operação?
Is your business currently family owned?	Foi a sua empresa de propriedade familiar no momento?
Was the business originally family owned?	Foi a sua empresa originalmente familiar?
What percentage of sales are in Brazil?	Qual o percentage de suas vendas são no Brasil?
What percent of your sales are international?	Qual a percentage de suas vendas são internacionais?
What countries do you get your materials?	O material utilizado na sua mobília vem do que países?
How many Brazilian markets do you attend each year?	Quantas feiras no Brasil você frequenta anualmente?
How many intentional markets do you attend each year?	Quantas feiras internacionais você frequenta anualmente?
Which international market is the most important one for you to attend?	Onde estão o comércio internacional masi importatnte mostra que você frequenta?

They were constructed so as to leave the interview open in order to explore the responses of the interviewee along several pre-selected lines. As Denzin and Lincoln (1998) explain, it is important to locate an informant, gain their trust, and establish a rapport with them. This allows a researcher access to interviewees and information that the researcher would normally not be able to access. This access was accomplished through the assistance of Josevil Palmeira, an employee at Renar Móviles, which is one of

the major Brazilian furniture firms. Josevil became the individual who helped me to establish trust within the furniture community in Santa Catarina, which in turn allowed other companies to be interviewed and visited by the researcher while in Brazil.

The interviews and interviewees were designed to capture different phases within the production chain (value, global or otherwise). Table 2 shows the individuals interviewed for the beginning of the production chain or the creation of the product. The individuals representing Rotta, Renar, Temasa and Artefama Móveis all hold positions where they have an in-depth knowledge of the entire value/ production chain of his or her respective company. These interviews consisted of site visits to Rotta, Renar and Temasa Móveis. Not only were interviews conducted during this time, but also an in-depth tour of the factories were provided by these individuals. This allowed for observation and an in-depth understanding of the beginning, of the value chain for these companies. The only exception to this list is Gustavo S. Kogure, who is the Administrator for the Universidade do Estado de Santa Catarina (The University of Santa Catarina) or UDESC. This university is located with the São Bento do Sul furniture cluster and through the years has provided numerous educational opportunities for furniture workers and future furniture employees. Mr. Kogure provided insight to the role of UDESC and training optional furniture employees.

Table 2. Interviews of Individuals and Companies Dealing with the Beginning of the Production Chain and Product Creation.

<b>Individuals and Companies Interviewed</b> <b>Beginning of Production Chain – CREATION</b> <i>(Santa Catarina – Brazil)</i>				
<b>Name</b>	<b>Organization</b>	<b>Title</b>	<b>Interview Date</b>	<b>Interview Method</b>
Josevil Palmeira	Renar Móveis	Director of International Exports	September 2, 2013	In-person Interview (Fraiburgo, Santa Catarina - Brazil)
Ilton Rotta Jr.	Rotta Móveis	Design Department (Owner's Son)	September 3, 2013	In-person Interview (Caçador, Santa Catarina – Brazil)
Tania Bleichvel	Temasa Móveis	Director of Commercial Export	September 3, 2013	In-person Interview (Caçador, Santa Catarina – Brazil)
Felipe Grando	IEMI	Economic Coordinator	June 05, 2014	Email
Angelo Luiz Duvoisin	Artefama Móveis	Commercial Manager	November 7, 2014	Email
Gustavo S. Kogure	UDESC	Administrador	November 18, 2014	Email
Josevil Palmeira	Rudnick Móveis	Director of National Sales	November 23, 2014	Email

The next set of interviews focused on the end of the furniture value chain: distribution (Table 3). Since, many of the furniture companies in Santa Catarina export to the United States and some attend the High Point, NC International Furniture Market, an emphasis was placed on interviewing individuals associated with this market. Renar and Rotta Móveis partnered to create the Brazil Furniture Group which has a showroom in High Point, NC.

Table 3. Interviews of Individuals and Companies Dealing with the End of the Production Chain and Product Distribution.

<b>Individuals and Companies Interviewed</b> <b>End of Production Chain – DISTRIBUTION</b> <i>(High Point – North Carolina)</i>				
<b>Name</b>	<b>Organization</b>	<b>Title</b>	<b>Interview Date</b>	<b>Interview Method</b>
Josevil Palmeira	Renar Móveis	Director of International Exports	April 18-19, 2013	In-person Interview (BFG – High Point, NC)
Marcelo Frey	Renar Móveis	Owner/ President	April 18-19, 2013	In-person Interview (BFG – High Point, NC)
Andy Counts	American Home Furnishings Alliance	CEO	June 19, 2014	Telephone
Jerry Epperson	Mann Armistead & Epperson. Ltd	Partner	July 22, 2014	Email
Thomas P. Conley	High Point Furniture Market Authority	President/ CEO	July 23, 2014	Email
Jeff Holmes	J. Holmes, LLC	Owner	July 24, 2014	Email
Jeff Holmes	J. Holmes, LLC	Owner	August 1, 2014	In-person Interview (Green Bean – Greensboro, NC)
Chris	The Light Garden	-----	October 22, 2014	In-person Interview (High Point, NC)
Raul	Metrotex Desions	-----	October 22, 2014	In-person Interview (High Point, NC)
Marcelo Frey	Renar Móveis	Owner/ President	October 22, 2014	In-person Interview (High Point, NC)
Olga Terentieva	Minick Wood Products	General Manager	October 22, 2014	In-person Interview (High Point, NC)
Ilton Rotta	Rotta Móveis	Owner/ President	October 22, 2014	In-person Interview (High Point, NC)

Both owners were interviewed during these visits to the High Point Furniture Market. Other key interviews were with the President/CEO of the High Point Furniture Market Authority, the CEO of the American Home Furnishings Alliance, and with a Partner from Mann Armistead & Epperson. Ltd. These interviews focused on the importance of knowing the industry, culture, and how technology allows individuals to connect virtually. Interviews also focused on the importance of export and distribution of the product. Another key interview was with J. Holmes, LLC, which is a furniture consulting company that has worked in Brazil. This company also acted as a consultant to the PROMOVEL project and the book: Estudos: O Mercado Norte-Americano de Móveis (Studies: The North American Furniture Market). Other interviews included non-Brazilian companies participating at the High Point International Furniture Market in order to gain a fair understanding of the local furniture expectation and landscape.

## CHAPTER IV

### RESULTS AND DISCUSSION

The spatial concentration of furniture companies is an important strategic element of the global production chain since it can allow some furniture companies to better leverage and share resources, facilitate knowledge spillovers and gain access to global furniture markets. Therefore, it is essential to examine the fundamental geography of furniture in Brazil in order to better understand how industry clusters can be an asset for furniture companies trying to enter into the global market and build trust. With the rise of new global technologies that all but eliminate nation-state borders, many furniture companies who are not part of a well-known furniture cluster also now have an opportunity to enter into global markets if they effectively embrace web-based technologies. While web-based technologies allowed some furniture companies to gain access to the international furniture market, these companies still need to be grounded in product and production innovation and develop meaningful relationships with other companies, buyers and sellers in order to develop a strong production chain/ network.

This dissertation focuses on several innovative furniture companies in the state of Santa Catarina, Brazil to examine how furniture companies in this location accomplish these types of relationships while using web-based technologies to improve their production chains and be competitive at a global level. Before examining the furniture



market within Santa Catarina, a general understanding of the overall Brazilian furniture industry is necessary in order to place what is happening in Santa Catarina in a broader strategic context.

### **The Brazilian Furniture Industry by Size and Region**

Furniture is an important industry within Brazil. Approximately 39,729 small and medium sized (SMEs) furniture companies (less than 500 employees) exist in Brazil. The majority of these companies are family owned and sell products locally (Mergent Intellect 2014, Rocha et al. 2012). For example, just over 91 percent of all furniture and furniture related product manufacturing by SMEs in Brazil employ between 1-10 workers, while only one percent of all such companies employ more than 100 workers (see Table 4).

Table 4. Small and Medium Sized Brazilian Furniture and Related Product Manufacturing Employment, 2014.

<b>Number of Employees (Corporate Wide)</b>	<b>Actual Number of Companies</b>	<b>Percent</b>
Less 4	8,443	25.5 %
5 – 10	21,773	65.8 %
11 – 49	2,218	6.7 %
50 – 99	351	1.1 %
100 – 500	295	0.9 %
<b>TOTAL</b>	<b>39,729</b>	<b>100%</b>

Source: Mergent Intellect, 2014

According to Rocha et al. (2008), the average Brazilian furniture cluster has between 100 and 300 firms. Figure 6 illustrates the simplicity and modest arrangements

that shape many of these smaller furniture companies in Brazil. This company is located within the Brazilian state of Alagoas (northeastern Brazil) and employs three employees: one owner and two workers. They produce furniture for locals who live in and around their neighborhood. This company occasionally acted as a sub-contractor for larger furniture companies to help supply local orders for custom cabinets, tables and chairs (Sloop 2001). In this example, the machines tend to be low-tech (not computerized). Usually the machines consist of basic tools for constructing furniture such as a table saw, planer, lay, and chop saw to name a few. This particular company was located within the home of the owner. The two workers live within walking distance in the same neighborhood.



Figure 6. Small Furniture Company in Alagoas, Brazil. Source: Author 2001

Figure 7 reveals the lay (piece of equipment used in making spindles) the owner is working on located within his home, with the dining room chairs located to the left of the lay. Not shown in the picture to the right is the home's living room with couch and television. This is noteworthy because this company represents this individual's life, not just a job. In this particular case, the business has two extra employees, but the family also helps with the business even though they are not counted as employees. Family members help with cleaning up during and after jobs and sorting scraps that can be used for another job versus scraps that will be thrown into the garbage. Assistance is also given with some of the finishing, such as staining or sealing the finished product.

Companies like this dominate the Brazilian furniture production chain. While many of these companies may be relatively flexible and nimble, and grounded in the local culture and markets, they are also labor-intensive companies operating on a low profit margin that struggle with day-to-day quality control issues. Although some of these companies develop strategic partnerships with larger furniture companies, many have limited resale and generate negligible value added revenues due to a lack of scale economies and technological deficiencies.



Figure 7. Lay work in Alagoas, Brazil. Source: Author 2001

In comparison with smaller companies like the one just mentioned, a small number of Brazilian furniture companies are more capital intensive, have more employees, more high-tech machines (some computerized), more technology, and access to the global furniture market. Figures 8, 9, and 10 show a very different furniture company set-up from the smaller furniture company in Alagoas. These photos were taken during visits to Temas Móveis (420 employees) and Rotta Móveis (280 employees), which are both, located within the State of Santa Catarina.



Figure 8. Furniture Production Temasa Móveis, Santa Catarina Brazil.  
Source Author 2013



Figure 9. Furniture Production Temasa Móveis, Santa Catarina Brazil.  
Source Author 2013

These figures illustrate the drastic differences in the scale of production between these companies and the smaller company from Alagoas observed in figures 6 and 7. These companies have more employees, machines (i.e. computerized ones), and resources available. The layout of these companies' production areas are strategically planned to minimize down time between the different parts of production while increasing productivity. In the earlier example (Figure 6), everything happens in the same location – design, production, and finishing. These larger companies tend to invest in technology (as shown in figures 8-10), training, and employees.



Figure 10. Furniture Production Rotta Móveis, Santa Catarina Brazil.  
Source Author 2013.

These companies also invest in examining workflow and production methods so they can stay competitive in the local, regional and global markets. In contrast, smaller companies tend to focus on word of mouth or reputation within their communities for business.

Another noticeable difference is the physical structure of the different companies.

Smaller businesses tend to be part of the home residence or a small structure, such as a shed, which only holds a couple of employees with the essential equipment needed for furniture production. However, larger companies have a physical factory-based location that is dedicated to furniture production. Another distinction between the smaller

companies and larger companies are their overall goals pertaining to production, distribution and sale of their products. This reflects in the total number of sales.

In terms of sales, nearly all of these Brazilian SMEs furniture companies have corporate wide sales of less than one million dollars each year (Table 5). Many of these companies are small and medium companies consisting of ten or fewer employees who sell their products in their local community, state, or region. An additional difference between the smaller companies (less than 10 employees) and larger ones, is that the smaller companies are usually embedded within a community and are being paid in cash and at times not reporting their earnings as do larger companies who are regularly being audited by the local and federal governments.

Table 5. Small and Medium Sized Brazilian Furniture and Related Product Manufacturing Sales, 2014.

<b>Sales (Corporate Wide, in millions)</b>	<b>Number of Companies</b>	<b>Percent</b>
Less than \$1 million	32,989	99.81 %
\$1m - less than \$5m	36	0.11 %
\$10m – less than \$50m	23	0.07 %
\$50m – less than \$500m	3	0.01 %
<b>TOTAL</b>	<b>33,051</b>	<b>100%</b>

Source: Mergent Intellect 2014.

To fully understand the Brazilian furniture industry at a broader scale, an understanding of the geospatial distribution of the furniture industry within Brazil is necessary. Location is a key factor in terms of employees and sales, and one way to analyze the spatial distribution of furniture factories/ clusters and employees within



Brazil is to disaggregate based on the five regions designated by the Instituto Brasileiro de Geografia e Estatística (IBGE) which are equivalent to the major census regions in the United States. The IBGE regions include the North, Northeast, Mid-West, South, and the Southeast. Each of these official designated regions includes between three (i.e. South) and nine (i.e. Northeast) states (Table 6).

Table 6. States within the IBGE Regions of Brazil.

<b>Regions</b>	<b>States Included Within the Regions</b>
<i>North</i> (Norte)	Acre, Amapá, Amazonas, Pará, Rondônia, Roraima, Tocantins
<i>Northeast</i> (Nordeste)	Alagoas, Bahia, Ceará, Maranhão, Paraíba, Piauí, Pernambuco, Rio Grande do Norte, Sergipe
<i>Mid-West</i> (Centro & Oeste)	Mato Grosso, Mato Grosso do Sul, Goiás, Distrito Federal
<i>South</i> (Sul)	Rio Grande do Sul, Santa Catarina, Paraná
<i>Southeast</i> (Sudeste)	São Paulo, Minas Gerais, Rio de Janeiro, Espírito Santo

Source: IBGE 2015

Table 7 shows the distribution of furniture companies who manufacture certain types of products (wood, metal, other) by region in Brazil. The numbers shown in Table 7 represent the number of companies that produce a particular product.

Table 7. Number of Furniture Related Companies in Brazil by Region, 2013.

<b>Products</b>	<b>Brazil</b>	<b>North</b>	<b>Northeast</b>	<b>Southeast</b>	<b>South</b>	<b>Mid-West</b>
Wooden Furniture	14,685	377	1,560	5,710	6,017	1,021
Metal Furniture	1,604	24	293	683	489	115
Other Furniture	843	16	157	287	334	49
Mattresses	398	19	86	154	101	38
<b>TOTAL</b>	<b>17,530</b>	<b>436</b>	<b>2,096</b>	<b>6,834</b>	<b>6,941</b>	<b>1,223</b>

Source Brasil Móveis 2013 (IEMI)

In 2013, Brazil generated 17,530 total furniture companies of which 40 percent (or 6,941 companies) are located within the case study region of this dissertation (i.e. the South). This region has more companies than any other region compared to just 436 companies in the Northern region. Some of these companies include Renar Móveis, Rudnick Móveis, Temasa Móveis, and Rotta Móveis. All of these companies will be further examined later in this chapter as part of the case study section. In the Southern region, the market share includes furniture companies that produce metal furniture (489), mattresses (101), and other furniture (334), but 41 percent (6,017) of all companies in the South produce wood based furniture products, thereby creating a spatial concentration of wooden furniture production in the Southern region of Brazil. This coincides with the original settlement patterns of Brazil, with the Southern portions of Brazil being heavily populated and settled by European immigrants (German and Austrian were the largest groups) who brought with them their woodworking and forestry knowledge. These immigrants created communities of individuals who own an in-depth knowledge of forestry and woodworking, and much of this cultural legacy eventually lead to the creation of furniture clusters such as the São Bento do Sul furniture cluster located in the

study area of this dissertation in the state of Santa Catarina. Clusters like São Bento do Sul then provided opportunities for other individuals to create businesses through various spin-offs and knowledge spillover. The CEO of Artefama Móveis, Álvaro Weiss, was interviewed in 2006 about his thoughts on the expansion of the São Bento do Sul furniture cluster, and the spin-off companies that occurred during the 1970s, he explains,

Many new firms were created during the colonial-style boom. The industry ‘exploded’ during the 70s here in São Bento. Many of these new entrepreneurs were our employees... They saw an opportunity: ‘Ah-ha, a lot of people are earning money, all these new plants, I am going to do the same’. And they left our company and established their new businesses. And then they invited professionals who worked in our plants; ‘Come, here you are going to be a manager, there you are only another one.’ They also copied some of our models. Some survived, others closed. A few succeeded (Rocha et al. 2008 p. 36).

Of these spin off companies, Mr. Weiss explains that not all of them were successful and some closed. During the 1980s the demand for colonial-style furniture (which consisted of natural finishes with clean and simple designs) started to decline and the companies that solely focused on this kind of furniture suffered declines in sales volume and some even had to close. However, companies like Artefama, that were grounded in innovation and a good understanding of the local, regional and global markets were able to survive this down turn because they were able to adjust their products to meet new market demands.

Figure 11 shows the spatial distribution of Brazil’s population by region compared to the percent of furniture related companies per region. It is interesting to note the Southern and Southeastern regions account for 79 percent of furniture related

companies in Brazil but only 54 percent of the total population of Brazil (IEMI 2013 and IBGE 2016), suggesting that a disproportionate number of furniture companies are located in these regions relative to the rest of the country. These findings concur with other furniture studies and reports about the furniture industry in Brazil. For example, Leal (2007 p.2) indicated that “historically, the greatest proportion of Brazilian manufacturers has been concentrated in areas of large population density in southern Brazil.” These regional clusters allow for the creation of spin-off companies and also frequently produce highly trained skilled labor furniture pools.

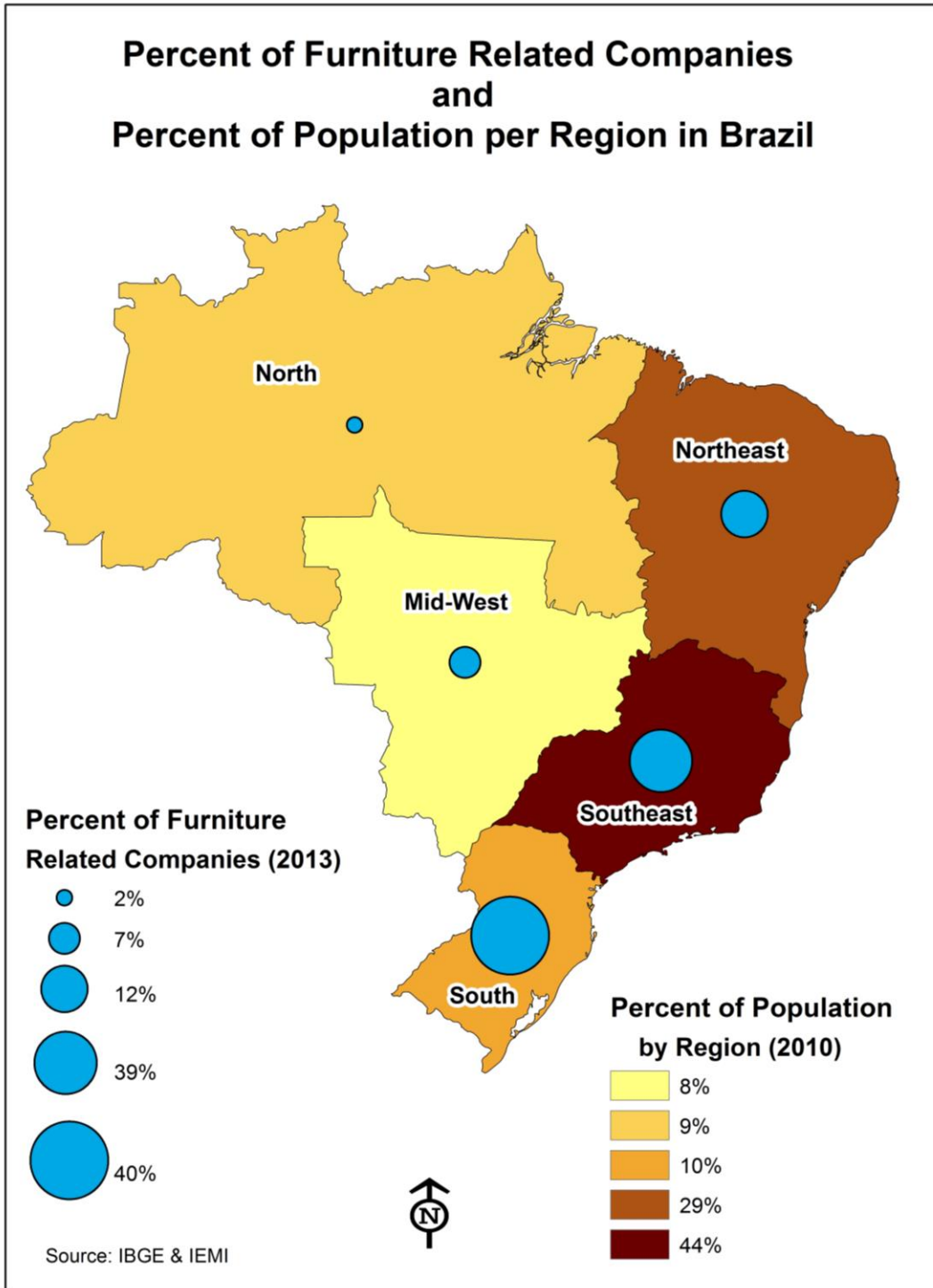


Figure 11. Percent of Furniture Related Companies and Percent of Population per Region

Figure 12 illustrates the spatial distribution and concentration of furniture manufacturers at a more disaggregated level (by state). A pattern emerges showing the Southern and Southeastern regions of Brazil to be heavily populated with furniture manufacturers. São Paulo is the only state to have over 2,000 companies, whereas, the states of Rondônia and Amapá located in the Northern region only have 10 to 29 furniture companies. São Paulo also accounts for 23 percent of the total population of Brazil according to the 2010 IBGE census. The higher the population, the greater the potential to have knowledge-spillovers, which in turn can be used to create more furniture companies, or spin-off companies to support furniture production. Although São Paulo contains numerous companies and populations, most of the furniture companies in São Paulo “produce office furniture.... [with an orientation] toward the domestic market” (Rocha et al. 2012, p.102).

