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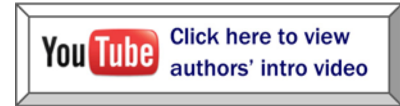

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Food Value Chains: Social Networks and Knowledge Transfer in a Brazilian Halal Poultry Network

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Abstract

This paper describes a food value chain driven by Muslim precepts, exploring the influence of religion on social networks aspects and on knowledge transfer. Religions have a growing importance for international business, shaping the value chain. Assimilating religious precepts can contribute to better business network management for actual and intended food producers. A qualitative case study based on interviews, non-participant observation, and document analysis was conducted. The main results are that trust and commitment give a competitive edge to the Brazilian Halal poultry network when serving Muslim markets worldwide. Knowledge transfer is influenced by the religious context, with a small group of companies (Islamic Centers) governing interpretations of the Muslim precepts.

Keywords: International business networks, religious knowledge transfer, Halal food markets, Brazilian poultry exports.

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Introduction

Food and agribusiness firms face a number of complex challenges to remain competitive, including globalization (Hopewell 2013), IT implementation (Verdouw, Robbemond and Wolfert 2015), environmental changes (Ioris, Irigaray, and Girard 2014), and genetic modification (Inghelbrecht, Dessein, and van Huylenbroeck 2014). Religion has long played its part, as a number of faiths have rules concerning food consumption. As followers grow in numbers and in economic power, so does the influence of their religious customs. Understanding the interconnectivity that religion has in food value chains is critical to delivering products to these specialized and growing market segments. Which procedures must be established and how they are followed depend on the interchange among people, knowledge, and fait—forming a complex network. This research focuses on the following question: what are the characteristics of a religious-based food network? The study addresses Halal food, a growing market due to the rapid increase of Muslim consumers. It depicts roles assigned to Muslim and non-Muslim actors as they play different parts in the value chain. Social network aspects, such as trust and commitment, are assessed with regard to how one builds trust to be accepted into the network and how this type of knowledge, which is highly based on religious precepts, is transferred. The main objective of this research is to describe a Brazilian Halal poultry business network in terms of how religion influences the value chain, especially knowledge transfer and assimilation into processes.

Social Networks

Social networks are abstract, invisible sets of interwoven wires (interactions) and nodes (actors) that form social ties (Fombrun 1982). From a sociological perspective, social networks can be a tool to understand inter-organizational and social relations (Powell and Smith-Doerr 1994) and an alternative concept to the economically defined vision of firms and their constituents (Granovetter 1985). We live in a network society where people are connected, and firms are connected through people. The business environment is formed by a network of organizations to which the specific firm is open to and associated with (Nohria 1992). Inter-organizational networks involve firms linked by sets of people who transfer resources and information among each other, adding value to a product to fulfill a specific consumer need (Gulati and Gargiulo, 1999). These actors (people) relate to each other (purposefully or not), with decisions, behaviors, and deliveries shaped by the rules of the network in which they are inserted (Nohria 1992).

Social networks involve trust; that is, "*an individual's belief about the integrity and dependability of another*" (De Jong, Van der Vegt and Molleman 2007, 871). When relations between actors are based on trust, there is a higher chance of positive results to the network and its participants (Gulati 1995). Trust improves business performance in several ways: continuous learning through increased information exchange; higher motivation for problem solving; greater achievement through joint investments in specific assets that enhance customer relationships; reduction of transaction costs due to fewer control mechanisms; and incentives (Sako 1998). Trust is often acquired through cooperation, i.e., coordinated actions oriented toward common goals, resulting in more efficient collective mechanisms with an outcome of mutual benefits (Combs and Ketchen 1999; Gulati 1995; Verschoore and Balestrin 2008). Religion is also a source of trust (Traunmüller 2010) and encourages benevolence (the intention of one party to do

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good to another) and integrity (adherence to a set of commonly acceptable principles) (Mayer, Davis and Schoorman 1995).

Social networks involve commitment and "*a feeling of sharing beliefs and values with one's entire organization*" (Harrison, Newman and Roth 2006, 306). It involves the confidence from one actor that the other will behave according to rules (explicit or tacit) that regulate (formally or not) the network (Verschoore and Balestrin 2008). It is the belief that the existing relationship is important to the point of being worth keeping which ensures maximum effort to sustain it (Morgan and Hunt 1994). Commitment encourages network participants to preserve their relationships and resist opportunistic behavior toward short-term results in favor of long-term benefits. Ruyter and Semeijn (2002) classify commitment in six categories: emotional, calculative, instrumental, resistance, behavioral, and moral. Although all six may occur in a social network, moral commitment, which is based on social obligations, may be more relevant in a religious context.

