



Knowledge Sharing in Catholic Organizations: A Fuzzy–Set Qualitative Comparative Analysis

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ABSTRACT

This study examines knowledge sharing in Catholic organizations. The authors adopt Schein's organizational culture theory that facilitates, or inhibits, knowledge sharing in organizations. Thus, they address the phenomenon at the three levels: the artifacts, the norms and values, and the underlying assumptions. Considering the chosen settings, they study the contributions of individuals having taken vows, the organizational rituals, the significance, and the sense of community perceived by the organizational members. Data were gathered using a survey and were analyzed by using a fuzzy-set qualitative comparative analysis. The study provides the causal configurations of conditions that lead to tacit, explicit, and total knowledge sharing. They also offer the causal configurations of conditions that lead to the absence of each kind of knowledge sharing. Given that the qualitative results cannot be generalized, the study can still be replicated in organizations without restrictions.

KEYWORDS

Catholic Organizations, Fuzzy-Set Qualitative Comparative Analysis, Knowledge Sharing, Organizational Culture Theory

INTRODUCTION

Religious organizations need to define and implement their goals to clarify the roles of clergy and laity, to facilitate change, and to manage the relationships between congregations (religious institutions) and denominations (subgroups within religion) (Harris 1998). Religious organizations have stakeholders, structures, and strategies that involve people, processes, and technology. Similar to profitable organizations, they are open systems dependent on external resources (Miller 2006) that enables businesses to adopt religious aspects (sacralization) and religious organizations to adopt business aspects (secularization) (Miller 2006). These open systems make distinguishing between the business and religious aspects of organizations difficult. Thus, both religious and non-religious organizations share characteristics that make both equally suitable places to study the management

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of intangible resources (Miller 2006). Miller (2002) defines religious organizations as “social businesses whose main purpose is to create, maintain and exchange compensators (rewards) based on the supernatural”; that is, the main resource of this type of organization does not have an assigned material value. Nevertheless, the reluctance to recognize the importance of management processes in religious organizations means that few studies address this issue (Crittenden et al. 1988).

The study of religious organizations is an underdeveloped area within the sociology of religion, specifically, management research does not yet offer a comprehensive theory for religious organizations (Miller 2006), but it contributes to better understand common phenomenon to all organizations (e.g., Zech 2015). The research on the social and organizational aspects of religion in no way threatens the study of the religious and spiritual aspects of organizations in general. Thus, we may apply different theoretical perspectives regarding the study of management in religious organizations (Weston 2000).

The study of religious organizations has increased over the years (Miller 2002), particularly the research on factors common to other organizations, such as resources and strategies (Miller 2002). Topics such as organizational renewal, the creation of rival organizations by deserters, and the management of alliances are common to both religious leaders and managers. However, there is little preparation by religious organizations’ leaders to deal with strategic management issues (Crittenden et al. 1988) that make them unable to respond to an ever-changing environment. This failure has led to declines in funding, status, and membership with few organizations being able to adopt or adapt to new strategies and goals.

This study applies the theory of organizational culture (Schein 1988; 2010) to religious organizations to study knowledge sharing. The main objective and purpose for this work is to identify the contribution of organizational culture to knowledge sharing in religious organizations. The study of religious organizations may challenge current assumptions and models by applying: a) the theories of religion of nonreligious organizations, and b) the management theories of religious organizations (Miller 2006). Thus, we propose the following research question: “How does knowledge sharing occur in religious organizations in light of the theory of organizational culture?”. The remainder of this manuscript is structured as follows: The next section shows a review of literature on knowledge and knowledge sharing; Schein’s organizational culture theory and Catholic organizations. The following section describes the methodological procedures adopted in this study regarding data collecting, analysis and obtained results; the final section reports the limitations and future research.

LITERATURE REVIEW

Knowledge and Knowledge Sharing

Today’s economic, social, and cultural contexts are characterized by a high level of globalization that gives rise to more and more knowledge-based economies (Omotayo 2015; Barley et al. 2018). This enhancement of knowledge as the primary and guiding resource of all organizations is recognized by the knowledge-based view of the firm (Curado & Bontis 2006). Thus, the study of how knowledge is managed at the organizational level is important. Knowledge encompasses a considerable set of definitions (Barley et al. 2018) such as knowledge is the “information present in the minds of individuals, personalized information related to facts, procedures, concepts, interpretations, ideas, observations and judgments” (Alavi & Leidner 2001).