Outside the Southern and Southeastern regions of Brazil the number of companies per state starts to decline. Numerous reasons exist for this such as isolation in terms of location – the interior of Brazil contains many unpopulated areas and poor infrastructure, lack of population and overall market potential. However, just having large populations and numerous furniture companies does not mean that a company will automatically be successful within the global furniture market. Companies need to be connected to other companies within the global production network in order to create business deals.

## Number of Brazilian Furniture Manufacturers by State, 2013

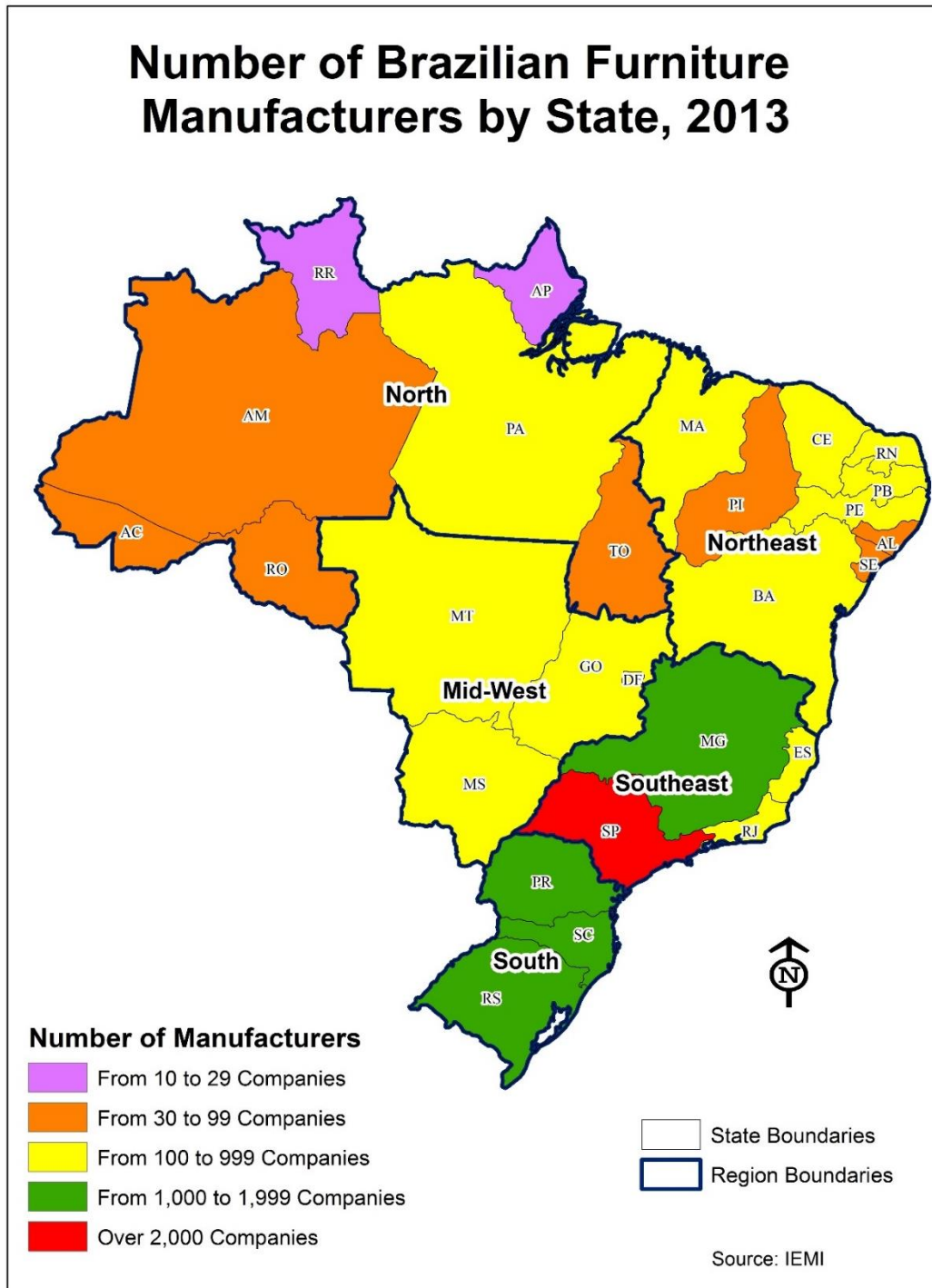


Figure 12. Brazilian Furniture Manufacturers by State, 2013

Although the focus of this dissertation is the furniture industry, it is important to note that São Paulo is home to numerous types of industry and very large international companies that already participate within the global economy, such as Anheuser-Busch InBev (ABInBev). AbInBev operates in 25 countries and has revenues of 47.1 billion dollars (ABInBev 2016). Nestle, which has over 2,000 brands, also operates from São Paulo with its headquarters located in Switzerland (Nestle 2015). Cargill is another company located here, operating within 70 countries worldwide with the Brazilian office being the largest producer of cocoa in the world (Cargill 2016). These examples show São Paulo as a business incubator that is connected in numerous global commodity chains and illustrates the importance of being embedded within a location in order to take advantage of the local labor pool and resources available.

Even though Santa Catarina has a lower population and fewer major international companies when compared to São Paulo, it is also tied into global markets. Some observers have suggested that Santa Catarina has become a breeding ground for startups in Brazil. According to Rosa (2016 p. 1) the technology sector in Santa Catarina grew 15 percent in 2015 compared to an average growth rate of 7.3 percent for the Brazilian IT sector.” Part of the reason for this growth is due to Santa Catarina’s ability to attract multinational IT companies. For example,

In 2014 Alstom acquired Reason Tecnologia, a provider of measurement and substation automation network products. The Israelis company Verint Systems, a leading provider of intelligence solutions for work and security force, bought Suntech, a Brazilian company that specialized in communication intelligence. Arvus, a Brazilian manufacturer of agriculture solutions, was acquired by Swedish Hexagon, a leading global



provider of design, measurement, and visualization technologies (Rosa 2016 p. 2).

Although these examples are IT based, they illustrate that Santa Catarina has numerous international companies with direct contact to global markets. Guilherme Bernard, CEO of Acate (Association of Technology Companies of Santa Catarina, Brazil) indicated that, “The main appeal of the region of Santa Catarina is not the tax incentives, but the qualified workforce and high quality of life” (Rosa 2016 pp. 2-3). Mr. Bernard understands that Santa Catarina has leveraged itself as a player in the global network because the state has made efforts to develop a global production network grounded in process and product innovation, with the utilization of technologies while maintaining an attractive value chain grounded in the local economy.

These examples of connectedness in São Paulo and Santa Catarina establish that international commodity chains can be beneficial to all businesses in Brazil because it can help with building trust and establishing the Brazilian brand. Through these types of connections Brazil has been able to create 15 bilateral agreements between the United States and the United States and Brazil have trilateral partnerships with third countries in support of biofuels and agricultural development, food security, fiscal transparency, health, and women’s rights (US Department of State 2013). In 2010 Brazil ranked seventh in the world economy with a GDP of more than \$2 trillion, which makes up almost 60 percent of all of South America’s total GDP (The White House 2011). These agreements with other countries is important to the furniture industry as well because there already exist some type of legal agreements that can help further nurture the

development of trust between two or more companies. Since it has been shown that Brazil and especially Santa Catarina participate within the broader context of the global economy, it is important to return the focus back to the furniture industry within Brazil and more specially Santa Catarina.

In continuing the focus of this dissertation and its examination of the Brazilian furniture industry, the focus now shifts to a cluster examination of the individual states within the Southern and Southeastern regions of Brazil regarding furniture manufacturing. Table 8 shows a breakdown of all the states by region in terms of number of firms, employees and the percent of furniture export based on data collected by IEMI in their annual report *Brasil Móveis 2013*. In terms of number of firms, the state of Rio Grande do Sul (240 firms) ranks first among all the states listed in the table with the state of Espírito Santo (13 firms) having the least number of firms. São Paulo has the most furniture employees (36,433) with Espírito Santo (2, 117) having the least number of employees. Interesting to note from this dataset, São Paulo has the greater number of employees, but the state of Rio Grande do Sul has the most firms. In regards to percent of furniture exported, Rio Grande do Sul is the leader with 36 percent, followed by Santa Catarina with 31 percent and Paraná rounds out third place with 23 percent. The leading three states in exports are all located in the Southern region. São Paulo is in fourth place overall with just 17 percent although it remains the highest exporter (in relative terms) out of the Southeastern region. Again the Southern region accounted for 54.6 percent of furniture employees while also being home to one of the oldest furniture companies

within the Southern and Southeastern regions, Butzke, which was established in 1899 and is still in operation today producing wooden outdoor furniture.

Table 8. Descriptive Statistics of the Furniture Companies within the Southern and Southeastern Regions of Brazil by State, 2013 Ranked by Percent Export

IBGE Region	State	# of Firms	Total # of Employees	Min. # Employees	Max. # Employees	Mean Year Companies Established	Min. Year Established	Max. Year Established	Percent Export
South	Rio Grande do Sul	240	30,127	1	6,000	1989	1939	2011	36%
	Santa Catarina	70	11,032	36	900	1983	1899	2008	31%
	Paraná	96	30,410	40	3,000	1986	1921	2005	23%
Southeast	São Paulo	171	36,433	36	2,000	1981	1925	2011	17%
	Minas Gerais	78	18,735	36	1,500	1988	1961	2004	14%
	Rio de Janeiro	20	2,137	40	450	1972	1920	1996	15%
	Espírito Santo	13	2,117	42	405	1985	1968	1999	15%

\*Source: IEMI Brasil Móveis 2013  
 #Ranked on Percent Export

Source: IEMI 2013

Although the majority of furniture manufactures in Brazil have less than 500 employees, it is important to acknowledge that there are companies with greater than 500 employees in the Brazilian furniture industry. Table 9 is a breakdown of companies within the Southern and Southeastern regions that have 500 or more employees based on the *Brasil Móveis 2013* dataset. Paraná leads with 19 companies with the largest company having 3,000 employees and Rio de Janeiro and Espírito Santo having no furniture companies with over 500 employees. The largest company in terms of employees is Herval Móveis (6,000) employees and it is located in the southern state of Rio Grande do Sul. Herval is an internationally known furniture company with locations throughout the world, including a showroom and distribution site in Florida (Herval 2016). It is also noteworthy to recognize Mannes, which has 900 employees. Mannes is an international

furniture company exporting to over 30 different countries. They specialize in upholstered furniture and mattresses within the hotel and hospital markets (Mannes 2016).

Table 9. Largest Companies with the Southern and Southeastern Region of Brazil – Ranked by Number of Companies with over 500 Employees, 2013

State	Number of Companies with over 500 Employees	Example Company	Number of Employees
Paraná	19	Gazin	3,000
São Paulo	14	Luizzi	2,000
Rio Grande do Sul	9	Herval	6,000
Minas Gerais	8	Itatiaia	1,500
Santa Catarina	3	Mannes	900
Rio de Janeiro	0	NA	NA
Espírito Santo	0	NA	NA

Source: IEMI 2013

The maps shown in figures 13 and 14 illustrate whether a state exports furniture (Figure 13) or imports furniture (Figure 14), and illustrates how the Southern and Southeastern regions of Brazil are more likely to be developing global connections relative to the rest of the country.



Figure 13. Brazilian States Exporting Furniture and Mattresses by Region, 2013



Figure 14. Brazilian States Importing Furniture and Mattresses by Region, 2013

By examining the exports (Figure 13) and imports (Figure 14) of furniture and mattresses by region, a pattern emerges showing that all of the states in the Southern region (Rio Grande do Sul, Santa Catarina, Paraná) have at least one company that exports and imports a furniture related product. The Southeastern regions (São Paulo, Minas Gerais, Rio de Janeiro, Espírito Santo) have 3 out of 4 states exporting and importing furniture and mattresses. In other words, the pattern previously seen in number of population and furniture related manufacturers continues to show that the Southern and Southeastern

regions of Brazil are very involved within the furniture market. This is important because "...for small firms in developing countries, participation in value chains is a way to obtain information about the upgrading necessary to gain access to the global market" (Pietrobellis and Rabellotti 2004, p.5). These SMEs are able to participate within these value chains because of the strong value chain connections established within the furniture clusters located within the Southern and Southeastern regions of Brazil.

The population of Brazil also is concentrated within Southern and Southeastern states, therefore, these areas of Brazil have been developed and are linked by road and railway networks which allow the movement of goods (furniture) from the companies to airport and shipping ports. A large population offers the opportunity to have a good labor pool for the furniture industry and also lends to individuals having knowledge and expertise in the furniture industry. The main furniture production centers by firm are located in São Paulo, São Bento do Sul, and Bento Gonçalves (Maria Leal 2007). Historically, the furniture clusters were located in areas of Brazil with greater populations, which are the southern portions of Brazil (Leal 2007). This is possibly due to the long history of the furniture industry in the Southern and Southeastern regions of Brazil. "Historically, the greatest proportion of Brazilian manufacturers has been concentrated in areas of large population density in southern Brazil" (Leal 2007, p. 2). Other explanations for the concentration of the furniture industry in the Southern part of Brazil are due to the natural environment of cooler weather and the rich pine forest. The Southern portion of Brazil contains approximately 12,355,000 acres of planted forest. These forests are home to the pine tree, which is one of the preferred woods for making

solid furniture in Brazil. Solid pine furniture is a product that sells well in the global furniture market and within the United States. These forests provide a country-specific competitive advantage for Brazil because of their “local availability of raw materials, skilled labor, and cost advantage, for example, a forest takes 12 to 15 years to grow in Brazil, compared to 30 to 50 years in Europe” (Rocha et al. 2008, 22). With the appropriate forest management schemes in place, Brazil can produce twice the pine wood that Europe can.

These Southern regions consist of states with some of the largest furniture concentrations in Brazil. Figure 15 illustrates the more detailed furniture clusters within these regions based on number of firms. The majority of clusters fall into the ranges of 54-85 and 86-150 firms. The Metropolitan Area of São Paulo is the largest cluster with 3,000 firms and the Bento Gonçalves furniture cluster in the state of Rio Grande do Sul is the second largest with 370 firms. Interestingly, the two states with the largest concentrations - São Paulo and Rio Grande do Sul - also have some of the smaller furniture clusters. Votuporanga (85 firms) and Tupã (54 firms) furniture clusters are located in São Paulo and Lagoa Vermelha (60 firms) in Rio Grande do Sul. This could be due to the cluster effect: companies with similar functions tend to group together and are usually supportive of one another.



## Major Brazilian Furniture Clusters by Firms in the South and Southeast Regions, 2005

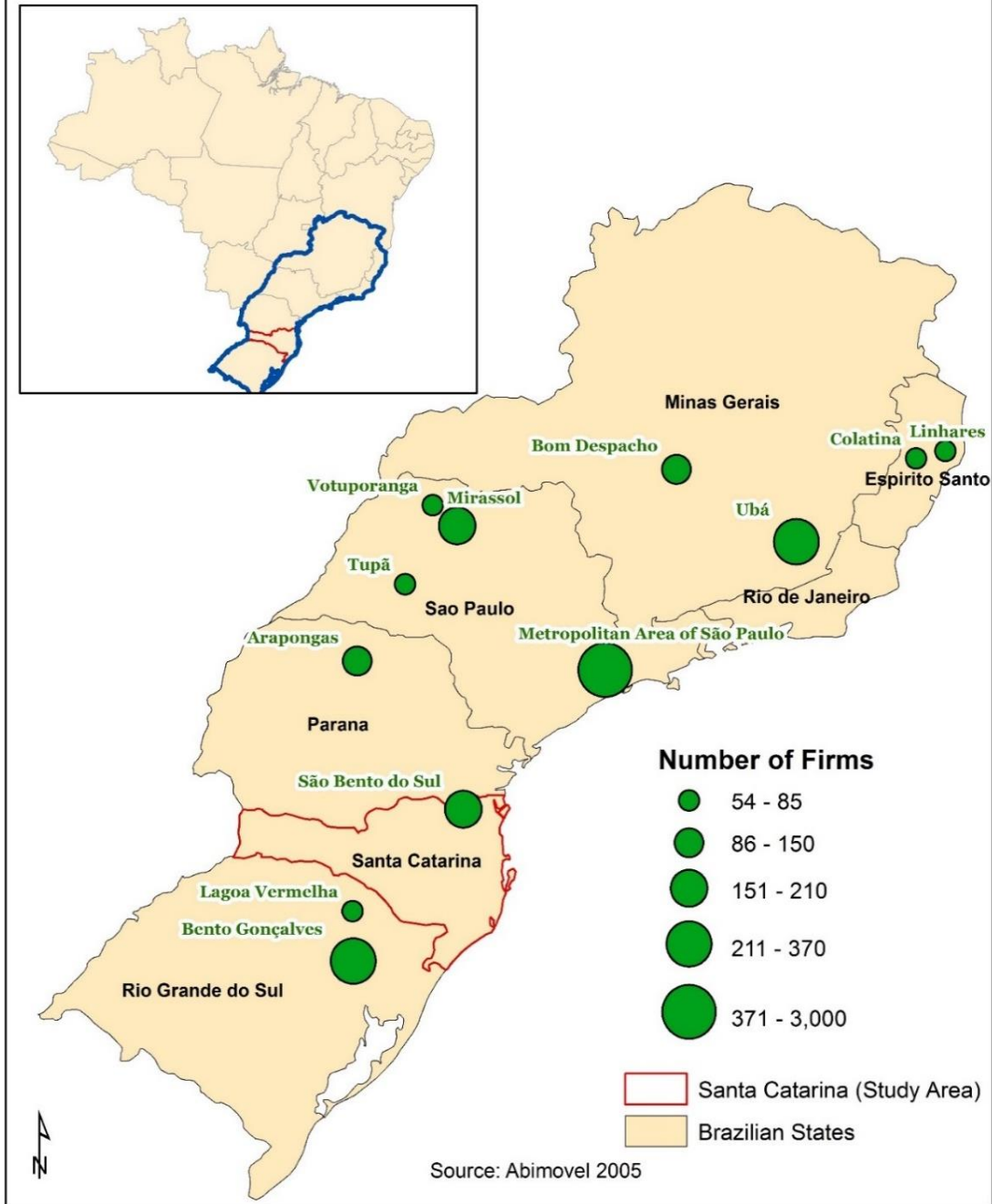


Figure 15. Major Brazilian Furniture Clusters Based on Firms

A supportive atmosphere is essential for the creation of spin-off companies. As new companies are created this can provide new competition that will prepare some companies for the global market, while it will mean the demise of other companies who cannot stay competitive. The focus area of this dissertation is Santa Catarina, which has the São Bento do Sul furniture cluster which contains 210 firms. However, according to Rocha et al (2008), “Many firms in the cluster export 80 to 100 percent of their production” (p. 25). So, although they are medium-sized furniture clusters in terms of number of firms, they have companies who are very effective in exporting their products. In other words, these companies participate within the global furniture market because they have some level of success in terms of building trusting relationships, being innovative, and using technology to be competitive. Later in this chapter, six case studies will provide more information and in depth analysis on the way in which these companies participate within the global commodity chains while keeping their culture and business grounded in the local economy.