Knowledge Transfer

A systematic understanding of how knowledge obtained by individuals diffuses into networks and firms that thus become repositories of such knowledge is a contemporary discussion. Polanyi (1966) conceptualizes knowledge as being both explicit (objective and concrete) and tacit (subjective and implicit). They are intertwined in a dynamic movement. Explicit knowledge is easier to access, formalize, communicate, and share. Tacit knowledge is personal, contextual, and difficult to disclose; it is deeply rooted in an individual's actions and experience as well as in their ideals, values, and emotions (Takeuchi 2001). Tacit knowledge transfer requires an understanding of if, how, and how frequently individuals gather in groups to discuss, converge, and share what they know. These networks may autonomously emerge from individuals, as in communities of practice (Wenger 1998), or they may be promoted by firms (Grant 1996).

Firms are typical repositories for explicit knowledge and enablers of tacit knowledge. They use their structure and schemes to enhance the transference and communication of skills and capabilities, promote the exchange of ideas, and provide internal mechanisms that coordinate and integrate individuals' specialized knowledge (Grant 1996). Knowing how to select, interpret, and integrate knowledge is a valuable asset for firms, and the special skills for creating and transferring it have been identified as central to firm advantage (Modi and Mabert 2007; Nahapiet and Ghoshal 1998). This knowledge management involves the ability to process information, usually through social interactions, changing the firm's range of potential behaviors to a wider set of actionable options. In a value chain, the way knowledge is transferred and internalized through procedures and practices is important for performance by ensuring successful client-oriented experiences (Modi and Mabert 2007). In a network of individuals from different firms, inter-organizational knowledge transfer results from acquiring a partner's existing knowledge or by creating new knowledge collaboratively.

Islamic Faith and Halal

Muslims are a fast growing religious group in the world today with potential to reach more than 2 billion people by 2030 (van Waardenand and van Dalen 2013). Demand from Muslim

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consumers is expected to grow rapidly, especially in non-Middle Eastern regions such as Western Europe and Asia (Ayyub, Rana, Bagi, and Al-Thomaly 2013; Lever and Miele 2012). Many followers include Halal certification as a buying criterion. Halal refers to that which is permissible according to the Islamic law (Zainalabidin, Golnaz, and Mad 2011). A Halal certification guarantees that a number of "must do" activities were observed to declare the meat is Halal, involving production, manufacture, transportation, and commercialization processes. A network of religious leaders, auditors, plant supervisors, laboratory analysts, and chemical technicians work in consonance with a common religious drive (Xu, Cai, Chui, Ye, and Yu 2012). After a careful examination of what is done, how it is done, and by whom, a product may be labeled as permissible to Islam customs. Agribusiness firms interested in expanding to Muslim markets may find it difficult to obtain a Halal certification as it demands specific religious processes and knowledge management. Costs can be higher due to more strict rules and procedures. However, these markets are often willing to pay more for Halal products (Verbeke, Rutsaert, Bonne, and Vermeir 2013).

Methodology

The main objective of this research is to describe a business network driven by Muslim precepts with the aim of understanding the characteristics of a religiously based food network. It involves questions related to social networks, knowledge transfer, and religiosity (represented by the Islamic faith), such as: (i) Do Muslim and non-Muslim actors play different roles in the value chain? (ii) How are trust and commitment built into this network? (iii) How is this religious knowledge transferred? Is faith a facilitator or a blocker? (iv) What are the challenges for Halal-based networks and how are these met?

A qualitative case study was conducted to suit the descriptive nature of the study and used open-ended questions to elicit an understanding of the decision-making process (Eisenhardt 1989; Halinen and Törnroos 2005). This technique provided opportunities to access this network and reveal its peculiarities by capturing the reality from “someone internal” to the phenomenon (Yin 2009). Qualitative research is also expected to better capture the meanings hidden in rules, routines, and practices, which is necessary in a phenomenon closely tied to religious precepts, where actions have an additional dimension to the usual business management interpretations. Activities were fulfilled from March 2013 to June 2014 with participants from the Brazilian Halal poultry network. The researcher individually interacted with the participants in a neutral, uncontrolled environment. These interactions involved: twenty-nine interviews with key actors (e.g., Islamic Centers); thirty-nine reports and institutional documents from associations (e.g. 2012 Brazilian Poultry Magazine); sixteen Halal documents (e.g., expedited certificate); two visits to slaughterhouses in the South and Southeast regions of the country. Pictures and other identification information were not disclosed; one non-participant observation on a mission to a Mexican firm (e.g., field journal page).

Events were observed through the conceptual lens of social networks, knowledge transfer, and religiosity, which oriented data selection and analysis based on the information that was freely disclosed by the Halal network actors during the trip. Questions were asked as the phenomenon unfolded and not as *a priori*. Data was interpreted through discourse analysis, building meaning through stories, narratives, and dialog (Bardin 1977; Denzin and Lincoln 2005). Critical events

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related by the actors were recorded to convert this tacit information into more explicit knowledge. To construct meaning, the researchers observed how meaning was grounded in the actors' discourse (Ryan 1999; van der Spiegel, van der Fels-Klerx, Sterrenburg, van Ruth, and vanDijik 1997).

Results: The Brazilian Halal Business Network

Brazil has a prominent role as a food exporter, e.g., being the world's major broiler meat exporter (Figure 1). About 44% of this volume is Halal-labeled (MDIC 2014), a substantial mark achieved from a series of businesses in a well-organized network. This network emerged around the 1980's in response to demand on the Brazilian poultry exporters to slaughter chickens under Islamic religious precepts for the growing Middle East Halal market.

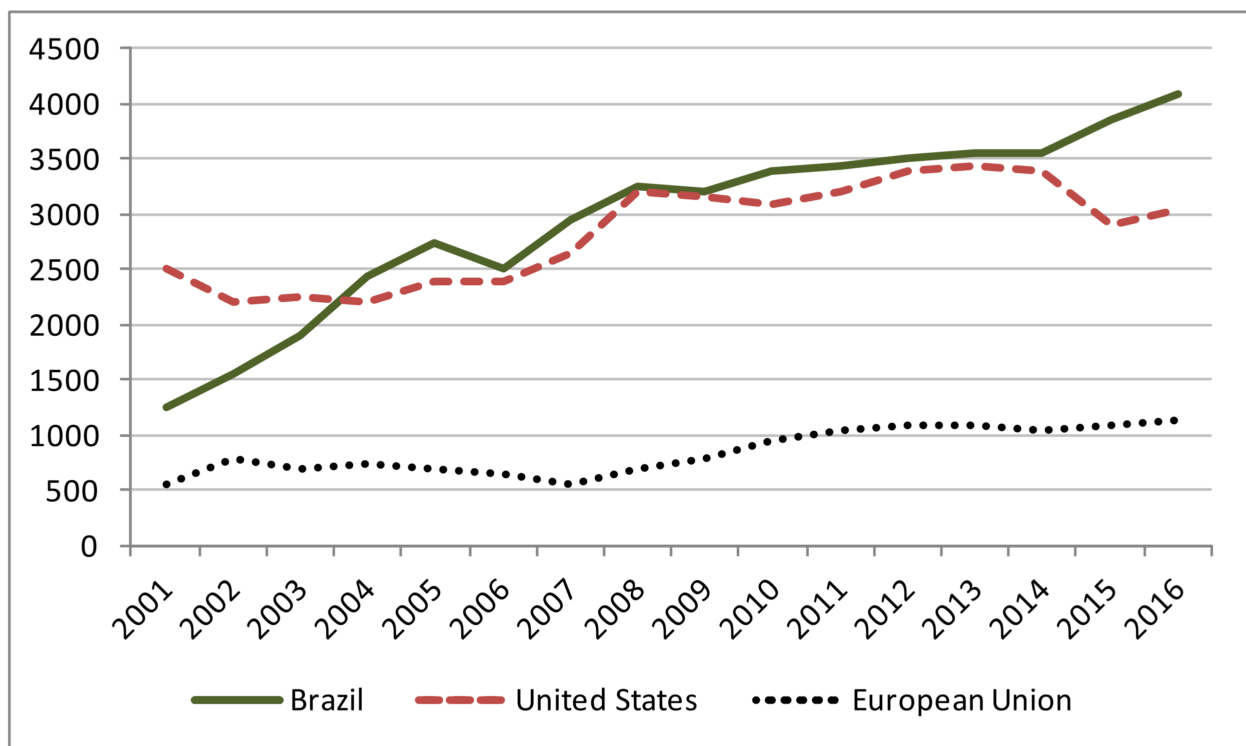

Figure 1. Major broiler meat exporters estimates 2001–2016 (USDA 2016).