After examining the spatial concentration of furniture firms, it is important to look at the number of employees based within each of these furniture clusters. Figure 16 illustrates the same furniture clusters based on number of employees. The Bento Gonçalves furniture cluster has the most employees (10,500) whereas the Metropolitan Area of São Paulo furniture cluster, which has the greatest number of firms, is in second place for number of employees (9,000). Another important cluster with a large concentration of employees’ relative to numbers of firms is Votuporanga in São Paulo and São Bento do Sul in the state of Santa Catarina. The Votuporanga furniture cluster

has fewer than 85 firms but employs 7,900 employees, which leads to the question whether these firms are on average larger than the ones found within the Metropolitan Area of São Paulo with approximately 3,000 firms and 10,500 employees.

## Major Brazilian Furniture Clusters by Employees in the South and Southeast Regions, 2005

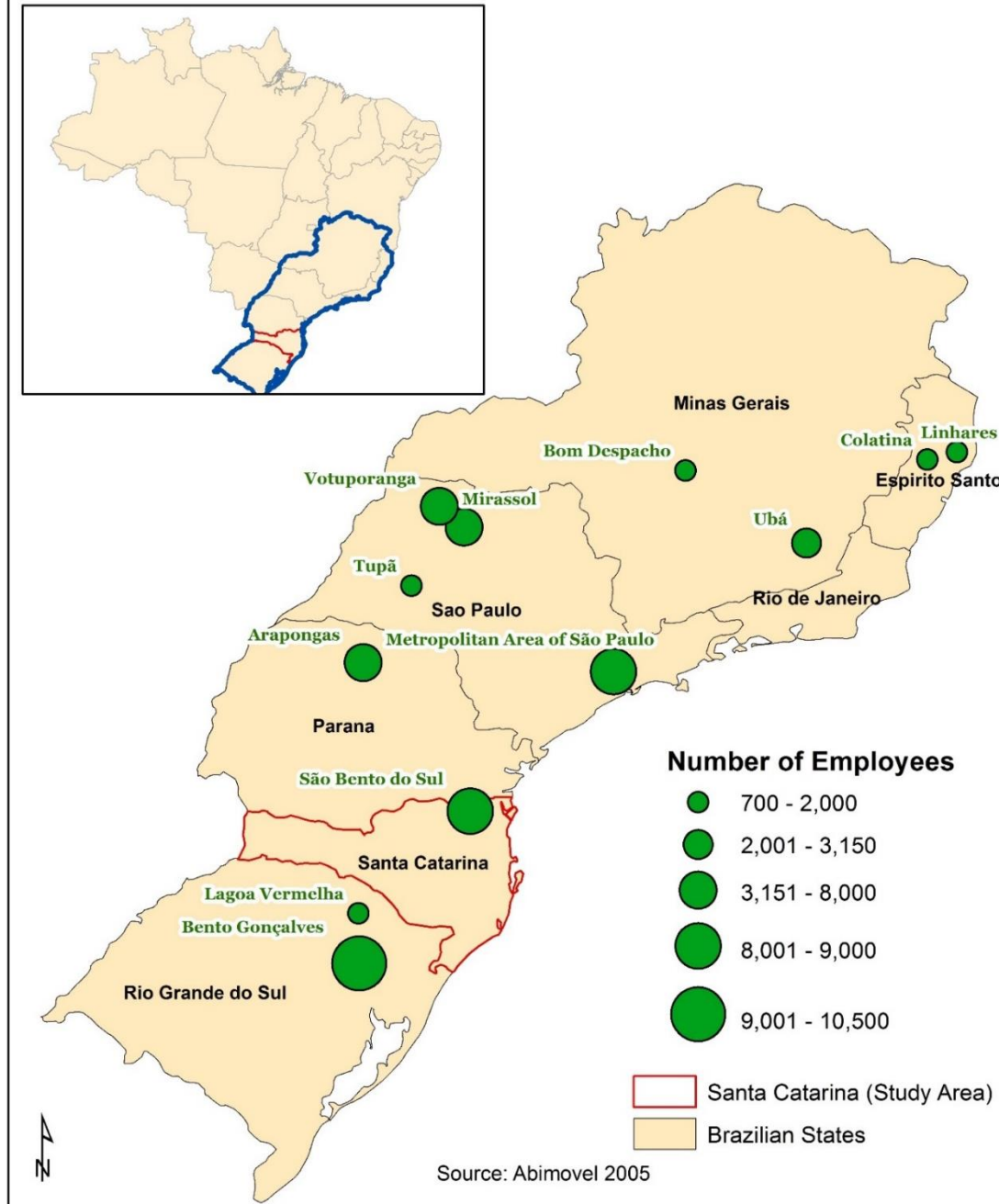


Figure 16. Major Brazilian Furniture Clusters Based on Employees

This variety demonstrates the diversity of spatial clusters in these regions regarding furniture firms and employees. The other cluster to have a lower number of firms but numerous employees is the São Bento do Sul cluster. In terms of firms, it was ranked fourth among the clusters shown in Figure 14. However, in terms of employees it ranks third. Despite this, the cluster “consist[s] mostly of small and medium-sized Brazilian family-owned and family-operated firms” (Rocha et al 2008 p. 26).

Although Santa Catarina is not the location with the most companies or highest population, they are home to one of the most productive furniture clusters in all of Brazil, namely the São Bento do Sul furniture cluster. This success ripples across the state and affects other furniture companies located within Santa Catarina. The remainder of this chapter will explore Santa Catarina by examining six furniture company case studies to show how this state became internationally connected within the global furniture market through their efforts of participating in a global production network grounded in process and product innovation. It will be argued that this innovation stems from the appropriate use of web-based technologies, modernized machinery, and development of a strong value production chain grounded in the local economy. During this process of establishing a presence within furniture production networks and value chains, there are constraints that must be overcome for a company to continue to progress into a global player. These constraints can include difficulties in developing a brand that is globally well-recognized and creating trust within the markets of the Global North, particularly as it relates to distribution networks. Without all of these key pieces in place, a furniture company will struggle to enter the global furniture market. Santa Catarina is an excellent

location for examining the spatial concentration of furniture companies and how these furniture clusters help companies enter the global market through innovation and building trusting relationships. Santa Catarina possesses a rich history of furniture manufacturing, innovation, and spatial concentration, and therefore serves as the focus of the rest of this dissertation.

### **Santa Catarina, Brazil**

Santa Catarina is known for its high standard of living and education in Brazil. “The cost of living is lower than in other states, the schools are good and the purchasing power per capita is among the highest in the country” (Santa Catarina 2016 Website). The state was originally settled by German and Austrian immigrants who brought with them their knowledge of wood working and their culture. The Germanic and Austrian culture is still visible today through their art crafts, language and culinary arts. Santa Catarina holds the second largest Oktoberfest in the world in the city of Blumenau, which attracts a million visitors each year (Santa Catarina 2016). Santa Catarina also has a long history in the furniture industry. Butzke Móveis, established in 1899, was one of the first furniture companies in Santa Catarina. Additionally, Santa Catarina is the location of the São Bento do Sul furniture cluster, which is one of the most successful furniture clusters within all of Brazil in terms of products exported (Rocha et al. 2008, Rocha et al 2012). Santa Catarina has a rich economy with many successful economic sectors. According to the official Santa Catarina website, Santa Catarina’s State government divides its

economic sectors into several major categories including Agribusiness, Electro-Metal-Mechanical, Textile, Lumber, Mineral and Technology (Table 10).

Table 10. Major Industrial Complexes Ranked by Employees within Santa Catarina, Brazil 2015

<b>Complex Categories</b>	<b>Largest Concentration</b>	<b>Number of Employees</b>	<b>Number of Companies</b>	<b>Percent of Santa Catarina's Total Exports</b>
<b>Textile</b> (clothing, shoes, and textile handcrafts)	Blumenau, Brusque	124,000	6,444	6.70%
<b>Lumber</b> (furniture, wood, paper and cellulose)	Lages, São Bento do Sul, Mafra	99,000	5,532	21%
<b>Electro-Metal-Mechanical</b>	Joinville, Jaraguá do Sul	86,000	4,548	23.50%
<b>Agribusiness</b> (food and drink)	Chapecó, Concórdia, Videira	76,000	2,970	38%
<b>Mineral</b> (mining industry and non-metallic products)	Criciúma, Tubarão, Urussanga	32,000	2,141	4.60%
<b>Technology</b>	Blumenau, Florianópolis, Joinville	13,000	1,500	0%

Source: Santa Catarina, Brasil, 2015 <http://www.santacatarinabrasil.com.br/en/polos-economicos/>

All of these categories export, except for technology. As noted earlier in this chapter, the technology sector in Santa Catarina doubled within the past year. Lumber, which includes

furniture, is the third largest exporting economic sector in Santa Catarina with 21% of total exports. However, lumber ranks second in number of employees (99,000) and number of companies (5,532), which makes this industry disproportionately important to Santa Catarina's local economy.

Figure 17 reveals the major lumber concentrations within Santa Catarina based on the officially defined clusters as designated by the State of Santa Catarina. The São Bento do Sul furniture cluster is located in the northeastern part of the state and is very important in the evolution of the furniture industry within Santa Catarina. Some of the founding companies (i.e. Indústria Artefama and Indústria Zipperer) are located within this cluster and were among some of the first companies to export their products internationally. At first, exports went mainly to Germany and other European countries because the owners were immigrants from these countries (Rocha et al. 2008, Sabel et al. 2012). Furniture is an important part of the local economy in Santa Catarina since it accounts for 21 percent of all exports in Santa Catarina.



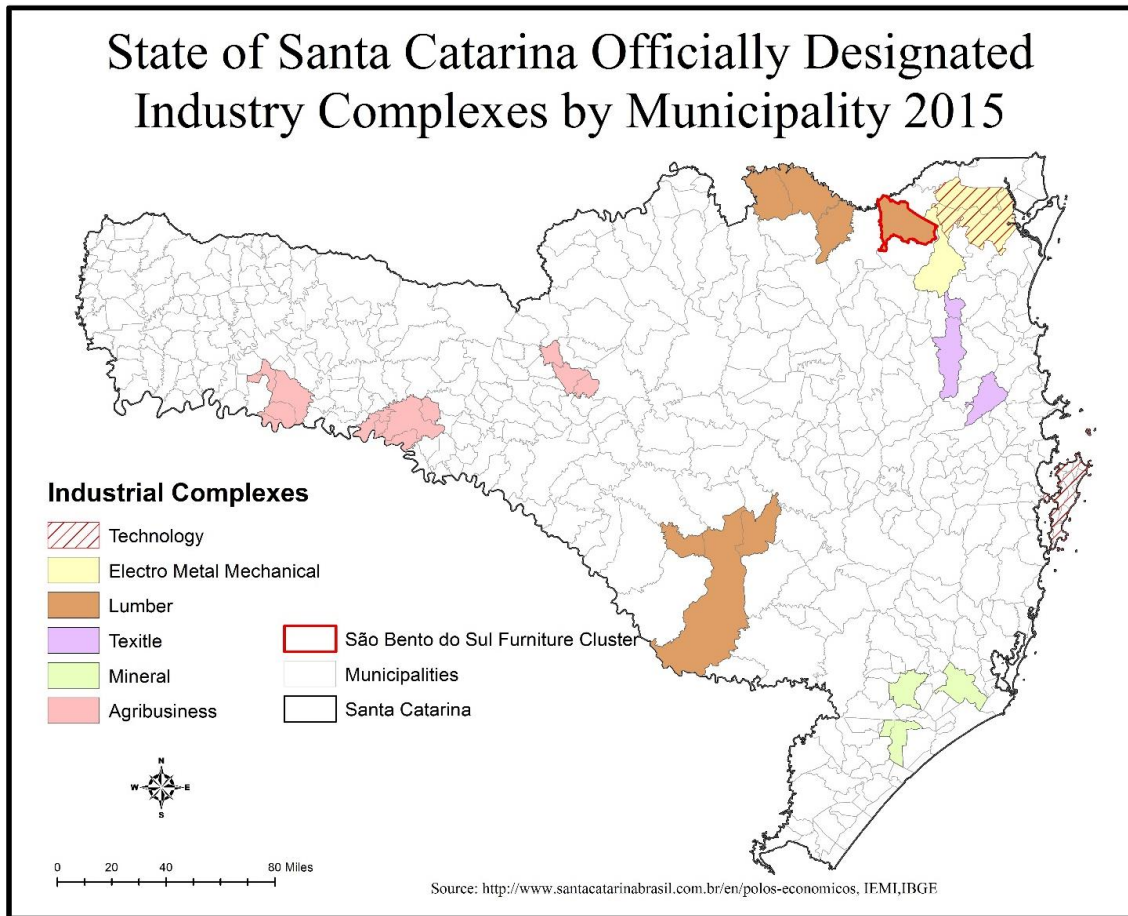


Figure 17. State of Santa Catarina Officially Designated Industry Complexes by Municipality, 2015

Table 11 illustrates the key role that furniture exports play in value (US dollars) in Santa Catarina from 2011 to 2013. Although Brazilian furniture and mattress exports declined in value from \$742.6 billion in 2011 to \$686.3 in 2013 (a 7.6 percent decrease), Santa Catarina declined at a less rapid rate (i.e., 6.5 percent). Santa Catarina also ranked second in percentage of exports by value (US dollars) for 2011 (25.7 percent of all exports), 2012 (25.6 percent), and 2013 (26.0 percent). Furthermore in 2015 the São Bento do Sul

furniture cluster (Santa Catarina) increased their furniture export by 15.6 percent by value (Abimóvel 2015).

Table 11. Brazilian Exports of Furniture and Mattresses, 2011-2013. (Ranked by 2013 US Dollars)

Exports of Furniture and Mattresses by State (USD\$ 1,000)						
States <sup>1</sup> (Estados)	2011		2012		2013	
	USD\$ (000's)	Percentag e	USD\$ (000's)	Percentag e	USD\$ (000's)	Percentag e
Rio Grande do Sul	203,149	27.4%	205,385	29.0%	210,579	30.7%
<b>Santa Catarina</b>	<b>191,051</b>	<b>25.7%</b>	<b>181,236</b>	<b>25.6%</b>	<b>178,691</b>	<b>26.0%</b>
Paraná	124,804	16.8%	118,231	16.7%	117,709	17.1%
São Paulo	129,139	17.4%	125,111	17.7%	102,901	15.0%
Minas Gerais	66,153	8.9%	55,772	7.9%	54,249	7.9%
Pernambuco	3,360	0.5%	2,760	0.4%	2,334	0.3%
Ceará	1,665	0.2%	1,977	0.3%	1,501	0.2%
Mato Grosso do Sul	873	0.1%	817	0.1%	1,055	0.2%
Pará	1,372	0.2%	1,645	0.2%	948	0.1%
Rio de Janeiro	1,390	0.2%	1,125	0.2%	937	0.1%
<b>SUBTOTAL</b>	<b>722,956</b>	<b>97.4%</b>	<b>694,059</b>	<b>97.9%</b>	<b>670,904</b>	<b>97.7%</b>
Others (Outros)	19,652	2.6%	14,639	2.1%	15,450	2.3%
<b>TOTAL</b>	<b>742,608</b>	<b>100.0%</b>	<b>708,698</b>	<b>100.0%</b>	<b>686,354</b>	<b>100.0%</b>
Fontes/Sources: IEMI/SECEX <sup>1</sup> Nota: Classificação com base nos valores de 2013 (Classifications based on 2013 values)						

Source: IEMI/SECEX

A financial analyst with Móveis Katzer Ltd explained the reason for this increase. “Our focus is always on efficiency and productivity gains. This, I think is the focus to be

competitive in the world market” (Abimóvel 2015 – translated by author). A focus on efficiency is a theme found throughout the furniture companies within Santa Catarina. Many of the companies have gone from using Medium-Density Fiberboard (MDF) to solid pine for furniture production thus increasing the value of the furniture and making their product more desirable in the global market (Abimóvel 2015).

Shifting from exports to imports, Table 12 shows the imports of furniture and mattresses in US dollars. The national trend shows an increase in imports from \$565.2 billion in 2011 to \$744.4 billion in 2013 (a 24 percent increase in imports). Santa Catarina ranks fourth in imports on all three years (2011, 2012, and 2013), with São Paulo being first, Paraná second, and Rio Grande do Sul being ranked third. These increases are likely caused by a cheaper global furniture market and international players, such as the Asian market. However, it is critically important to note that Santa Catarina has a higher ranking in exports than imports, suggesting that it profits by participating in the global market.

Table 12. Brazilian Imports of Furniture and Mattresses Ranked by State, 2011-2013.

Imports of Furniture and Mattresses by State (USD\$ 1,000)						
States <sup>1</sup> (Estados)	2011		2012		2013	
	USD\$ (000's)	Percentag e	USD\$ (000's)	Percentag e	USD\$ (000's)	Percentag e
São Paulo	323,278	43.5%	381,991	53.9%	445,494	64.9%
Paraná	66,059	8.9%	79,493	11.2%	101,951	14.9%
Rio Grande do Sul	32,456	4.4%	41,609	5.9%	51,363	7.5%
Santa Catarina	24,515	3.3%	27,444	3.9%	35,499	5.2%
Goiás	29,947	4.0%	25,981	3.7%	25,457	3.7%
Rio de Janeiro	14,209	1.9%	15,698	2.2%	19,964	2.9%
Minas Gerais	23,628	3.2%	17,958	2.5%	17,585	2.6%
Bahia	2,169	3.0%	7,028	1.0%	12,466	1.8%
Amazonas	8,919	1.2%	8,331	1.2%	7,399	1.1%
Pernambuco	5,555	0.7%	9,980	1.4%	6,300	0.9%
<b>SUBTOTAL</b>	<b>530,735</b>	<b>71.5%</b>	<b>615,513</b>	<b>86.9%</b>	<b>723,478</b>	<b>105.4%</b>
Others (Outros)	34,540	4.7%	37,925	5.4%	20,951	3.1%
<b>TOTAL</b>	<b>565,275</b>	<b>76.1%</b>	<b>653,438</b>	<b>92.2%</b>	<b>744,429</b>	<b>108.5%</b>
Fontes/Sources: IEMI/SECEX						
<sup>1</sup> Nota: Classificação com base nos valores de 2013 (Classifications based on 2013 values)						

Source: IEMI/SECEX

This chapter introduced the Brazilian furniture market in a broad context and moved into a more defined geographic region, the Southern region. Analysis then became more focused on the overall state of State Catarina while tying this state back into the broader context of the Brazilian furniture industry and demonstrating that this state is well connected to global markets. From this point forward, the focus will become more detailed. The rest of the discussion will be grounded in a primary sample dataset

consisting of 72 companies located throughout the Brazilian State of Santa Catarina with a closer examination of the São Bento do Sul furniture cluster and including six other case studies (Figure 4 ). The 72 companies were chosen based on data available through industry reports such as “Brazil Móveis 2013”. From these 72 companies, six case studies were chosen because their product mix characteristics mimicked quite closely the attributes of the 72 sample companies (Figure 5). The next section of this chapter explores in detail the furniture market characteristics of the Santa Catarina furniture sample data to help better understand the production network as it relates to: raw materials, product creation, and distribution.

### *Raw Materials*

First in any production network or value chain comes the raw material sector. Raw materials are the first input in making a furniture product. Table 13 illustrates the materials used in furniture production in Santa Catarina.

Table 13. Materials Used in Furniture Production in Santa Catarina, Brazil 2013.



Source: IEMI 2013

The main source of material used in furniture production in Santa Catarina is pine wood. In other words, 62.5 percent of the companies in the dataset use wood as their main median for furniture production. The main source of wood used in furniture production in Santa Catarina is pine, due to the abundance of pine forest (Rocha et al 2012). Another reason many companies use pine is because the natural environment can replenish itself in 12 to 15 years, which means that if companies follow best practices for harvesting and replanting forest, there will always be an abundance of pine wood for furniture production (Rocha 2012).

It is not unusual for furniture companies to own and operate their own forests and sawmills to ensure that care is given to their raw resource. For example, Temasa Móveis created Temasa Florestal as a subsidiary in 2001 to oversee all of their forest they own to

ensure best planting and harvesting practices are taking place. The use of pine (solid pine wood furniture) matches what is wanted in the global furniture market, especially the United States according to the *International Wooden Furniture Markets: A Review* (Geneva 2005) report. The publication by Abimóvel and Promóvel entitled *Estudos: O Mercado Norte-Americano de Móveis* (Study: The North American Furniture Market) emphasizes multiple times the importance of using material that your market is demanding.

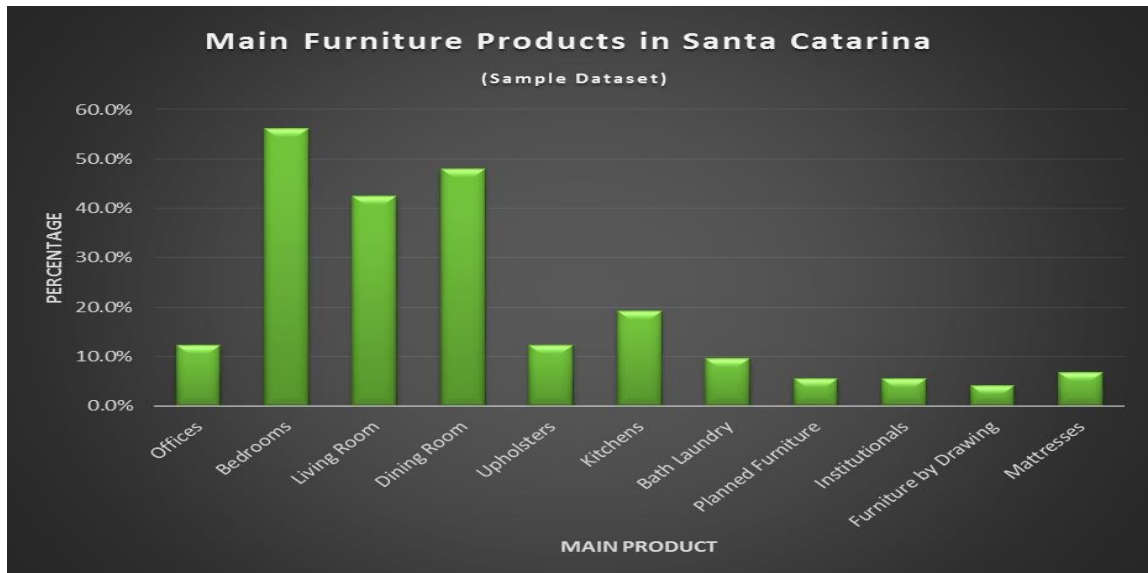
The second most frequently occurring raw material after wood is plates, with 55.6 percent of all companies using plates in their manufacturing process. Plates are a low quality board similar to particle board in the United States. Plates do not meet international wood standards (Brasil Móveis 2013 and Geneva 2005), therefore products constructed from plates are going to stay in the local market. Furniture made of plates tends to be cheaper, lower-end and largely a domestic market product.

### *Furniture Product Creation*

The next step in the furniture production network is the creation of a product. The main three products produced in the Santa Catarina furniture market are bedroom, living room, and dining room related furniture (Table 14). Bedroom furniture is the most popular product with 57 percent of all companies in Santa Catarina offering furniture under this category. Dining room furniture ranked second with 49 percent and living room furniture was ranked third with 43 percent of all furniture companies producing these types of products. These three categories of furniture are all present in local,

regional and global markets. One possible reason for these three categories to be produced in higher demand is because products being produced by plates stay locally and anything exported is made of pine. Pine is the third most favorable wood for furniture used to construct bedroom, living room and dining room furniture (Geneva 2005). Therefore, the two main raw materials tend to be utilized in producing comparable products, but based on different levels of quality, price points, and destination markets (i.e., local, regional or overseas). However, only 36 percent of these companies export their products (Table 15).

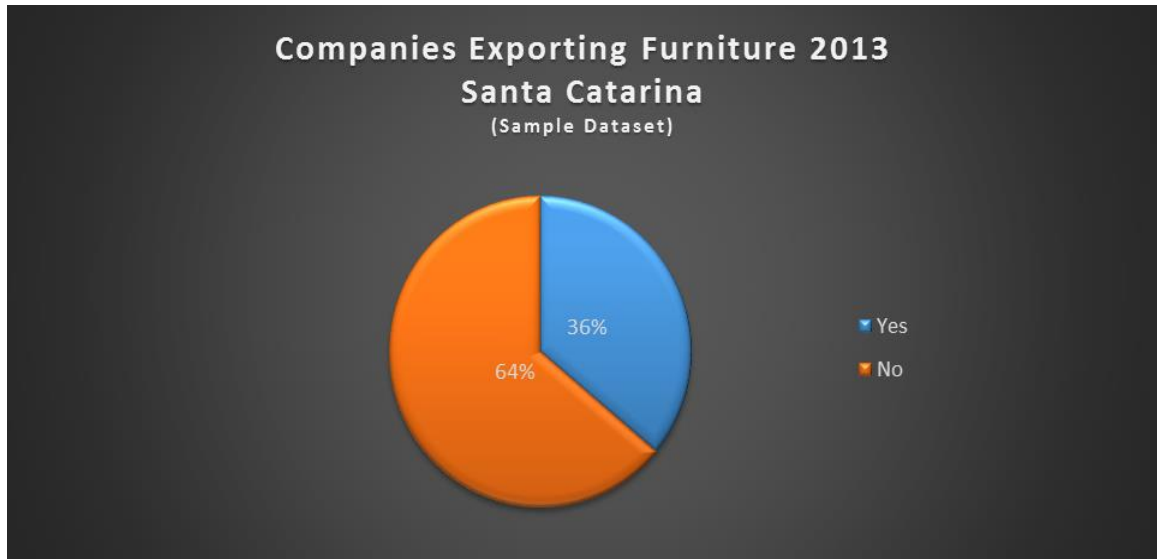
Table 14. Main Furniture Products in Santa Catarina, Brazil 2013.



Source: IEMI 2013



Table 15. Companies Exporting Furniture 2013, Santa Catarina, Brazil.



Source: IEMI 2013

### *Distribution and IT*

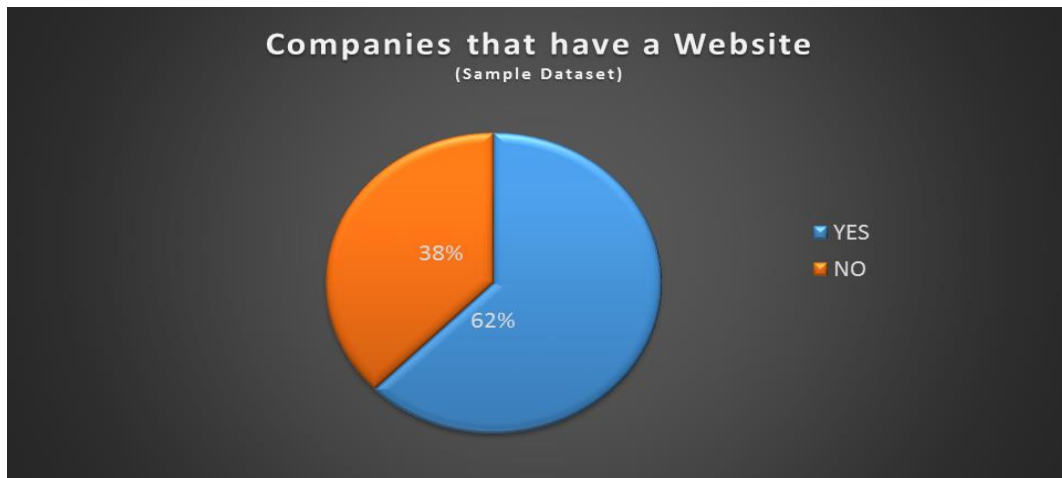
Next, focus falls on the distribution of these finished products. Distribution is a key link in any production network and/or value chain. The finished product does not create any value until it is sold. This is why it is important for furniture companies to think, plan and execute plans to distribute their products. As Angelo Luiz Duvoisin, the Commercial Superintendent of Artefama Móveis said, “Beyond everything else, everything must be planned, outlining objects and goals of the company and not just what we are going to do tomorrow. We need to be planning for the medium and long-term, so that tomorrow was planned a long time ago” (Personal communication Duvoisin 2014). In other words everything takes careful planning from the beginning to the distribution of a product.

The distribution of products changed over the years due to technological advances such as shipping containers, airplanes, and trucks. These technologies shrunk the world, but other technologies such as the World Wide Web also helped to shrink the world by through access to websites and social media. Out of the 72 Santa Catarina companies included in this dataset, 62 percent of them have a company website (Table 16). Websites can be used for two main purposes: the discovery and selling of products. Web presence allows the companies opportunities to be discovered by buyers and sellers and offers a way to potentially connect with global players through their websites. Also, companies with websites create an alternate avenue for selling their products via e-commerce. Websites alone are no longer the best method for reaching potential clients and partners.

The rise of social media outlets such as FaceBook (established in 2004), YouTube (established 2005), Twitter (established 2006), Instagram (established 2010), and Pinterest (established 2010) all provide platforms for individuals, governments and the private sector as another outlet for communication and advertisement. Of the 72 companies examined in Santa Catarina, 43 percent of companies had a presence on Facebook (Table 17). In a few cases companies did not have a website, but did have a Facebook account. Some of the reasons for this could include no cost for a Facebook page, whereas, an official website costs money for design, maintenance, and domain names. An example of a company having a Facebook page, but not a website is Ergo Mobili Industria e Comercio de Móveis Ltda. This company is a medium sized company with one hundred employees that was created in 1988 (IEMI 2013). Ergo Mobili Industria e Comercio de Móveis Ltda does not currently export their product, so their

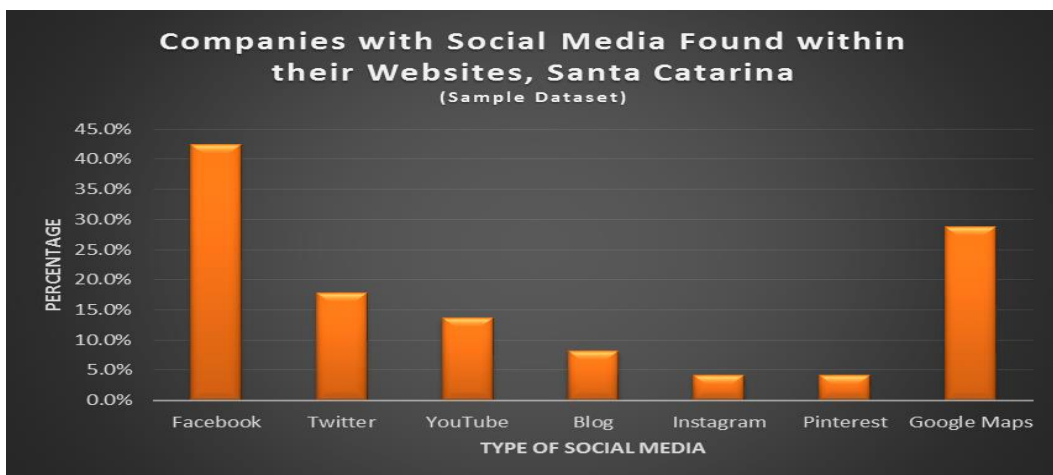
market base is located within Santa Catarina. Figure 18 is a screen shot of their Facebook page which illustrates the type of furniture they produce including office furniture and chairs suitable for meeting spaces.

Table 16. Companies That Have a Website, 2015



Source: Author 2015

Table 17. Companies with Social Media Found within their Websites, Santa Catarina, Brazil 2015.



Source: Author 2015



Figure 18. Screen Shot of Ergo Mobili, 2016.  
 Source: <https://www.facebook.com/people/Ergo-Mobili/100004357757226>

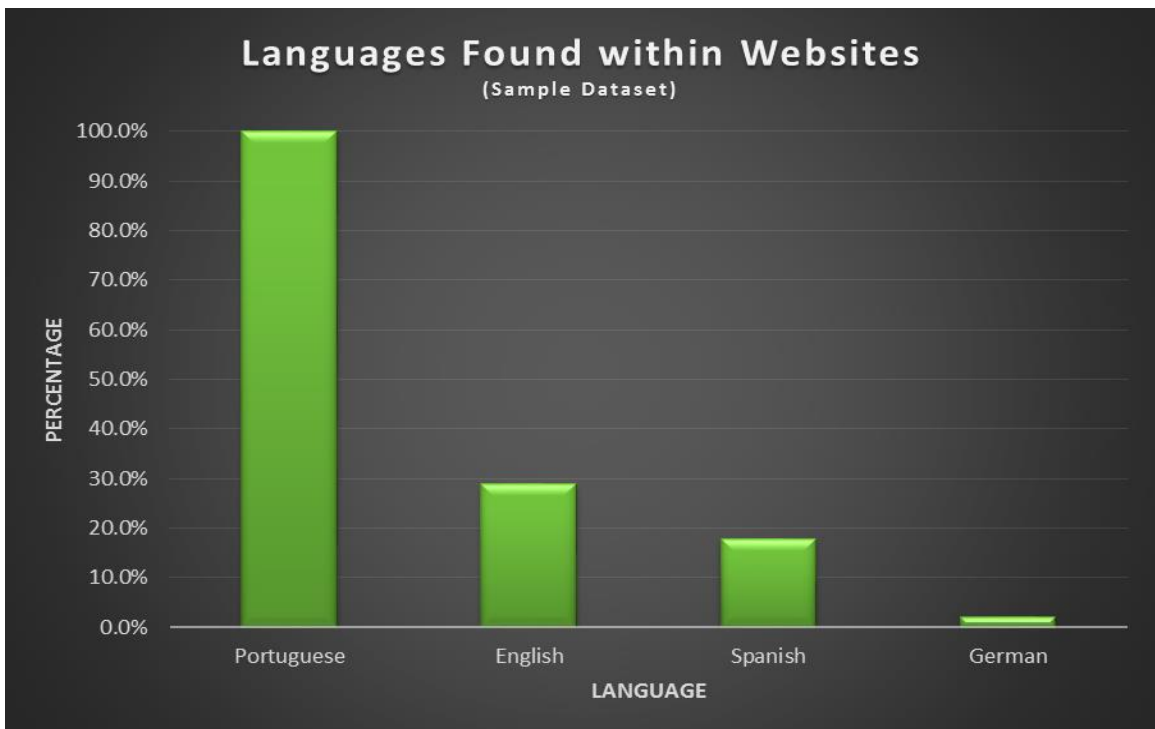
From the Facebook page, this company as of February 17, 2016 has 1,020 people who liked this page and two people talking about the page. Therefore, the return on investment is probably in the positive. Probably one individual created the Facebook page, which helps provide updates without the ongoing maintenance costs that most traditional websites charge.

It is also interesting to note that Twitter and YouTube are being used by companies as well. The ability to create free promotional videos via YouTube is used by 14 percent of the 72 furniture companies. The use of social media allows for these companies to expand their global reach, thus creating relationships with potential clients and partners. The use of social media falls into the context of the Global Production Network, value (innovation) and embeddedness (entrepreneurship) by allowing value to be placed on a product or company based solely on number of ‘friends’ or ‘likes,’ adding

value to their product and reputation. Social media also allows for companies to expand their network embeddeness and social arrangements among other companies and buyers.

Another important aspect of distribution is the ability to communicate and not just by web based technologies or social media, but by the written and spoken language. One hundred percent of the websites were in Brazilian Portuguese, with English (29 percent) being the next preferred language (Table 18).

Table 18. Languages Found within Websites Santa Catarina, Brazil 2015.



Source: Author 2015

Not surprisingly Spanish (18 percent) was the third language to be used in websites since the rest of South America speaks Spanish. German is the fourth language used in websites; this could be because German immigrants settled Santa Catarina, and

many of the early exports from Indústrias Zipperer and Artefama went to Germany (Rocha 2008). In terms of proximity, the United States and Canada are both English speaking countries. English is the business language of the world. If a company wants to be involved with the global market they need to be able to communicate with potential clients to create business deals in multiple languages. This dissertation now turns to a more detailed analysis of the most important furniture cluster located in the northeastern part of the state: the São Bento do Sul Furniture Cluster

### **São Bento do Sul Furniture Cluster**

São Bento do Sul is located in the northeastern part of Santa Catarina and abuts the state of Paraná to its north. According to the Brazilian Instituto Brasileiro de Geografia e Estatística (IBGE), in 2010 São Bento do Sul had a population of 74,801 people, with a physical area of 501.6 km<sup>2</sup> and a population density of 149.11 inhabitants per km<sup>2</sup> (Figure 4 ). Original immigrants into São Bento do Sul came from European countries such as Czechoslovakia, Poland, Austria, and Germany. The culture of the area is largely Germanic and can be seen through the physical landscape such as houses, shops, and cultural events including the Festival do Folclore (Folklore Festival) seen in Figure 19. São Bento do Sul is also famous for their involvement in the furniture industry as one of the most important furniture clusters within Brazil. The majority of companies found within the cluster are family owned, small and medium-sized furniture companies (Rocha et al. 2008; Rocha et al. 2007).



Figure 19. Dancing at the Festival do Folclore São Bento do Sul, Santa Catarina 2015.  
Source: (<http://www.saobentodosul.sc.gov.br/>)

Denk (2002) and Rocha et al. (2008) divided the historical development of the São Bento do Sul Furniture Cluster into six stages:

- Stage 1: 1800 – 1920s – First settlers from Europe, exploiting local natural resources, such as wood;
- Stage 2: 1920s – 1950s – Emergence of small factories, most of them at the craftsman stage;
- Stage 3: 1950s – 1970s – Expansion and consolidation of the cluster; production and exports of handicrafts; production of colonial-style furniture;
- Stage 4: 1980s – Economic crisis, forcing companies to modernize and restructure production; introduction of pine wood furniture; search for new export markets;
- Stage 5: 1990s – Expansion of export activities as a result of new opportunities due to wars in Eastern Europe and the establishment of support institutions to the furniture industry;

Stage 6: 2000s – Continued international expansion, taking advantage of the devaluation of the Brazilian currency; rise of China as a relevant competitor (Rocha et al. 2008 p. 27).

From these six stages, the evolution of this furniture cluster shows how everything started with individuals using local resources to produce a commodity. Since these individuals were able to make a profit from their items, they were then able to invest in the creation of small factories. Even though factories were developed, many were still at a ‘craftsman stage’, producing mostly handmade labor-intensive furniture. However, during the 1980s economic crisis many of these companies were forced into modernizing and restructuring their factories and processes to be competitive and cut cost. The economic crisis forced many of these companies to become more innovative in the way they processed raw material and produced a final product. In the 2000s, growth continued and Brazil saw the rise of China as a competitor in the furniture industry. This competition forced companies to innovate so that their products could be produced at a lower cost while maintaining a global standard of furniture.

To understand the São Bento do Sul furniture cluster, Denk (2006) and Lanzer et al (1997) compiled a list of strengths and weakness demonstrated in the cluster (Table 19). Within the list of strengths many of the items relate to the availability or proximity of suppliers, raw materials, support and educational institutions. These items are important for future groups and businesses looking to start-up and they need to be in close proximity to these resources. The weaknesses listed in Table 19 are problems not just particular to São Bento do Sul Furniture Cluster, but to other furniture companies as



well. For example, the preference for vertical integration and low levels of specialization is also found in other furniture companies that exist outside of this cluster.

Table 19. Strengths and Weaknesses of São Bento do Sul Cluster, Santa Catarina, Brazil.