This network became especially active in the last decade and involves chicken poultry producers (e.g., BRazilFoods), chambers of commerce (e.g., CCIBI - Brasil Iraq Chamber of Industry and Commerce), government representatives (e.g., APEX - National Agency for Promotion of Exports and Investments), national associations (e.g., ABPA - Brazilian Association of Poultry Producers), and Islamic Centers (e.g., CDIAL - Latin American Promotion Center of the Islam), with these last groups responsible for Halal certification for exported products. The network is mostly informal and horizontal, with no actor in full control of events. Although producers have economic influence (e.g., BRazilFoods had a total income of around US$10 billion in 2014), they do not stand alone. Chambers of commerce support negotiations with export markets, being able to direct actions:

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> *We do studies, research, fairs, and invite the slaughterhouses. We accompany the buyer, introduce buyers to the exporters […] When delegations come from abroad […] the chamber accompanies them, offers support with translations. [...]We try to serve as a link with the embassy, so we can solve those problems. We have joint actions with the Ministry of Agriculture; what interests us is seeing reliable Brazilian Halal chicken in the Middle Eastern countries. (Chambers of Commerce)*

The government may block participants that do not comply with regulations, e.g., enforcing sanitary normative and influencing commerce through its ambassadors:

> *All Embassies work closely with the producers, exporters and associations in Brazil for this end. We are […] official facilitators (Brazilian Embassy)*

> *The Ministry of Agriculture also acts outside of the slaughterhouse [...] in the making of rations, in the aviaries, regulating the way they make the chicken's ration and the way the chicken is raised (Chamber of Commerce)*

In the international Halal market, Brazilian companies and bureaus seems to have a competitive edge through these inter-organizational exchanges. Brazil openly abridged Arab immigrants in the twentieth century (e.g., Syrians and Turkish) and coexistence with diverse cultures and cults—from European Catholicism, African Umbanda, Japanese Shinto, and Middle East Judaism—is encouraged. Brazilians offer little resistance to foreign habits and procedures, accepting others' ways with a little constraint. The first Islamic-oriented bureaus were established there by immigrants around the 1970's, building a robust network to guarantee that religious requirements were fully respected and promoting the country to a first-mover position in food exports (especially poultry) to the Middle East. In a context governed by beliefs and dogma, the Brazilian Halal network assigned specific roles, built trust and commitment, and transferred knowledge through its actors, thus overcoming a series of challenges.

(i) Do Muslim and non-Muslim actors play different roles in the value chain?

Islamic Centers also block participants by denying certifications to those that do not follow strict Halal rules. These rules determine explicit roles in the value chain for Muslim and non-Muslim actors. As an example, the slaughter process is performed by a practicing Muslim, hired by the Islamic Center, working inside the producer facility. This is a *sine qua non* condition for certification. Non-Muslims may participate in other phases of the production process such as receiving livestock, preparing it for the slaughter, adjusting equipment, processing poultry, packing, and transporting it to export consolidation centers. However, the slaughter must be done by a Muslim and facilities must have the necessary infrastructure for them such as an appropriate area for daily prayers. Most Muslims employed by Islamic Centers are originally from Middle Eastern countries such as Iraq and Syria. This practice serves to guarantee that not only procedures, but above all, the will of God, will be respected during the critical phases of the process. As the responsibility relies on the Islamic Centers, they work diligently to maintain their reputation. Formed in their majority by Middle East immigrants who moved to Brazil in the twentieth century, Islamic Centers are central to the legitimization of the whole process. They act as local beacons to Islamic followers, with the Shah (religious authority), offering spiritual

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guidance. As a by-product, they legislate on Halal issues and lend their reputations to the certification process. However, their professed duty is to contribute to a better understanding of the Islamic faith. Transferring knowledge—be it religious values or technical procedures—is considered a privilege, resulting in direct (employment) and indirect (investment in social events) benefits to the Islamic community.