<b>São Bento do Sul Cluster</b>	
<b>Strengthens</b>	<b>Weaknesses</b>
Local availability of raw materials and parts, or easy access to suppliers	Preference for vertical integration, with firms producing their own wood parts, little outsourcing, and low level of specialization within the cluster
Local availability of experienced and skilled labor	Lack of skills and competence in design, with strong dependence on foreign design, despite growing interest and concern with developing capabilities in this area
Quality products, recognized as such in international markets	Limited market knowledge and marketing know-how, with a passive and dependent presence in international markets
Proximity to suppliers of other inputs and components necessary to the production of furniture	Dependence on imported equipment
Local availability of representatives of machinery and equipment manufacturers, as well as producers of certain types of tools and equipment	Adoption of low-cost strategic positioning as compared to a differentiation approach
Local availability of specialized services needed for distribution and exporting	Low level of association among local firms
Presence of support institutions	Lack of shared long-term vision for the cluster
Presence of technical and educational institutions, including SENAI and FETEP, the Foundation for Education, Technology and Research, and UDESC – the State University for Santa Catarina	
Recent modernization of factories, with last generation equipment	
Frequent participation in trade fairs and exhibitions	

Source: Rocha et al. 2008 p. 27-28.

As an example of vertical integration, three of this dissertation's furniture company case studies (Temasa, Renar and Rotta) owned their own forest, sawmills, and production sites. It was explained during the visits to Temasa, Renar and Rotta that the

reason for owning all the commodity was to ensure quality control. Numerous strengths identified are still in place today including proximity to furniture suppliers, labor pools, knowledge spill-over, and technical and educational institutions. A key factor other than the presence of natural resources and other furniture companies within the São Bento do Sul Cluster, is the presence of educational facilities to train workers in relevant skills. The State University of Santa Catarina (UDESC) started operations in São Bento do Sul in 1994 and in 2005 UDESC opened its own campus in São Bento do Sul with eight laboratories and fifteen classrooms.

In state supported schools tuition is free for all those that qualify, thus providing an opportunity for citizens and furniture employees to get additional education in engineering and business classes, to name just a few degrees. This was a collaboration between city governments, UDESC, and local commercial and industrial associations. Stakeholders saw the importance of education - and more specifically, furniture education. UDESC offered a bachelor's degree in Mechanic Technology Applied to Furniture Production (Rocha et al. 2008). However, according to Gustavo Kogure – the Administrator in the Office of International and Institutional Affairs at UDESC (2014), the Furniture Tech Program is no longer available. Kogure (2014) explains: “USDEC is a public university and 100% free of charge, maintained by Santa Catarina Government. UDESC was ranked as the 4<sup>th</sup> best Brazilian State University and 18<sup>th</sup> (general ranking) among 192 evaluated by the Brazilian Ministry of Education” (personal communication Gustavo Kogure 2014). Even though USDEC lost its Furniture Tech

Program, other programs and degrees directly and indirectly effect furniture companies, such as engineering and business degrees.

Another weakness identified by Rocha is the problem of dependence on imported equipment which affects the majority of furniture companies in their use of machines from Germany and Italy. This weakness is not limited to the São Bento do Sul furniture clusters. As one furniture worker from Renar Móveis stated, companies use the best machinery and the majority of the machines come from Germany and Italy, since according to one source they just produce the best wood working equipment (personal communication 2013). Table 20 illustrates this point with Italy and Germany making up 69.5 percent (\$106.4 billion) of dollars spent on machinery in 2011. Italy and Germany have always been the top machinery imports for Brazilian furniture companies from 2009 through 2011. Although this can be seen as a weakness, it also demonstrates how Brazil is participating in the global furniture market. In order to stay competitive on a global level, companies must use the best technology available to them. Adopting and implementing technology correctly can be a way to produce furniture products at a higher rate with lower production cost - which can equal a higher profit margin.

Rocha et al. (2008) outlines several recent actions in São Bento do Sul that were executed with the overall goal of elevating the overall quality of the furniture cluster:

- Better management training; adoption of more advanced management practices; move from family managers to professional managers;
- Internal actions to develop their own design;
- Investments in technological actualization;

- More emphasis on quality management and quality control (p. 28).

Table 20. Brazilian Machinery Imports Origins 2012.

<b>Import Origins (in US\$ 1,000)</b>						
<i>Countries</i>	<b>2009</b>		<b>2010</b>		<b>2011</b>	
	US\$ 000's	Participation (%)	US\$ 000's	Participation (%)	US\$ 000's	Participation (%)
<i>Italy</i>	36,408	40.0	36,962	32.9	62,626	40.9
<i>Germany</i>	24,708	27.2	40,937	36.4	43,873	28.6
<i>China</i>	4,743	5.2	12,585	11.2	18,816	12.3
<i>Spain</i>	1,812	2.0	5,404	4.8	4,488	2.9
<i>Taiwan</i>	1,350	1.5	2,374	2.1	3,932	2.6
<i>United States</i>	2,824	3.1	3,516	3.1	3,527	2.3
<i>Switzerland</i>	6,870	7.6	3,458	3.1	3,327	2.2
<i>Austria</i>	2,490	2.7	2,560	2.3	2,832	1.8
<i>Denmark</i>	139	0.2	462	0.4	2,702	1.8
<i>Canada</i>	1,083	1.2	126	0.1	1,759	1.1
<b>Subtotal</b>	<b>82,428</b>	<b>90.6 %</b>	<b>108,384</b>	<b>96.4 %</b>	<b>147,881</b>	<b>96.5 %</b>
<i>Others</i>	8,523	9.4	4,010	3.6	5,351	3.5
<b>TOTAL</b>	<b>90,951</b>	<b>100%</b>	<b>112,394</b>	<b>100%</b>	<b>153,232</b>	<b>100%</b>

Source: Brasil Móveis 2012 p. 55.

Although Rocha recommended these changes for the São Bento do Sul furniture cluster, these actions can be applied to the majority of furniture companies that want to stay competitive within the global economy. As previously mentioned, the majority of Brazilian furniture companies are SMEs with the greater part family owned. Many struggled with management and innovation issues. In some cases, family owned companies are encouraging their offspring to get a business degree or some other professional degree to help them run the company as is the case of Rotta Móveis, Renar Móveis, and Móveis Rudnick (Site-visit Rotta 2013, Site-visit Renar 2013, and Interview

Rudnick 2014). The case study section of this dissertation provides a more detailed examination of these companies

The São Bento do Sul furniture cluster also is home to Móvel Brasil: Feira de móveis e decorações, a local furniture market ([www.movelbrasil.com.br](http://www.movelbrasil.com.br)) with 31,496 square feet of showroom space. According to Móvel Brasil's official website, the market attracts on average of 115 to 150 vendors each year that the market is held. This is an opportunity for companies to network with one another. During this conference, seminars on design and quality standards are presented to market participants. Participation in such events forges relationships among furniture companies which will only enhance the furniture industry not only in São Bento do Sul, but throughout all of Santa Catarina. The next portion of this chapter examines three furniture companies located in the São Bento do Sul furniture cluster: Indústrias Zipperer, Indústrias Artfama, and Móveis Rudnick. These companies played an important role in the creation of the São Bento do Sul furniture cluster and today are playing an important role in advancing education, technology, and furniture exports and will be examined in the following sections.

### **Indústrias Zipperer**

Indústrias Zipperer was key to establishing the São Bento do Sul furniture cluster as one of the first furniture companies created in the region of Santa Catarina (Figure 4 ). Figure 20 is a screen shot of Zipperer's website where they proudly state that they were established in 1923 and have 220 employees, with a monthly production output of 12,000 pieces of furniture per month. Prominently displayed on the company website are the

major markets overseas that the company serves including: the United States, England and Germany. This started when Carlos Zipperer Sobrinho obtained permission from his boss to start creating small pieces of furniture and windows on the side. Sobrinho went on to establish Indústrias Zipperer in 1923, producing handicrafts created from the scrap material of the timber industry (Rocha et al. 2008). Sobrinho started selling his products locally and then to Rio de Janeiro (the capital of Brazil during this time), São Paulo and Aparcedia do Norte. Sobrinho wanted to grow the business but knew his knowledge and technical abilities were limited. Consequently, he “imported books from Germany, developed his own equipment and trained employees. He was a proactive businessman; he traveled frequently making contacts to sell his products” (Rocha et al. 2008, 29).



Figure 20. Screen Shot of Zipperer’s Website.  
Source: <http://zipperer.com.br/empresa/index.php>

Sobrinho knew from early on the importance of education and knowledge as it applies not only to the furniture industry, but to the machines used in furniture creation. He proactively traveled to meet with people face-to-face instead of sending letters or relying on word of mouth alone. Sobrinho knew the importance of face-to-face meetings in order to establish trust which would lead to business deals. He possessed a real talent in negotiating and observing furniture trends and technologies. He worked, studied and read as many foreign books and magazines as possible so he could learn and better understand other countries. Travel to other countries, such as Canada to visit furniture factories was important to him to learn about the new technologies and furniture production methods being used (Rocha et al. 2008). All of this curiosity and understanding helped when Indústrias Zipperer was the first in the São Bento do Sul cluster to export their products to the United States, Germany and England in 1959. It was thereby considered a flagship or leading company within this furniture cluster (Rocha et al. 2007).

Sobrinho was not only interested in furniture but also politics and became the elected mayor of the city of São Bento do Sul in 1956 to 1961 (Fendrich 2008) which helped to foster policies that were sympathetic to the furniture industry. Today Indústrias Zipperer is still active in the global furniture market, exporting 90% of their furniture products to the United States of America, England, France, Canada and Germany. They currently have 220 employees working in their company although they are now facing succession challenges in passing the company from second to third generation family members. One family member sold all of their interest in the company while others are



continuing to work and manage the company with the help of a hired consultant.

Indústrias Zipperer helped pave the way for other companies to be created and enter into the global furniture market due to the fact that Sobrinho was a “genuine entrepreneur, he created new opportunities, faced initial problems, developed solutions, accepted risks, and succeeded” (Rocha et al. 2008 p.54), and he laid the groundwork for other furniture companies such as Indústrias Artefama to be successful in the global furniture market.

### **Indústrias Artefama**

Artefama was founded in 1945 by Austrian immigrants who focused on building products out of pine wood pieces that were labeled scraps (Figure 4 and Figure 21).

Artefama focused its early efforts on local markets such as Rio de Janeiro, however, the company made a risky and strategic decision to expand their market. “Managers were aware that exporting was more risky than selling to the domestic market, but they believed that the long-term possibilities were greater. The company imported machinery to improve its production process and started using electronic control mechanisms to monitor the drying process” (Rocha et al. 2012, p. 106).

When the company was created in 1945, it was owned by six friends who started the business together. In 1973 the company converted to a Shared Company with three directors who make up the executive board and own 99 percent of the company’s shares (Personal Communication Duvoisin 2014). They have between 201 and 500 employees. Their headquarters and permanent showroom are now located in Miami, Florida with the production factory still located in the municipality of São Bento do Sul (Indústrias

Artefama website 2016). By having a showroom in Miami, Florida, Artefama is extending their presence into a different market, the United States, while at the same time preserving the cultural and historical origins of the company by keeping the furniture production in São Bento do Sul, Santa Catarina. This exemplifies how Brazilian companies can maintain a strong local value chain grounded in the local economy while at the same time being internationally connected because of its presence within the global production network (i.e. being physically located within one of their major export markets, the United States). As Andy Counts, the Chief Executive Officer of the American Home Furnishings Alliance, said about culture being an important factor in the global furniture industry: “ Most critical thing, relationship business, boots on the ground, you have to have a local presence...” (Personal Communication Counts 2014).



Figure 21. Artefama Opening Day February 10, 1945.  
Source: <http://www.artefama.com.br>

In 1967 Indústrias Artefama realized their goal of exporting when they sent furniture to Texas (Artefama Website 2016). However, the company had to continuously improve and adapt their products and production methods to the changing markets. They made investments in machinery from Italy, wood drying equipment, and education. Artefama partnered with Serviço Nacional de Aprendizagem Industrial (SENAI) which is the National Service for Industrial Training to provide in-house training for its employees. As Angelo Luiz Duvoisin, the Supervisor of Commercial Products said: we are, “always innovating. We have an engineering structure that allows us to develop around four prototypes per day! In addition, we are always traveling, contacting and nurturing our relationships to all our customers and clients as much as we can” (personal communication, Duvoisin 2014). Through these efforts Indústrias Artefama became a leading firm in the São Bento do Sul furniture cluster (Figure 4 ). Figure 22 illustrates the key role the company’s website plays in advertising its products to a broader global market by showing what products they specialize in producing (i.e. dining room and living room furniture). Also when visiting their page, one is first directed to the option of viewing the page in either Spanish or English; language options tie back into Artefama’s participation within the international furniture market. They also boast that they are a major exporter of Brazilian furniture.

When Duvoisin was asked which international market is most important to Indústrias Artefama, his reply was “The USA” (personal communication, Duvoisin 2014). This can be seen in Table 21, showing the percent of international furniture sales and the countries who purchased the furniture. Mr. Duvoisin did not break down the

percent by product or companies that purchased the furniture, showing that Artefama participates within the global furniture market with their two main customers the United States and France.

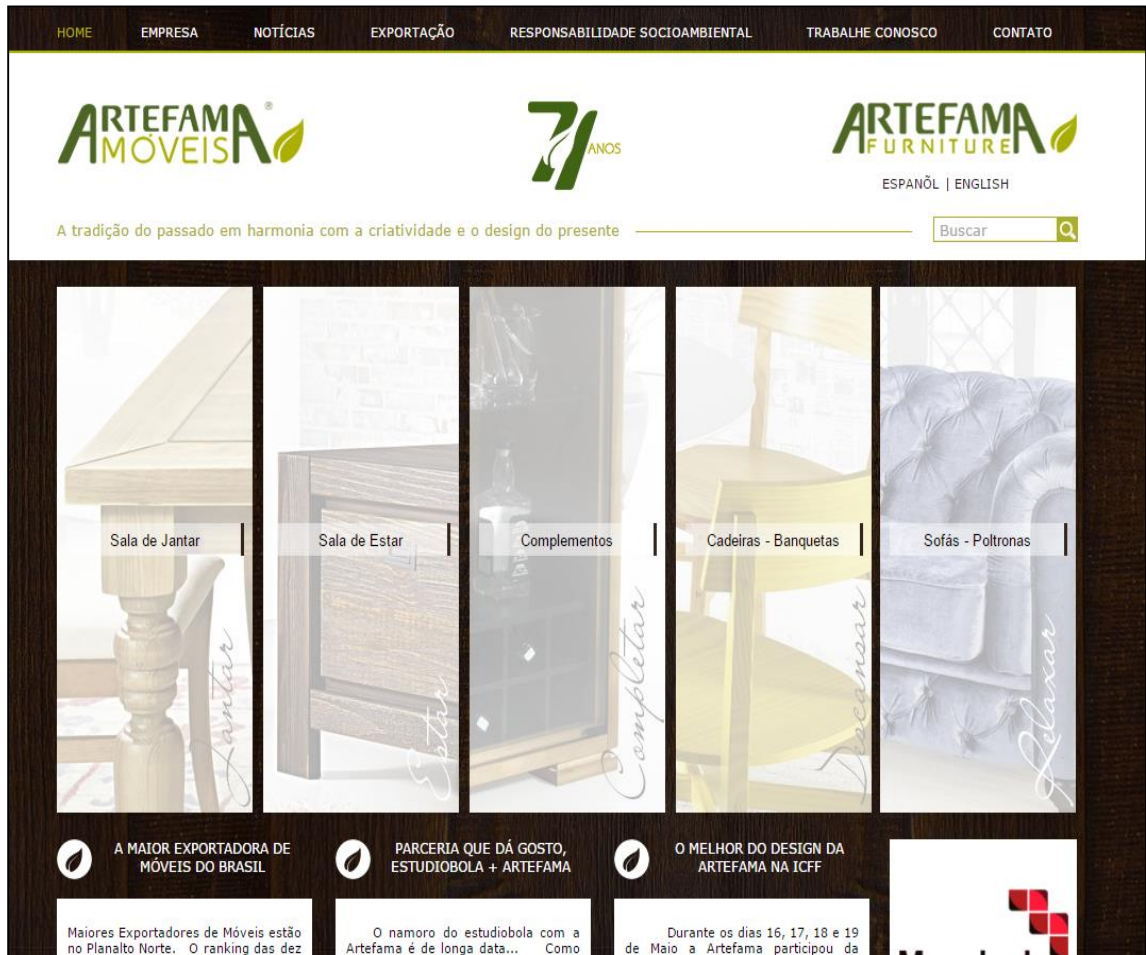


Figure 22. Screen Shot of Artefama Website.  
Source: <http://www.artefama.com.br/empresa>

Table 21. Percent of Indústrias Artefama International Furniture Sales, 2000-2012

<b>2000 through 2004</b>	<b>2005 through 2009</b>	<b>2010 through 2012</b>
50% USA	70% France	90% USA
40% France	20% USA	10% Others
10% Others	10% Others	0% France

Source: Personal Communication Duvoisin 2014

From 2000 until 2009, France and the US were the main buyers of Indústrias Artefama furniture products. Then, in 2010, the US purchased 90 percent of their products. France purchased nothing during this time period. The increase in sales to the US is so important that Indústrias Artefama invested in a showroom and corporate offices in Miami, Florida. During the interviews when Mr. Duvoisin was asked if he knew any other companies that would be willing to be interviewed, he quickly responded that another important furniture company in the São Bento do Sul furniture cluster is Rudnick Móveis. This is the next and final company examined from the São Bento do Sul furniture cluster.

### **Rudnick Móveis**

Rudnick began in 1938 when Mr. Leopoldo Edmundo Rudnick started a joinery business in a shed by the side of a road in Estrada Dona Francisca located in the interior of São Bento do Sul (Rudnick 2015). In 1946 Mr. Rudnick moved his operation to the Oxford area within São Bento do Sul. In 1959, a new phase for Mr. Rudnick's business began when he included his sons in the business, leading to development of new ideas. By 1970, Rudnick Móveis began importing machinery to compete with the high standards of

quality that customers and the international market demanded. Additionally, the company created an advanced trade policy to guide its furniture exporting and product design while leveraging technology. This internal policy helped Rudnick to become one of the most influential furniture companies within the São Bento do Sul furniture cluster regarding their product creation and distribution (Rudnick 2015).

Rudnick Móveis does not fit the model of a small to medium-sized enterprise because they employ around 900 employees (Figure 4 and Figure 23). Rudnick Móveis is located in the city of São Bento do Sul, the largest furniture cluster in the state of Santa Catarina. The company website appears very modern and clean. The site is easy to use and follow. Key items found on the website include where to find a store. Their blog with a posting entitled “Laze rem dias chuvosos” (leisure on rainy days) helps the potential customer imagine the comfort of enjoying great furniture, atmosphere and family nearby during inclement weather. This website is only in Portuguese, which is interesting because approximately ten percent of their sales are international.

Today, Rudnick exports about 10% of their products worldwide (Palmerira 2014) including furniture exports of bedroom, living room and dining room pieces to the United States of America, Canada, Paraguay, Uruguay, Bolivia, Chile, French Guiana, Panama, Angola, Liberia, Mozambique and Sweden (Rudnick 2015). Rudnick not only exports its own products, it also works with other furniture companies. One such company is Stanley Furniture, located in the United States, in the state of North Carolina. Rudnick provides Stanley with manufactured products (i.e. bedrooms, dining rooms, etc.) to be sold under the Stanley brand (Rocha et al 2008).

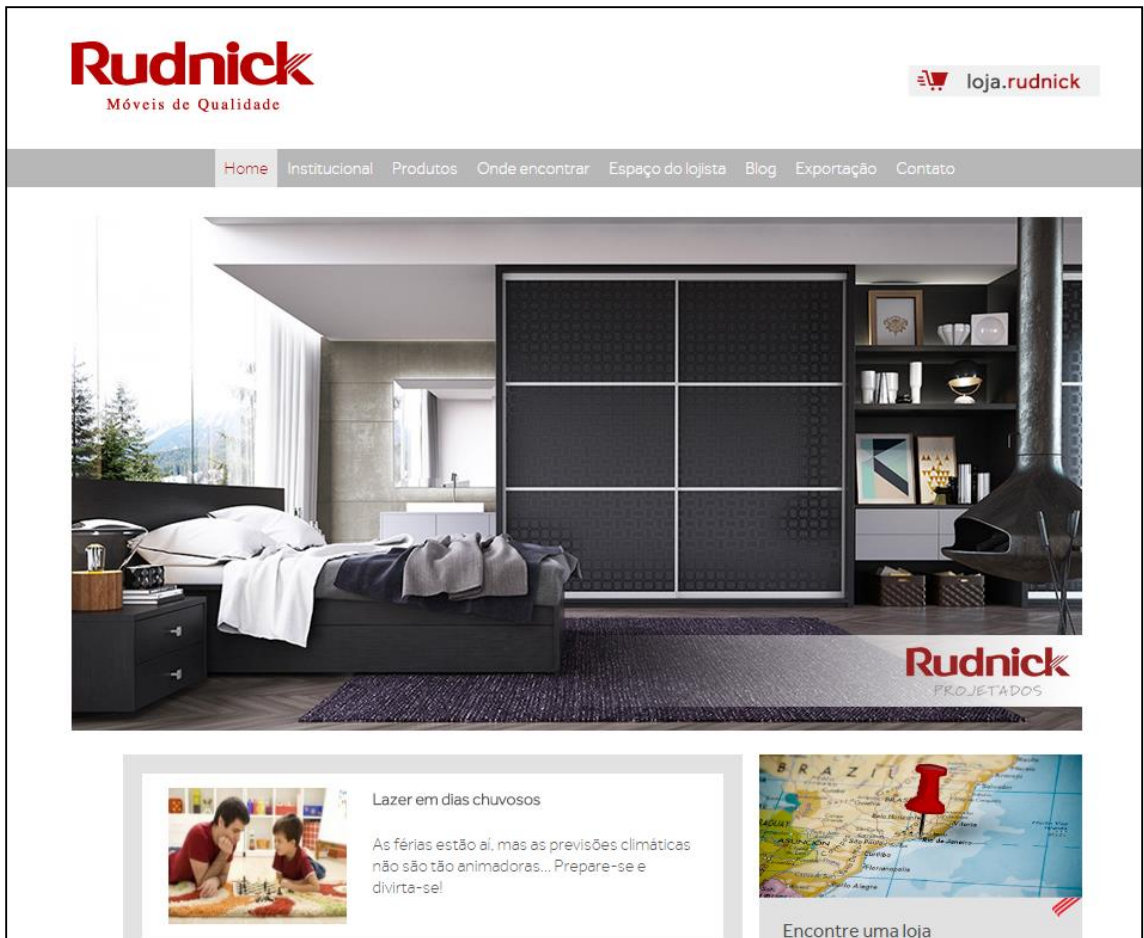


Figure 23. Rudnick Móveis Screen Shot of Company Website 2016.  
 Source: <http://www.rudnick.com.br/site/>.

### Overall Implications: São Bento do Sul Furniture Cluster

São Bento do Sul’s furniture cluster is well established within the local value chain and the international furniture chain. Because of companies such as Indústrias Zipperer, Indústrias Artefama, and Rudnick Móveis, this furniture cluster enjoys acceptance in global markets and especially in the Global North. These companies followed similar patterns as they evolved from local to regional to international sales. Indústrias Zipperer created a pattern for other companies to follow based on its

experience. All of these companies displayed similar forms of innovation. For example, machinery produced in Italy and Germany is used by all three firms. Another innovation that took place for all three companies involved using solid pine wood to make furniture. This required a new way of processing wood including using equipment to dry the wood. All of these companies needed to implement cost reductions to stay competitive, and most of these occurred through production processes. Artefama's CEO explained, "The only thing we don't use here at this point is the noise of the equipment" (Rocha et al. 2008 p. 35). Another important characteristic of all three companies is their use of web-based technologies such as websites, Facebook, and LinkedIn. These sites contained options for multiple languages and frequently gave the history and quick facts about the company. The sites also provided a means for product distribution and a place where individuals can see the latest products.

### **Newly Emerging Santa Catarina Furniture Clusters and the Key Role of the Brazilian Furniture Group**

Although the São Bento do Sul furniture cluster is clearly a case of path dependency and evolutionary economic geography in the sense that key pioneers at an early stage pioneered several key innovations grounded in a global perspective, other fledgling furniture clusters and innovative furniture firms emerged in recent years. Three of these furniture companies were visited on-site to better understand how they were developing their global production network and to determine if they followed a similar path dependency to those in the already established São Bento do Sul furniture cluster.



These three companies were chosen because they mimic the sample dataset in terms of various attribute characteristics such as product type, product material, web presence, and language (Figure 5). They include Temasa Móveis and Rotta Móveis both located in Caçador in north central Santa Catarina and Renar Móveis located in Fraiburgo just to the south of Temasa and Rotta (Figure 4 ). To provide further insight into the Global North furniture distribution challenges facing these types of companies, multiple on-site visits were paid to the Brazilian Furniture Group (BFG) located in High Point, NC – the location of one of the largest furniture markets in the world.

### **Temasa Móveis**

Temasa began in 1990 as a company that sold doors and windows. Within three years the company formally entered into the furniture market through business deals with brands such as Ikea and Best Buy. Companies like Ikea and Best Buy use third party companies – like Temasa - for product creation because their market strategy is for a mass market with a low cost. Temasa caters to this specific part of the value chain, raw materials and production. Temasa's host webpage (Figure 24) provides a clear illustration of the scope of furniture products provided by Temasa and visually illustrates much of the global production network in one host image. Starting from the far left side of the website is a picture of a tree trunk representing the raw material. In the middle is a picture of a finished piece of furniture, representing product creation. On the far right is a picture of a semi-tractor-trailer rig backed up to a building representing the distribution of the product. The website also coincides with their Mission: Promoting the magic of turning

wood into comfort, beauty and convenience (“Promover a magia de transformar a madeira em conforto e comodidade.”). The images on the website promote comfort, beauty and convenience through the design, quality and distribution of their product.

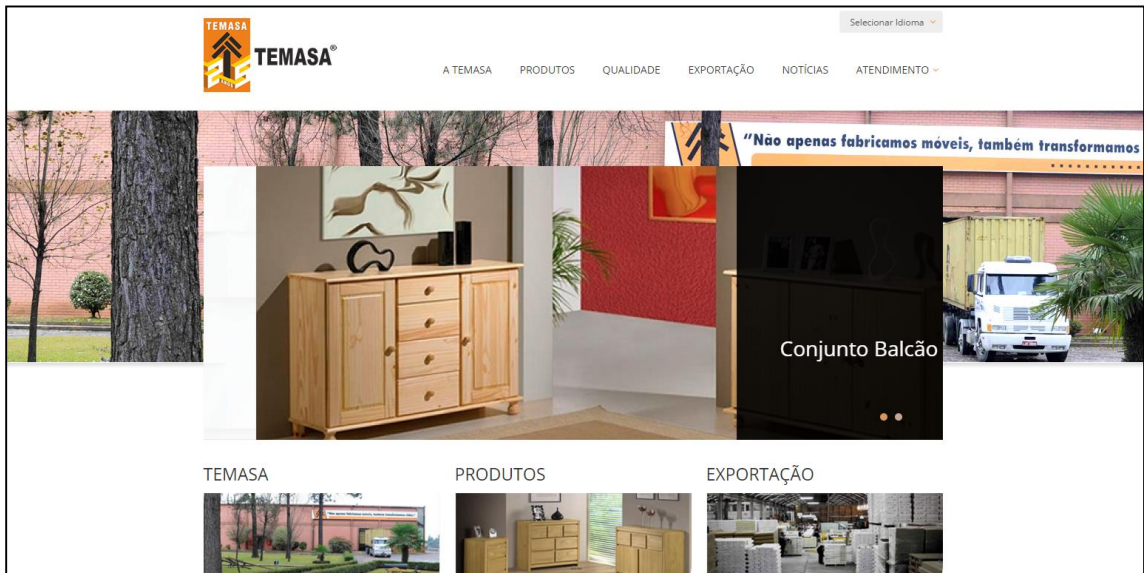


Figure 24. Temasa Móveis Host Website Page, 2016.  
Source: <http://www.temasa.com.br/home>

Temasa is a major furniture exporter in Brazil, exporting 100 percent of their products to 14 countries within North and South America, Europe, and Asia (Temasa Company 2015). Since Temasa exports 100 percent of their products, they make everything of “high quality massive pine wood aimed specifically to ‘Do-It-Yourself’ markets...SMETA, Walmart, Morrions, and Iway (The Ikea way of purchasing home furnishing products)” (Temasa Company 2015). Because Temasa’s customers are international companies, business operations operate within a vertical business model, allowing Temasa to control all aspects of their furniture production. In 2001, Temasa

created the Temasa Florestal division. Temasa Florestal is “responsible for all activities of acquisition and management of ready-to-use forest” (Temasa 2015). Recently, Temasa added another business division. Copas Verdes Agropecuária is “responsible for forest operations, taking care of all processes regarding planting, handling and cutting of the raw material used at Temasa” (Temasa 2015). These three groups allow Temasa to own 100 percent of their furniture production chain. Temasa’s market reaches into North America and Europe. The reason for this distribution could be due to Temasa’s set-up as a company producing products for other companies to sell in their stores and markets. Since Temasa is a 100 percent export firm, they need to continue to build and foster the relationships that already exist. During a site visit in 2013 to the factory in Caçador, Santa Catarina, it was apparent that the company was very serious about productivity, safety, and training. Based on the author’s field notes, several observations can be made:

Tania Bleichvel, Temasa’s Commercial Export Manager was giving the tour along with her assistant. All of the promotional about Temasa was in both English and Portuguese.

Temasa’s campus was very nice and organized. One could tell the campus received many visitors because of how smoothly and organized the tour was from beginning to end. The company has an on-site doctor’s office, cafeteria, and training rooms. All employees can eat all three meals for free, have doctor check-ups and are trained at least once a month.

The production area of the factory was very organized with catwalks for supervisors and visitors to walk through. Digital signs hung in each of the production areas with their daily goals (Figure 25). When a goal was reached a loud noise went off throughout the production area letting all know a section had met their goal. The production area had all the signs of a lean manufacturing design. The day of the visit the workers were working on an order for Ikea (Sloop Field Notes 2013).

Clearly seen through this site visit was Temasa's layout to host visitors and tours at any given moment. Promotional information existed in both English and Portuguese, suggesting the company works with numerous other companies outside of Brazil; having information in another language was critical. The use of lean technologies was apparent on the production floor with the different centers for furniture creation and assembly, goals, and places outlined to walk. In other words, Temasa invested in process and product innovation within their company so they can stay competitive on a global level. Temasa has ties to the local economy and value chain through their forest and forest management companies. Most employees are from the City of Caçador and have pride in working for Temasa, manifested by little employee turnover.



Figure 25. Temasa's Furniture Production Goal Sign.  
Source: Author 2001.

## **Rotta Móveis**

Rotta Móveis has a long history in Caçador since 1937. Some of the historical evolution of the company is articulated through the company's promotional material.

The activities of the company began in 1937, when the Italian immigrant 'João Rotta' settled down and developed a sawmill in the area of Caçador, a city in Southern Brazil. Using the available technology at that time, the Rottas set up their business and have developed along the years a solid and serious company that has been executing its social role and participating in the industrial development of the country.

Four generations working in the process of the wood demonstrate the true vocation of this family company very well. This vocation has always meant quality and competitiveness.

No native tree is tombed for the manufacturing of our products. All the wood used in the process comes from areas reforested by our company under severe environmental protection laws. Regarding the whole productive process, we can control the quality of our products from the seeds that will become trees, to the cutting and drying of the sawed and laminate wood, and finally the production of the panels and finish.

In the forest and in two factories with an area of 161,000 square feet, 300 people work and produce for several countries of America, Europe and Caribbean, making use of 60 years of experience and research, besides the most modern technology existing in this field (Rotta Móveis 2013).

Rotta has been in the furniture industry for 79 years. Since the creation of the company it was family owned and operated, passed down from generation to generation. From this generational ownership comes experience and knowledge about the industry. This is a company that is proud of what they do and therefore always mention that they are good stewards of the forest they own, thereby protecting their business operations for future generations. Vertical integration allows control of their own wood supply (forest), sawmills, production factories, and distribution. This oversight provides Rotta the power

to make sure quality exists through the entire process of furniture creation. Observations during the onsite visit include:

Rotta is truly a family affair, with all of Mr. Ilton Rotta's (current President of Rotta) children working in different capacities within the company such as Human Resource Director and Attorney. Ilton Rotta Jr. (Junior) lead the tour and was fluent in English. After inquiring how he had learned English so well, he replied he had lived in High Point, NC for some time and attended the University of North Carolina at Greensboro to study English. This was an example of a strategic investment Mr. Ilton was making in his son, who one day will take over the company. This opportunity provided Junior with the opportunity to not only learn English, but to also learn culture and help oversee Rotta's investment in the Brazilian Furniture Group.

During the tour, Junior showed the production, and assembly areas of the factory. However, it was very unique that Rotta Móveis had a showroom set up within its factory for when potential clients came to visit (Figure 26). Junior knew the company very well and was able to give a very in-depth tour. He also explained they were looking to expand their company and also start an on-line company that would be just for Brazil, called Nature Preseve. This company would be a web-based company only with no showrooms, just a website from which you can order products. He further explained how Renar and Rotta work together to create the Brazilian Furniture Group in High Point, North Carolina. This investment happened because Ilton Rotta and Marcelo Frey have a good relationship.

The company tour ended around 12:00 pm and Junior asked if we were going to visit any other companies that day. We were planning on visiting Temasa right after the Rotta visit, however Junior said all companies would be shut down for at least an hour for lunch. Junior then contacted Temasa to let them know we would be there after the lunch hour.

During the lunch hour Junior invited all of us to eat lunch with him and his spouse. After eating lunch Junior drove us all around town showing us the numerous shops and historical sites in Caçador. Later Junior accompanied us to Temasa Móveis and helped us pass through the security guard gate and also let the receptionist know we were there for a tour. (Sloop Field Notes 2013).

The Rotta's are proud of their company and the city in which it is located. This was displayed through the lunch tour of the city provided by Junior and his spouse as they highlighted historical sites and retail stores. Junior, his father and other family members live in close proximity to one another in the City of Caçador, thus continuing the generational investment in the community and the company. Also, Mr. Ilton's activity in one of the local churches is another example of how the Rotta family is embedded in the community in which they operate a business. Rotta Móveis is very well connected to the local economy through their personal lives and investments made in employees. Rotta seeks to further their relationships with an on-site showroom (Figure 30).



Figure 26. Showroom at Rotta Móveis, Caçador Santa Catarina.  
Source: Author 2001.

This showroom is set up in-house, ready for any visitor or buyer who might visit the factory. When Junior was asked about the showroom he explained, “We try to be in the customer’s mind all the time and to be as competitive as possible, therefore we invite the customers to visit our factory, paying all the travel expenses” (Sloop personal communication, Junior 2013). This is part of their strategy to keep themselves tied into the local, regional and global production chains by creating new partnerships with potential and existing clients. Another means for reaching out to other individuals who might be interested in Rotta furniture is by the use of web-based technologies (Figure 27). This website allows quick assumptions to be made about the company. First, it caters to a furniture markets that prefer solid wood furniture, with their 100 percent SOLID WOOD PRODUCTS standing out from the other text. This could imply that they are part of the global furniture market and understand the market’s demand for solid wood.

The second noticeable item is the social media icons located on the bottom of the website (Twitter, FaceBook, and YouTube), which suggests Rotta’s investment in web-based technologies as a way to further build their reputation internationally and also expand their market reach. Lastly, prominently displayed on the right side of their website is the advertisement for Nature Preserve, a subsidiary furniture company of Rotta Móveis. This company was founded on the idea of using technology to provide a localized market for Rotta furniture (Sloop Field Notes 2013).





Figure 27. Screen Shot of Rotta’s website 2016.  
Source: <http://www.rottamoveis.com.br/>.

In regards to expanding Rotta’s market, Rotta Móveis launched a new side project called Nature Preserve which is only a website found at [www.naturemoveis.com.br](http://www.naturemoveis.com.br) (Figure 28). The purpose of this website is to target the local and regional furniture market in Brazil (personal communication Rotta 2013). This website’s purpose is to make buying furniture easy for locals. As illustrated in Figure 31, the website offers places to create accounts, leave comments, and to chat offline with a representative from Nature Preserve. The focus of this website is on the customer to make the buying experience more personal and easier.

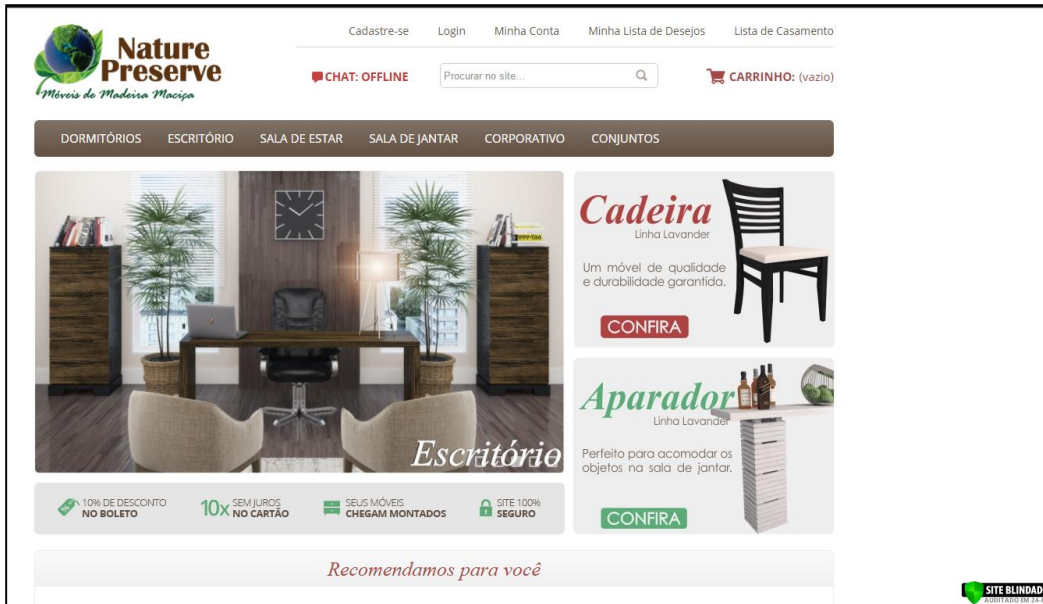


Figure 28. Screen Shot of Nature Preserve’s Website.  
 Source: [www.naturemoveis.com.br](http://www.naturemoveis.com.br)

All of the furniture contained within this website is produced by Rotta. The strategy behind this spin-off company was to target the local and regional markets without having to invest in physical space for showrooms or storage. Rotta invested in web-based technologies for both companies including websites, Facebook pages, and YouTube videos.

### **Renar Móveis**

Unlike Temasa and Rotta, Renar is located south of Cacador in the city of Fraiburgo (Figure 4 ). Renar originated as a sawmill company that was dedicated to creating and being a part of the local community. According to the company profile several key events shaped the evolution of the company.

RENAR – the name was created in 1919 when the European immigrants René and Arnaldo Frey united their initials and their dreams to build a new life in Brazil. The cold south of Brazil was their new home.

The dense native forest lead them to found a sawmill company around which the city of Fraiburgo was created.

In 1967 the first pine trees were planted by the founder of Renar, Mr. Willy Frey. This was the beginning of reforestation in the south of Brazil.

The first industrial building to process the wood was built in 1979, when the trees were in the correct cutting stage.

The Frey family helped the development of the city, which today has 37,000 inhabitants, and has businesses in agriculture, forest, furniture and hotels.

Renar currently is led by Marcel Frey, with more than 20 years in the furniture business, representing the third generation of the Frey family (Renar Móveis Profile 2013).

Both René and Arnaldo Frey brought with them their culture (from Europe) and knowledge about how to work sawmills, lumber, etc. From this sawmill a city was built, which now has 37,000 inhabitants. The Frey family were not just focused on the wood and furniture industry, but growing the city through economic development. For example, the Frey family established the first hotel – Hotel Renar – in 1981 (Prefeitura de Fraiburgo 2016) and they also started the Grupo Renar Pomifrai which is Brazil’s leading exporter of apples (Renar Maçãs 2015). The evolution of Renar Móveis included technological changes, creation of new business ventures, and social investments within their city. Renar continues to evolve and adapt to the ever changing technology. Figure 29 is an example of Renar using the internet to advertise and display their furniture company.