(ii) How are trust and commitment built into this network?

Common religious backgrounds play an important part. Spreading Islam is a central activity to Muslims, one which must be above all others. Islamic Centers do not compete openly with each other. They collaborate, even helping competitors. Cooperation comes easily, especially internationally:

> *There is a professional ethics in the world of the Halal certifiers, what we call borderline ethics […] We have a certain respect, to not cross borders and to not get in other people's way. […] I've done some work in some countries, Uruguay; I've been helping out people in Argentina, Malaysia, etc. […] (Islamic Center).*

The chambers of commerce, formed in their majority by immigrants from Middle Eastern Muslim countries, help connect producers, Islamic Centers, and government agencies with potential clients, usually from their motherland (e.g., Saudi Arabia). Islamic Centers do not see one another as "enemies" as they are created for the same purpose: to practice their religion, to provide teachings for children and adults, and to connect participants with their religion, consequently spreading the Islam. To foster distrust among each other would be harmful to the business network that they are all part of. There is respect for both the acting boundaries as well as a disposition to help:

> *He is my competition [another Islamic Center], and I'm helping out a competitor, I know this (Islamic Center).*

Cooperation is achieved as it benefits the network. A trusted *Halal* product favors a higher market share in Muslim countries, which results in more future invoices that will need a certificate, promoting a virtuous cycle. How does someone build the trust to be accepted into the network? Potentially any firm may participate as long as it follows Islamic precepts correctly. However, given the huge number of chicken slaughterhouses in Brazil (in the thousands), forming a reliable network is necessary to build trust. The presence of too many certification emitters could prove harmful, leading to a myriad of interpretations of the Quran, eventually influenced by a specific firm interest. Because there are few internationally recognized Islamic Centers in Brazil, there is enhanced trust that the food is produced in accordance with strict Halal procedures. It is clear who is in charge of religious guidance, increasing trust. In an informal conversation, the Director of an Islamic Center reported that once a relevant poultry producer attempted to bypass the center and planned their own structure for Halal slaughter and certification. The initiative was halted after the firm realized that it would not be able to legitimize its process. Also, the majority of producers are represented by a centralized nationwide association:

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> *There are divided sectors, I don't want to name them, but there are many. [name excluded], for example, is one case. There are one hundred associations, so the government doesn't know who to speak to. But when the government talks to me, for example, about exports, he knows that I represent 97% to 98% of the Brazilian chicken exporters. When he comes to me and says there is a registration problem, I talk to 97% of the people that export, so this has a lot to do with the synergy between the private sector, through these strong associations, and the government perceiving this "associative" model (ABPA).*

(iii) How is this religious knowledge transferred? Is faith a facilitator or blocker?

Centralization fosters homogenous interpretation. With few certifiers Halal customers' needs can be quickly embedded, enhancing trust. Knowledge transfer is practically immediate. To assert that this is done is of utmost importance to establish a solid relationship with the Islamic Centers, i.e., with the local religious authority, thereby according to reputation and legitimize participation. Knowledge transfer is therefore mediated by the Islamic Centers, which have the legitimacy to interpret Muslim precepts. Explicit knowledge of the Halal process is widely documented and freely available on websites, but its enactment is tacit and involves a deep commitment to religion:

> *It's teaching. The people that don't profess the Islamic religion (…) don't know their details, so the Islamic Centers (…) also take care of the certification of Halal slaughter and have a fundamental part in it, in saying: look, this is licit, this is illicit; if you want to sell in my country, this is how it's produced and accepted by the Muslim community (Islamic Center).*

The transfer of this knowledge is not a purely rational, planned process. It comprises both tacit and explicit knowledge. Explicit knowledge comes from widely known Halal regulations, subject to certification upon inspection. However, interpretations may vary. To many Sunni religious leaders, it suffices that the prayer "Allah is great" is said, irrespective if by a human being or by a machine with a recorded voice. To Shi'a followers, the prayer must be offered by a Muslim, present at the time and repeated for each animal slaughtered. The Islamic Centers accumulate a number of experiences in shared narratives, transferred to both Muslim and non-Muslim workers - these stories help determine what to do. Also, stages critical to the religious precepts must work as a separate, independent part. The less the company disputes an issue with the Islamic Center technician, abiding promptly to his religious directives, the faster it will have the batch certified. What is paramount is that technicians share questions and interpretations with religious authorities, participate in training sessions and discussions, and pass on experiences and lessons learned. When an unexpected event occurs, it is not uncommon for production to stop while a call is placed immediately to the highest religious authority from the Islamic Center. Every new technology, process, and change must be approved by the religious authority to maintain the Halal certificate. The Quran does not have specific answers to all modern questions (e.g., if transgenic soy beans are Halal); therefore, interpretation is needed. The Islamic Centers provide answers based not only on their knowledge of the Quran, but also based on international communities of practice that are periodically consulted, as processes and initiatives are discussed with the highest religious authorities.