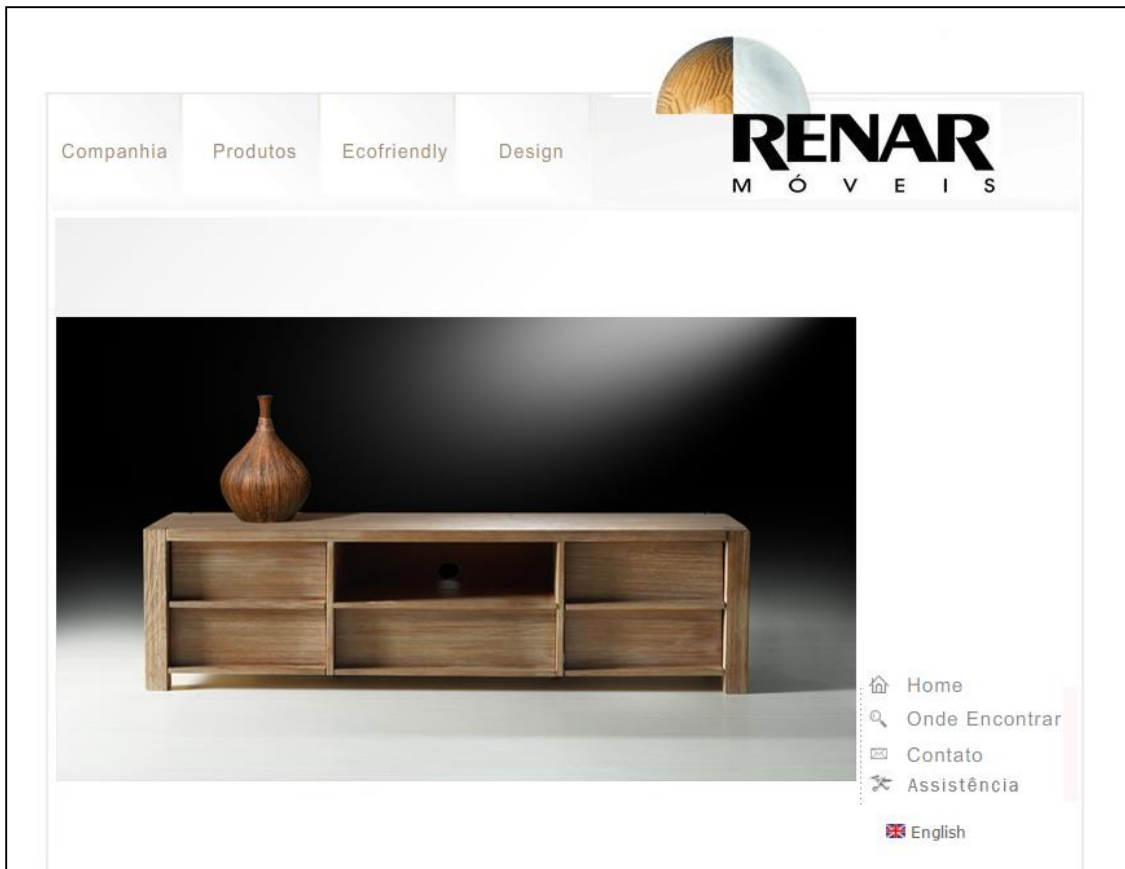


Figure 29. Screen Shot of Renar Móveis Website 2016.

Source: [www. http://www.renar.com.br/pt/index.php](http://www.renar.com.br/pt/index.php)

Renar's homepage on their website displays a clean designed piece of furniture, which characterizes the type of furniture produced by Renar. Also prominent on the site is the tab for Ecofriendly, which suggests to viewers Renar is aware and somehow participating in sustainable and green practices. In fact on the Ecofriendly portion of the website Renar states:

Our products are manufactured with wood from our own renewable forests, in a continued and balanced cycle. With a total of approximately 5,000 acres of forest, we have a complete control of our raw material.

Our industrial processes utilizes sustainable products like recycled carton, pva glues and others materials that do not harm our environment (Renar Website 2016 Ecofriendly).

Renar is aware of the international furniture standards in regards to sustainability and green products. Since Renar exports their products internationally, they adhere to these green standards so their products will meet the market standards. From the company's website we learn that Renar uses "The combination of numeric controlled machines (CNC) with modern management techniques [which] permit[s] Renar to produce with great flexibility and precision" (Renar Website 2016 Company) and that "The quality of its human resources and the valorization of teamwork are the main principles which orient the development of the total quality production" (Renar Website 2016 Company). Technology and human capital are valuable assets to Renar furniture. This is part of the story Renar is telling clients who might purchase their product. Social media plays an important part in Renar's advertising as seen from figure 30. Figure 30 is a picture from their FaceBook site which is advertising the Outlet Store, located in Fraiburgo, Santa Catarina.



Figure 30. Renar Outlet Store, Fraiburgo Santa Catarina.

Source:

<https://www.facebook.com/Lojarenar/photos/a.1575987072619550.1073741827.1575981835953407/1679224838962439/?type=3&theater>

The physical Outlet Store is another way in which Renar continues to be a part of the local community and economy in Fraiburgo.

During the researcher's field work, it was observed:

The physical location of the furniture factory is located in the center of the city near a greenway that runs around a lake and municipal park. The furniture factory shares land with the Grupo Renar Pomifrai, an apple factory, however it is very clear where the apple factory is versus the furniture factory and personnel did not seem to mix.

The factory includes a sawmill, product creation, and product finishing area. These areas contain numerous woodworking machines, most of which came from Germany and Italy. Renar owns and manages its own forest which consists of around 5,000 acres. The wood that is harvested from the forests are brought to the factory where it then is milled into

planks of wood (Figure 31). The sawmill includes numerous machines that do everything from de-bark the trees, planing the wood, to cutting it into planks to store. 1,500 m<sup>3</sup> of cut and dried lumber are produced per month or roughly ten truckloads of logs per day.

The pieces of wood made then go to the production area where they are used to create all the furniture Renar produces. Within the production area there are different phases the wood moves through on its way to becoming a piece of furniture. The wood has to be cut, sanded, and then assembled. Once pieces of wood are almost complete they go through the finishing phase which includes staining and assembling (Figure 32).

Renar furniture is a very productive company. Everyone was working hard and you could tell there was pride in their jobs just by talking with them. The majority of workers spoken to live within Fraiburgo and are grateful to be working for Renar. Some of the employees have only work for Renar for their entire career, while others had previously worked for other furniture companies like Ikea.

During this trip, Renar was under construction, they were renovating office space to make their production more streamlined and productive. The main offices for international sales and management were located a couple of blocks away. Through this renovation, everyone would be housed together, management and production workers. (Sloop Field Notes 2013).

From the Renar site visit, it is evident that Renar participates within the local economy of Fraiburgo and global furniture markets. Through the historical development of Renar and the city of Fraiburgo, Renar cultivated local and regional trust and business relationships. Renar's innovation and product upgrades to international standards allowed them to be successful within the international markets as well.



Figure 31. Sawmill Inside Renar Móveis.

Source: <http://gtbgsebrasil7680.blogspot.com/2013/04/on-to-fraiburgo.html>

Up until this point, the focus of this dissertation was on Brazil and the Brazilian state of Santa Catarina. Discussion from the six case studies covered raw materials, product production and furniture distribution. As noted in the case studies, some companies sell directly to distributors and citizens via internet, showrooms at markets, or local stores. Renar and Rotta Móveis operate independently in terms of collecting their raw materials for furniture production and product design. However, when it comes to distribution, the two companies joined in 1998 to create the Brazilian Furniture Group



which will serve to highlight the key role of building global connections and developing relationships based on trust so that global business can be more effectively conducted.



Figure 32. Furniture Being Stained – Renar Móveis.

Source: <http://gtbgsebrasil7680.blogspot.com/2013/04/on-to-fraiburgo.html>

### **Furniture Distribution: The Brazilian Furniture Group, High Point NC**

The Brazilian Furniture Group (BFG) was established in 1998 in the city of High Point, North Carolina with the sole purpose of expanding Rotta and Renar’s product distribution internationally through the High Point International Furniture Market. This Brazilian Ministry of Industrial and Trade Development noticed this development. As Marcelo Frey explained in an interview about BFG, “We received the Brazilian Export

Merit Award from the Ministry of Industrial and Trade Development. You have to be among the top 30 companies in volume for furniture export” (Slaughter 2004 p. 1). The choice of Rotta and Renar to form a partnership was a strategic decision by both companies to expand their market reach. They chose the High Point International Market because of the market’s reputation and the opportunity to meet new clients and suppliers.

The High Point International Furniture Market plays a crucial role in the furniture global production network since it operates an international furniture where buyers and sellers meet twice a year and the market is part of a large furniture cluster located within North Carolina (Debbage and Walcott 2010). The High Point Market attracts furniture companies from around the world ([www.highpointmarket.org/international](http://www.highpointmarket.org/international)) where a wide range of furniture products are put on display for prospective buyers. The market includes 180 buildings, encompassing 11.5 million square feet of furniture showrooms in the city of High Point. On average, about 75,000 attendees and approximately 2,000 exhibitors attend each market. The market has an international appeal with over 100 countries represented. On average, ten percent of attendees are international (High Point Market Authority 2015). The High Point furniture market facilitates international attendance by offering such things as foreign currency exchange, interpreter referral, travel services, and prayer and meditation rooms. The website also offers information about exporting and visas (High Point Market Authority 2015). The High Point Furniture Market provides a place for companies and their agents to gather and develop relationships and business deals.

Our registration company provides, at a very reasonable cost, a scanner that allows every buyer's badge to be scanned. That 'creates a business relationship 'which allows for email solicitation. There are many social events during the Market. Most exhibitors offer food and/or beverages in their showroom. This encourages more social interaction (Personal Communication, Thomas Conley, CEO High Point Market Authority 2014).

The High Point Market is also designed to encourage interaction among buyers, sellers, and company owners. Thus, the Market is important for furniture companies seeking to make international contacts and develop relationships. Andy Counts, the Chief Executive Officer of the American Home Furnishings Alliance (AHFA) said the High Point Furniture Market is "critical to companies who want to be competitive in the global market" (personal communication, 2014).

Furniture must be seen, touched, compared and tested in order to be appreciated. That makes Markets critical to a company's success. Also trade buyers and sellers build relationships in the course of doing business. Since most sellers use representatives, the market is the only chance to meet the company higher-ups. (Personal Communication, Thomas Conley 2014).

All of these factors partly explain why the Brazilian Furniture Group was established in High Point, where the Group rapidly developed its own showroom and warehouse. When asked about establishing locations outside of Santa Catarina, Renar's President explained, "We're trying to build a business step by step so that people know that we are reliable" (Edmonds 2001, p. 1). This is critical to building trust in a new market. Mr. Counts was asked if culture is an important factor in the global furniture industry and replied: "Most critical thing, relationship business, boots on the ground, you

have to have a local presence” (personal communication, Andy Counts 2014). This “boots on the ground” method is very important for Brazilian companies who are trying to gain access to the international market, as Marcelo Frey explained. Jeff Homes, owner of J. Homes, LLC and co-author of *Estudos: O Mercado Norte-Americano de Móveis* explained, “I can name numerous instances where deals and projects have fallen through because of cultural differences.” He continued by explaining that culture “may be the most important” when working within foreign markets and companies (personal communication, Jeff Holmes 2014).

BFG is extending their distribution by creating a physical presence at one of the largest furniture markets in the world, thereby building trust and a brand name that is trusted and recognized within the global furniture market. BFG not only uses the boots on the ground method, but they also use web-based technologies such as websites to help reach a variety of new buyers. The BFG website home page prominently features the Group’s high-quality, solid-wood bedroom furniture while simultaneously touting its warehouse facilities in North Carolina, and pointing out the key features of its innovative mixed container rapid delivery program (Figure 33).



Figure 33. Screen Shot of BFG’s Website 2016.  
Source: <http://www.brazilfurnituregroup.com/>

Prominently displayed on their website is a furniture warehouse to serve customers who can receive their orders more rapidly than if the order had to be shipped from Brazil. Additionally, US residents and others may schedule appointments to view furniture at their convenience via the BFG website – a major competitive advantage in an industry that still thrives on a “touch and feel” approach. The showroom is open twice a year during the High Point Furniture Market or by appointment. The Brazilian Furniture Group is also unique because it is a collaboration between Renar Móveis and Rotta Móveis. BFG was created in 1998 by Renar Móveis and Rotta Móveis, with both companies originating from Santa Catarina, Brazil (Brazil Furniture Group 2015). Each

company is family owned and the companies are from different cities in Santa Catarina. Finances also play a role in their collaboration since the BFG lowers the cost of renting a showroom for both companies in High Point, NC. Some advantages of the Brazil Furniture Group include the ways one can purchase and receive products (Table 22).

Table 22. Brazilian Furniture Group Customer Buying Mode, 2015

<b>Brazilian Furniture Group Customer Buying Mode</b>	
<i>Smart Mix Container Program</i>	<i>Domestic Warehouse/ Quick Ship Delivery</i>
<ul style="list-style-type: none"> <li>• Unlimited mixing of 40 different styles</li> <li>• 8 Week Delivery Time</li> <li>• No Advanced Payment</li> <li>• Land Prices</li> </ul>	<ul style="list-style-type: none"> <li>• Shipping Time: 3 – 6 Business Days</li> <li>• No Minimum Order</li> <li>• BFG works with different furniture carriers               <ul style="list-style-type: none"> <li>○ World Wide Logistics</li> <li>○ Shelba D. Jonson</li> <li>○ Morrows</li> <li>○ Southeastern</li> <li>○ Sunbelt</li> </ul> </li> </ul>
Source: <a href="http://www.brazilfurnituregroup.com/productsBySoldMode.php?type=container">http://www.brazilfurnituregroup.com/productsBySoldMode.php?type=container</a>	Source: <a href="http://www.brazilfurnituregroup.com/productsBySoldMode.php?type=warehouse">http://www.brazilfurnituregroup.com/productsBySoldMode.php?type=warehouse</a>

Source: [www.brazilianfurnituregroup.com](http://www.brazilianfurnituregroup.com), 2015

Table 22 illustrates some of the innovative ways in which BFG puts the customer first with things like the Smart Mix Container Program. BFG can offer land shipment prices including the purchase price, freight, insurance, and other costs up to the port of destination in one package deal. In some instances, it may also include the customs duties and other taxes levied on the shipment (Business Dictionary 2015). Brazil Furniture Group (BFG) offers this as a convenience to their customers because they understand it is

important that customers are not exposed to the complexities of shipping merchandise internationally. It is also important to note the different carriers BFG already has contacts with for domestic shipping including World Wide Logistics, Shelba D. Jonson and Sunbelt – all shippers with well-established reputations in the United States.

Furthermore, since the Brazilian Furniture Group is a company made up of Rotta and Renar Móveis, it was easier for BFG to cement deals with these logistic carriers since established relationships have already been formed. Table 23 highlights some of the key features of BFG in regards to shipping, payment, showroom information and the Group's 'green' virtues (e.g., its renewable forest program and the formaldehyde free products).

Based on the author's site visits to the Brazilian Furniture Group (BFG) showroom and their respective furniture companies in Brazil, the evolution of social ties and trust across the global production network were crucial in developing market niches for Santa Catarina furniture companies and partly explain their ability to be competitive in export markets. Many of these companies are sensitive to the complexities of global production processes. Key features of the Brazilian Furniture Group (Table 23) allow BFG to maintain some control over the entire process of their products. This is also why the two companies partnered to create the BFG as another means of furniture distribution.

Table 23. Brazilian Furniture Group Features, 2015

<b>Brazilian Furniture Group (BFG) Features</b> (Taken Directly from <a href="http://www.BrazilFurnitureGroup.com/features">www.BrazilFurnitureGroup.com/features</a> )	
<i>Category</i>	<i>Feature</i>
Shipping	Mixed Container Program No minimum quantities Can mix any styles No extra cost for mixing Does not delay shipping
Payment	Door delivered prices No advanced payment No hidden cost No shipping hassle Price includes ocean freight, customs clearance and inland freight (BFG handles logistics)
Shipping	8 Weeks From the ship date to when you open the container
Product Material	100% Solid Wood
Air Regulations	Formaldehyde Free
Showroom	High Point, NC Set up all year long (Call for showing)
Experience	70 years of experience
Renewable Forest	15,000 acres of renewable forest Every tree cut, two are planted
Source: <a href="http://www.brazilfurnituregroup.com/features.php">http://www.brazilfurnituregroup.com/features.php</a>	

When the author visited the BFG showroom in High Point, NC in April 2013 and October 2014 this was the scene:

During each of the visits, the atmosphere within the Brazilian Furniture Group showroom was one of professionalism mixed with an amazing mixture of art and culture. As one would enter into the showroom you were quickly greeted with a smile and a ‘how may I help you?’ The furniture on display was constructed of solid wood and the displays were set-up so that numerous individuals could be present, but all the conversations would not interrupt one another. Culture could be seen through the craftsmanship of the furniture and heard through the multiple



languages being spoken to the different clients. There were whispers of English, Spanish, French, and Brazilian Portuguese. As with most showrooms at the High Point Furniture Market, there is an area with drinks and snacks. This area is designated for the staff who are working the showroom, but also for potential investors or buyers to talk and have conversations.

It was interesting to note that the two presidents Marcelo Frey (Renar) and Ilton Rotta (Rotta) would always make sure they shook everyone's hand and spoke to everyone who visited the showroom. In some cases one or more of the presidents would sit down with a client at one of the beautiful BFG tables to talk business. Both Mr. Frey and Mr. Rotta spoke English very well, which was key since the majority of their visitors were speaking English.

(Sloop High Point Market Field Notes 2013; Sloop High Point Market Field Notes 2014).

These site visits help demonstrate the lengths BFG has gone to, and is continuing to develop, in regard to building a trusted brand name in the Global North through a distribution site in North Carolina. The entire focus of the showroom was distribution of products and trust building. This was manifested through how each individual was met by not only a salesman, but the actual owners of BFG. Both companies' presidents know the importance of locating in the area in which they want to sell and make deals. They chose to locate the BFG in High Point, NC because of the size of the market and the opportunity to create new connections and expand their furniture market. The BFG showroom and warehouse helps establish strong ties in the North Carolina furniture value production chain, which will also help establish credibility for BFG in this local market. In speaking with Ilton Rotta (President of Rotta Móveis) and Marcel Frey (President of Renar Móveis) during the 2014 High Point Market, they both emphasized the importance of knowing the market, culture and producing great quality products.

## **Summary and Implications**

This chapter examined the Brazilian furniture industry at the national, regional and state level using primary data from IBGE, IEMI, interviews and site visits and secondary data (i.e. furniture studies and books). Examining the furniture industry through these different scales of analysis illustrated how a concentration of furniture industries and production within Brazil, especially within the Southern and Southeastern regions, evolved through a process of path dependency and innovative use of technologies and relationship building. This was particularly the case in Santa Catarina, a rapidly emerging internationally connected furniture cluster in Brazil.

All six of the Santa Catarina furniture company case studies provided insight into how locally grounded furniture firms can develop a global production network focused on export markets in the Global North. Some of these companies started off as sawmills then expanded into a furniture producing company. Others used scrap wood from a company they worked for to start creating furniture and later evolved into a company of their own. The majority of these furniture companies within Santa Catarina were globally connected early in the global furniture value chain where buyers frequently dictate and shape the market in terms of furniture quality, material, and design. The companies highlighted within this dissertation all attempted to upgrade their value-added in the global value chain through innovation particularly regarding the use and implementation of the best machinery and web-based technologies such as websites and social media. From the global production network literature, it should be noted that the company case studies all seemed to exhibit elevated levels of social, territorial and network

embeddeness. In order to understand how the six case studies show social, territorial and network embeddeness it is important to see them in the context of their ownership, raw materials, production and distribution practices. Table 24 places the six case studies within these contexts.

Under the heading of Historical Context all three of the companies found within the São Bento do Sul furniture cluster (Indústrias Zipperer, Indústrias Artefama, Rudnick Móveis) developed from individuals who already were working with wood in some form, such as carpentry or within another furniture factory. This holds true for Temasa Móveis. On the other hand, two of the emerging clusters companies started off in the sawmill industry (Rotta Móveis, Renar Móveis). From the creation of these different companies came different beliefs and goals based on the way in which they were created, demonstrating a corporate belief system in how business should be handled. This also effected local interactions. For example, Rotta Móveis and Renar Móveis both began as sawmills so they had opportunities to interact with other furniture companies and employees in order to build their reputations and gain knowledge.