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(iv) What are the challenges for of the Halal-based networks and how are these met?

Following Islamic precepts is not difficult; however, to be perceived as a follower of Islamic precepts is a great challenge. Social connections, active government participation, historical and immigration ties provide an important part of the answer. Recent events (e.g., 9/11) led to a mutual sentiment of distrust, explaining part of the declining exports of poultry from the U.S. to Muslim markets. Centralization and coordinated actions, such as those promoted by the ABPA, help harmonize network players:

> *[We] have this, a single position, teaching everyone how to produce [to the Muslim world]. If you go to the International Agriculture Fair, held last week, you'll see the network united, from the genetics to the salesman, passing through equipments [sic], laboratories, vaccines, through everything. That has helps [sic]a lot (ABPA).*

Brazilian Halal poultry producers must accept the external slaughter agent and his decisions. Success in certification depends mostly on the firm's propensity to create the proper conditions for the work of the Muslim technician responsible for slaughter:

> *The employees that usually do the bleeding, supervision, auditing, they are Muslims. They are already hired by the Islamic Center, they have no bond to the producer, to the slaughterhouse. They are not employees of the company they are working directly with […]. [The firm] has to provide offices [...] and one praying room [to them] (Islamic Center).*

Discussion

The Brazilian poultry Halal network is formed by a complex social array (Fombrun 1982; Powell and Smith-Doerr 1994) that includes Muslims and non-Muslims alike. Although its economic drivers are strong, there is evidence of a concern for other social objectives (Granovetter 1985) such as the dissemination of the Islam and the strengthening of the Muslim community and customs. Producers adapt themselves to foreign social rules and beliefs, modifying installations and procedures if they are to participate in this market (Nohria 1992), driven to a great extent by religious precepts (Traunmüller 2010). Participants act according to rules that regulate the network (Verschoore & Balestrin 2008) as trust is strongly governed by the Islamic Centers. The network is committed to every value-adding activity since mishandling by any link of the chain may compromise the reputation of the system. This reputation is strongly based on social obligations (Ruyter & Semeijn 2002); incurring an error is interpreted as not acting according to Muslim rules and beliefs. The expressive growth of this social network, based on trust and commitment, is evidence that coordinated actions oriented toward common goals result in mutual benefits and improved performance (Sako 1998). The social component of the network is decisive since different interpretations occur as to what constitutes a Halal product (Lever & Miele 2012). Without a completely clear standard, there is a barrier to entrants due to interpretation. Knowledge is not totally explicit (Polanyi 1966); i.e., knowing the rules and procedures is not enough to build trust. The tacit component, with its ideals, values, and emotions (Takeuchi 2001) plays a significant part, with decisions being taken by the religious authority and then transferred as knowledge through the network. This knowledge transfer is subject to the specific governance of the Islamic Centers (Grant 1996). Their predominance in

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knowledge selection, interpretation, and integration, given their identification and proximity to the Muslim customers, result in a central firm advantage (Modi & Mabert 2007; Nahapiet and Ghoshal 1998).

Conclusions

This research described a Brazilian poultry export social network driven by Halal precepts. The network involves Muslims and non-Muslims alike abiding to Islamic religious procedures and rules. Trust, commitment, and knowledge transfer in a religious centered network were observed, specially from the Islamic Centers, which offer spiritual and practical guidance. The implications of this research include the importance that religious precepts may have for international business networks (e.g., shaping operations) and confirmation that knowledge transfer theories explain situations where religious precepts play a central role. Assimilating these implications may contribute to better business network management for food producers. Recommendations for future research include describing networks for other products (e.g., meat), for other religious regulations (e.g., Kosher), and in other countries (e.g., Australia) to better comprehend how religious precepts influence food value chains.

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