Table 24. Six Brazilian Case Studies Represented within a Simplified Global Production Network

Brazilian Companies	Historical Context	Ownership Type	Raw Materials	Production	Distribution
Indústrias Zipperer →	Finishing Carpenter, 1st Company in São Bento do Sul	Family, with help of outside consultant →	3rd Party Supplier →	Factory in São Bento do Sul Furniture Cluster →	Website
Indústrias Artefama →	Local Factory Workers Started Company, São Bento do Sul Furniture Cluster	6 Friends started the Company, today it is a Shared Company with 3 Directors owning 97% of shares →	3rd Party Supplier →	Factory in São Bento do Sul Furniture Cluster →	Website, Showroom in Florida, Local Stores
Rudnick Móveis →	Started as a cabinet-making carpenter shop, São Bento do Sul Furniture Cluster	Family Owned →	3rd Party Supplier →	Factory in São Bento do Sul Furniture Cluster →	Website, partnership with other Lead Firms (Stanley), Local Stores
Temasa Móveis →	1990s - Started with making windows →	3 Friends →	Own Forest & Sawmill →	Factory in Caçador →	via Lead Firms (Best Buy, Ikea, Walmart, etc.)
Rotta Móveis →	Sawmill, influential in the development of Caçador →	Family, 3rd Generation →	Own Forest & Sawmill →	Factory in Caçador →	Website, BFG & Nature Preserve
Renar Móveis →	Sawmill, developed the city of Fraiburgo →	Family, 3rd Generation →	Own Forest & Sawmill →	Factory in Fraiburgo →	Website, Outlet store in Fraiburgo & BFG
Governed by Laws and Taxes from Santa Catarina and Brazil					

Governed by International Laws & Taxes if they Export or Have Locations Outside Brazil

Source: Rocha et al 2008, Company Websites, Authors Field Notes 2014

The majority of these companies started out as and continue to be family owned companies. Indústrias Zipperer and Indústrias Artefama changed their ownership, which could cause the company’s original belief system to change, thereby affecting the company’s reputation within the local, regional and international furniture markets for better or worse.

The location of all factories stayed the same since their creation. However, a few of the companies (i.e., Rotta Móveis, Renar Móveis, and Indústrias Artefama) added showrooms or offices within the United States. These additions were implemented to enhance the distribution of their products to markets other than in Brazil. Thereby, activity within the downstream of the value chain provides control over their products in regards to how they are sold and marketed. Distribution occurs in one of three ways: website, showroom, or through a lead furniture firm. For example, Temasa distributes furniture through their business dealings with Wal-Mart and Ikea; though Rotta and Renar demonstrate this trust and relationship building through their efforts in creating the Brazilian Furniture Group in High Point, NC. The differences in distribution has to do with the company's overall goals and their mission. Rotta and Renar are both trying to build a reputable furniture brand both in Brazil and in the global market. Therefore, both companies place emphasis on the vertical integration of their companies, which provides oversight and quality control throughout the entire system. However, Temasa takes a different approach to the distribution or downstream of the value chain. They solely rely on third party companies to buy and sell their products. Temasa markets itself as a producer; this is why they own all of the upstream production within their value chain. Owning their own forest, sawmills and production sites allows them to market themselves as environmentally friendly and sustainable, while at the same time having the ability to produce high quality solid wood furniture based on customer request. Thus, we start to see little differences within each companies' value chain through their means of distribution, which is based on creating trusting relationships among different

companies. The business relationships Temasa's involved with also dictate other aspects of the company. Such as quality control, equipment (technology) used, style, design, and the production floor. Out of the companies visited, Temasa was the only one with signs hanging throughout the production floor with goals posted on them. In addition, the addition of the catwalks through the production area are signs of a different management style. These catwalks allow visitors and executives alike to tour the factory and have a vantage point of the entire production area at one time.

Social arrangements can be better understood through a business's history, ownership, raw materials, production and distribution. Social embeddedness can be understood by how an individual views the world based on their history, culture and overall life experience and how these influence this persons decisions or understanding (Henderson et al. 2002). How a company was established and ownership type can directly affect their strategies, values, and priorities; and these decisions can affect the location in which the company resides. If a company was once family owned and helped to establish a community but now is owned by an outside group who does not have the social ties to the community, they might close the factory and move it to a new location. This decision would have a major impact on the local community in which this company resides and had many social and economic ties.

Social arrangements can be through the governance model of the company. For example, Indústrias Artefama's headquarters are now located in Florida while the furniture production is still located in São Bento do Sul. Another example is Brazilian Furniture Group; Ilton Rotta Jr. (Rotta Móveis) lived in High Point, North Carolina for a

period of time to oversee the warehouse and showroom. Additionally during this time, he attended the University of North Carolina at Greensboro to study English. Junior's attendance at UNCG is an example that typifies the most basic understanding of the Toyota Model in which companies will move parts of production or distribution to other locations in the world, but the managers of these locations will be from the country of origin. The reason for maintaining managers from the country of origin is because of their understanding of the companies culture and interworking's. Companies want to preserve this because many of these companies have built their cliental upon the quality of the products they receive from these companies.

Territorial embeddeness deals with locations and how this can affect companies through possible economic activities and social dynamics that already exist in those locations (Henderson et al. 2002). For example in Table 24 under Raw Materials, all of the companies within the São Bento do Sul furniture cluster use a third party company to produce the material needed for their furniture production. On the other hand, all of the companies outside of the São Bento do Sul furniture cluster own and operate their own forest and sawmills.

Finally, network embeddeness is characterized as a process of building trust (Henderson et al. 2002). When representatives from Rudnick, Artefama and Rotta were asked "Is networking important in being able to sell your product worldwide?" they gave the following answers: "very important" (personal communication, Josevil Palmeira 2014), "Essential to have a good relationship! It makes a lot of difference..." (personal communication, Angelo Luiz Duvoisin 2014) and "Yes, these days, the network is one of

the most important things in our business. If we network, we can share information about design, products, etc.” (personal communication, Ilton Rotta, Jr. 2013). These responses reveal a common theme in their progression towards creating trusting relationships within their local, state, national and global furniture markets to develop various business and consumer networks and strategic alliances.

Networks and alliances can be a fruitful way to increase the firm’s international competitiveness . . . Small firms develop experience within business through personal contacts, networking activities, trials and errors. All the different experiences represent assets, which a firm can build upon. Once experience has been gained, it becomes a resource for the firm and in order to improve performance, it is only the relative change in this asset that really counts (Majocchi et al. 2005 p. 733).

The Brazilian furniture companies featured in this dissertation all illustrate the need to understand culture, whether that is in terms of furniture design or having a business meeting with foreign clients. According to an exhibitor during the 2014 High Point Furniture Market,

It’s a small world, many companies produce same or similar items. Sometimes buyers will choose one company over another because they have a trusting relationship. They might buy your product over someone else, even though it might cost a little more, but you know and ask about their family (personal communications, Sloop 2014).

Notably when asked about other contacts for a project, every individual was able to name a company with a corresponding contact. Demonstrated here is that on some level, all of these companies have respect for and knowledge about one another through



their different interactions within the furniture production network, demonstrating another example of their network embeddedness.

The use of e-commerce is also evident in the six case studies and the 72 companies sampled within Santa Catarina. The use of e-commerce or web based technologies allowed SME furniture companies in Santa Catarina to enter into the global furniture market with a lower investment than before this technology existed. These technologies allow companies to collaborate and share information while also creating the opportunity to develop and cement potential business deals. These technologies also allow companies to hyper focus on a certain market, such as the case with Rotta's subsidiary Nature Preserve. Nature Preserve solely focuses on the Brazilian furniture market, not international sales. Although the use of web-based technologies can open international furniture market doors, it does not create deals. It can provide the opportunity but to seal the deal, companies must establish trust and a trusted brand in order for business deals to occur. Through application of the information gathered during this dissertation and to the broader context of furniture in the Global South, the theoretical context of global commodity chain, value chain and production networks suggest possible ways for other companies to interact and do business with one another. Figure X demonstrates three examples of how furniture companies could participate within a global commodity chain, value chain and production network. It is important to recognize each phase contains value, power and embeddedness. These notions come from the Global Production Network proposed by Henderson et al. in 2002. For example, in phase I, value can be the initial creation of value (i.e. the trees and forest, the raw

material). Then in phase II value can represent value enhancement, such as cutting trees into boards and planks which will be sold or used in furniture production.

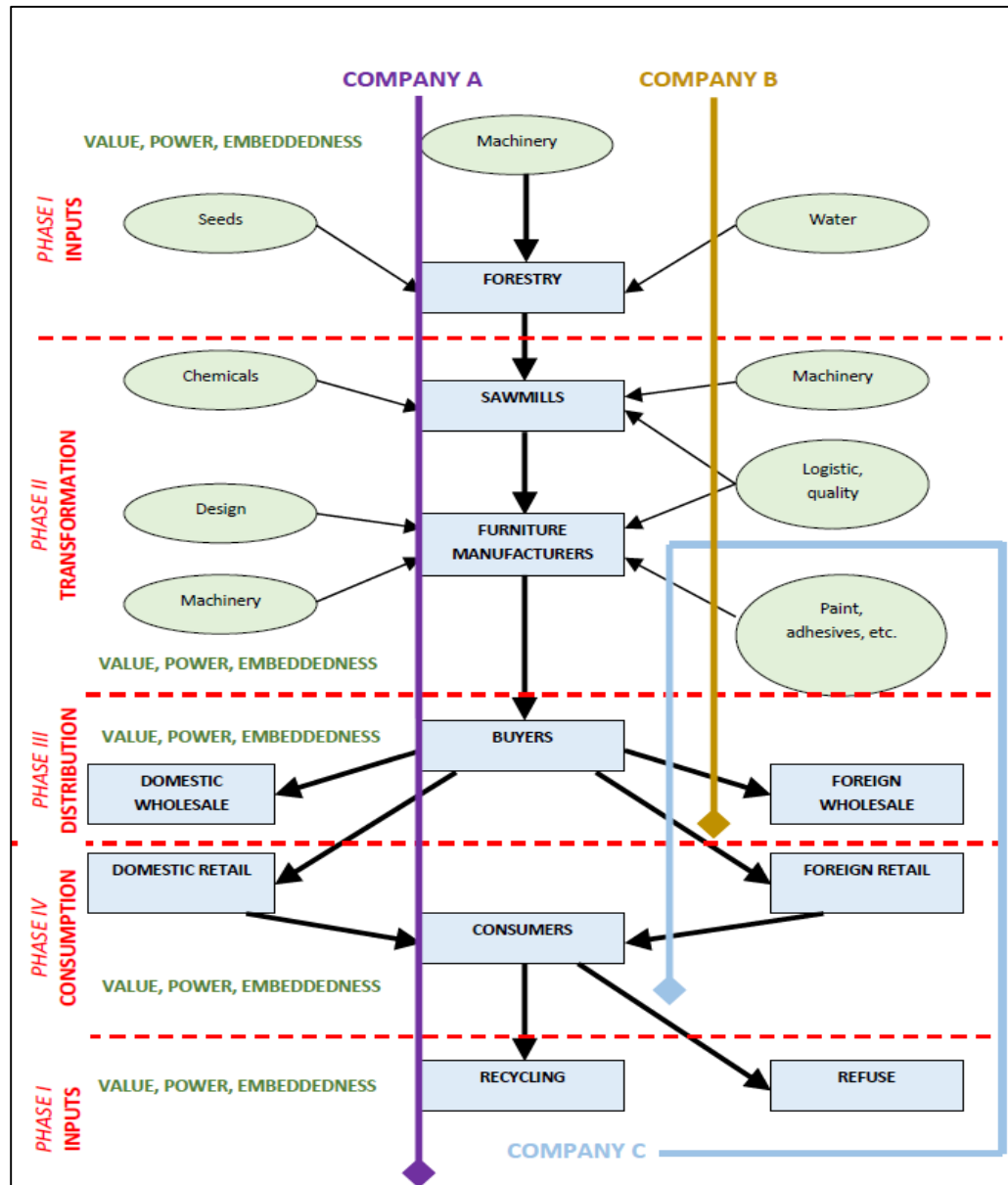


Figure 34. Potential Paths Through the Global Commodity Chain, Value Chain and Production Network.

Source: Coe et al. 2007, Henderson et al. 2002, UNIDO Sectorial Studies Series 2003, Author

Phases III and IV show how value is captured through buyers and consumers. It is important to note that as a product moves through these different phases value, power, and embeddedness take on different roles and have different influences on the companies.

Company A is typical of a company that is one hundred percent vertically integrated. They own everything from the raw materials down to the distribution of their product. Rotta and Renar Móveis are examples of these types of companies. The next Company B, represents companies such as Temasa, who own everything up until the distribution of the product. For distribution, Company B collaborates with other major furniture companies who are already established within the global markets and distribute Company B's products under their own name. Company C shows another way companies can operate within a value chain. The companies highlighted in this dissertation from the São Bento do Sul furniture cluster got their beginnings by creating products from scraps left over from companies who employed them. This figure demonstrates the numerous ways in which a company can participate within a value chain and production network. As mentioned previously, through each phase these companies are constantly trying to create value, gain and control different types of power and deal with the advantages and disadvantages of being socially and physically embedded within different places.

Understanding the numerous variations of the production networks and value chains will help policy makers, other furniture companies and other Global South countries develop policy and standards to aid in participation within the global furniture market. As Murphy (2012) noted in his work in the Bolivian furniture industry

By emphasizing the views and realities of smaller scale Southern enterprises over those of leading firms or Northern TNCs, research such as this can reveal business strategies that might be invisible to studies where the best, biggest, or highest value markets, networks, and firms are emphasized (p. 229).

As noted in this dissertation, Table 24 and Figure 34 demonstrate this examination of smaller companies. Therefore, one goal of this dissertation was to add to the growing literature on the Global South through the theoretical lens of global production networks and value chains.

## CHAPTER V

### CONCLUSION

The Brazilian furniture market is an emerging market as evidenced by doubling their production values over the last decade (Renda et al. 2014). In the past few years, Brazilian furniture emerged on an international level in regard to their furniture design (Sissions 2014; Tarmy 2016). Although past research dealing with global production networks in transnational corporations identified ways in which companies enter into global markets via cluster relationships and the utilization of technology, few studies examined these relationships regarding small and medium sized companies within South America (Murphy 2008; Murphy 2012), and more specifically Brazil. The overall goals of this dissertation were to show: first, the furniture industry is spatially concentrated in Brazil, and that one of the most rapidly growing clusters in terms of international sales is São Bento do Sul, located in the state of Santa Catarina. The second question focused on the reasons why Santa Catarina has emerged as an internationally connected furniture cluster network through innovation centered on IT, process and product development. Finally, it is argued that the development of any innovative furniture value chain in Brazil is inherently constrained by difficulties of developing a market brand that is recognized and trusted in the Global North markets.

The mixed-methods approach of this dissertation illustrated the spatial concentration of the furniture industry in Brazil largely to the Southern and Southeastern regions of the country. The explanation for this concentration deals with the historical settlement patterns of Brazilian immigrants, with the majority of immigrants in these regions coming from Europe and more particularly Germany, Italy, and Austria. These furniture producing regions also contain higher concentrations of the Brazilian population, and a natural landscape with mainly pine wood forest. In other words, this is where the majority of raw materials exist for making solid wood furniture in Brazil. Furniture data from industry reports and census data suggest there is a spatial concentration of furniture industries within Brazil, with the strongest concentrations located in the Southeastern and Southern regions.

One of the most innovative and export-oriented furniture clusters in this region is located in the state of Santa Catarina. Using a mix-methods approach of interviews, site-visits and data from industry reports, it was concluded that the majority of furniture companies in Santa Catarina use innovative methods to stay competitive in the global market. These innovations include contemporary woodworking equipment and web-based technologies such as websites and social media. Ivo Cansan, President of the Associação das Indústria de Móveis do Estado do Rio Grande do Sul said, “We demand more action because we know that only through innovation, technology, and design, and sustainability we can be at the forefront of the market and be competitive globally” (Brasil Móveis 2013 p. 11).

The Brazilian state of Santa Catarina continues to develop a trusted brand name in a global market, which requires investments in the physical and social development of their companies in order to stay competitive. The physical investment is centered on the technology used to produce the product and the methods that are employed. All of the firms in this dissertation are purchasing their cutting edge machinery from Germany and Italy. Web technologies is another type of physical investment, 62 percent of the companies examined had websites and 43 percent of the companies had a Facebook page. Social investments include embedding one's self in a local culture so as to understand the market potential and demand. This also includes attending other furniture related markets like the one in High Point, NC and interacting with other international companies to build trust. Significantly Rotta and Renar formed the Brazilian Furniture Group and attend the High Point Furniture market so they have a physical presence within a highly respected international furniture market, thus providing them opportunities to build trust and make new business deals. This is also why Artefama opened a showroom in Florida, so they would have a physical presence within their expanding market and allow the company to better understand the market in the United States.

Another key finding in this dissertation is the notion of path dependency. This is where a company (or companies) create a path for other companies to follow, which will lead to similar results. While examining historical information, the São Bento do Sul furniture cluster had key companies who were instrumental in creating a path in which other companies could and would follow. Indústria Zipperer was one such company that created a path for all other companies to follow if they wanted to enter into the global

market through exports. This path was created through design, business deals and innovation (in this case starting to use 100 percent solid pine wood for furniture production) and the creation of export deals.

Zipperer exemplified four critical steps that permitted growth of the São Bento do Sul furniture cluster and which other companies adopted in some form: “the use of wood scraps to manufacture handicrafts, exporting these products, initiation of colonial-style furniture production and production and exporting of pine wood furniture. Also, provided the initial pool of trained workmen for the area” (Rocha et al 2009, p.13). These key items identified were also used or adopted by other companies within the cluster to help grow their business.

Overall, the big question remains, “Is the Brazilian furniture market going against the grain or not?” Significant in this dissertation is that all the furniture companies studied focused on building and nurturing relationships via furniture markets and personal visits. The theory of clusters proves to be true within the São Bento do Sul furniture cluster with evidence in the “networks and ties between firms, available resources, supporting institutions, end-markets served and firm related factors” (Rocha et al. 2009 p.6). Murphy’s (2011 and 2012) research in the Bolivian furniture industry typifies this clustering. Both the Bolivian and Brazilian furniture clusters operate in similar manners in regards to labor pools, knowledge spill over, and ties between the furniture firms and non-furniture firms. Beerepoot (2008) found similar results in his study on furniture companies and employee upgrading in the city of Cebu, located in the



Central Philippines. They suggest the way in which Brazilian clusters function can be found within the global furniture industry as a standard way of production.

The use of technology in Santa Catarina is very much the same way technology is used throughout the global furniture market as well. Both the Brazilian furniture industry and the South African furniture industry (Moodley 2001, 2002, and 2003) use web based technology to position themselves within the global market via websites. These websites open up opportunities for companies that implement this technology; however, these companies still have the task of creating trust and business relationships with interested investors and buyers.

Consequently, some differences did surface during this dissertation and one of these differences was in the form of payment. Payment of purchased furniture is an example of how the Brazilian market is going against the grain. Ilton Rotta, Jr. explains, “Different than China, we have the customer’s pay after they receive the container at home and have inspected the goods” (personal communication, Junior 2013). Another difference noticed when studying the six case studies is that none out sourced their furniture production. This could be in part by the ownership type of these companies. The majority of the Brazilian companies examined within this dissertation started as a family owned business and many are still family owned today. Because of this, they kept everything in house, although this would need to be explored in more detail to determine if this was part of a larger trend. However, the six case study companies suggest this could be true for more Brazilian companies and might be a standard within the Brazilian Furniture industry.

The information obtained through this dissertation is valuable in terms of providing an in-depth analysis of the Brazilian furniture market from the perspective of Santa Catarina. Although this dissertation was able to test the different hypotheses stated in this research, the results of this dissertation also identified several avenues for future research and highlighted the need for a more comprehensive understanding of this model of path dependency and clustering that is happening in the rest of South America and Asia. Other questions include whether the current production model in Brazil will continue to operate as is with the furniture industry pushing for more sustainable and greener furniture and furniture practices? This dissertation examined Brazilian furniture companies who were established in Brazil and exporting to other countries. However, this dissertation begs the question: is Brazil a location in which other countries can outsource furniture work since Brazil has so many established furniture firms and clusters? As the US Commercial Services states, “Success in Brazil’s business culture relies heavily upon the development of strong personal relationships, the keystone of productive business partnerships” (2010 p.4).

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