There are two distinct types of knowledge, tacit knowledge has a personal connotation that makes it difficult to formalize and communicate and is “strongly rooted in the action, commitment and involvement of a specific context”; and explicit knowledge is the knowledge that is transmitted using a formal and systematic language. Tacit knowledge is abstract, personal and difficult to formalize, communicate and capture as it is related to the individual’s experiences, ideals, and values. Explicit knowledge is highly coded and easily transmitted in documents using explicit, formal, and systematic

language that involves coded data or manuals that are present in standardized processes (Dhanaraj et al. 2004, Seonghee and Boryung 2008).

Knowledge management consists of four phases: creation, storage, sharing, and use (Alavi & Leidner 2001; Omotayo 2015) supported by three pillars: people, processes, and technology (Curado et al. 2011). Knowledge creation involves the development of new knowledge or the reuse of existing knowledge; knowledge storage is when knowledge is validated and updated, can be used, disseminated and applied; knowledge sharing allows knowledge to reach the individuals who need it to develop their activities within the organization; and knowledge use is when individuals make use of it in order to obtain a certain result (Curado et al. 2011).

Although the study of knowledge management in its four distinct phases is important (Alavi & Leidner 2001; Omotayo 2015), the study of knowledge sharing is a critical process for the success of an organization (Van Den Hooff & Weenen 2004). The effectiveness of knowledge sharing in organizations is a significant factor for successful organizational management (Seonghee & Boryung 2008). There are several factors that influence knowledge sharing on an individual level: motivation, perceived power, reciprocity, trust, and rewards (Ipe 2003). When knowledge sharing does not happen, organizations may cease to be competitive and thus lose their business to the competition (Abdul-Jalal et al. 2013). Bock et al. (2005) emphasize the importance of knowledge sharing as the factor that contributes the most to ensuring competitive advantage. Knowledge sharing cannot be forced by others, and it has a reciprocal character (Murtaza et al. 2016).

Jones et al. (2006) refer to knowledge as a multifaceted concept regarding various organizational aspects, such as members, policies, documents, and organizational culture. Ajmal & Koskinen (2008) add by stating that organizational culture manifests itself in all aspects of the organization's life. Social ties in organizations support organizational culture and are close related to knowledge sharing. Dimensions of social identity (e.g., affective social identity) influence knowledge sharing behaviors (Kumi & Sabherwal 2019). Interpersonal trust is positively correlated with knowledge sharing (Wu et al. 2009; Curado & Vieira 2019). Individuals share their knowledge when they feel safe and don't perceive any potential loss of power due to knowledge sharing (Oliveira et al. 2019). Therefore, organizational culture influences knowledge sharing.

There is little literature on the concept of sharing in the specific context of religion. The current study focuses on knowledge sharing (for which literature is abundant) focusing on the phenomenon at religious organizations. According to Rigney, Matz & Abney, (2004), religion as a whole has a very rooted practice of sharing and giving to others, specifically the Catholic tradition has always focused on the values of compassion, care and volunteering, with "churches, ..., as principal organizers and trainers of volunteer activity". However, such principles are not exclusive to the Catholic religion, with Protestantism, Judaism and other religions also sharing such values.

Schein's Organizational Culture Theory

Organizational culture has an influence on knowledge management (Alavi et al. 2005) and may limit or facilitate the creation and sharing of knowledge within an organization (Ajmal & Koskinen 2008). According to Schein (1988; 2010), the concept of organizational culture relates to small groups, which are more homogeneous than societies or nations: "Culture is a property of groups, and can be thought of as the accumulated learning that a particular group has acquired during its history". Schein (1988; 2010) emphasizes the contribution of the learning process and characterizes the concept as: (1) A pattern of basic assumptions that are (2) invented, discovered, or developed by a particular group who (3) learns to deal with the problems of external adaptation and internal integration (4) that work well enough to be considered valid (5) and to be taught to new members; and (6) as the right way to understand, think, and feel about these problems. To explain organizational culture and its functioning, Schein (1988; 2010) divides it into three distinct levels: artifacts, norms and values, and underlying assumptions. This division aims to differentiate the degree to which each cultural phenomenon is visible to the observer: the higher the level, the lower the degree of visibility.

Artifacts are the ones that we observe, hear about, and feel as we enter a new organizational culture, and however clear those clues may be, they are difficult to decipher (except for those who already integrate the culture in question). It is a level that is easy to observe but difficult to understand because what one observes, hears, and feels can have a different meaning for those who are part of the culture in question, and for those who are not. Documenting this level from the outside involves identifying what happens underneath the visible reality of organizations. Examples of artifacts are the organization's adopted language, style (clothing or speech), myths and stories, and even rituals and ceremonies that are manifestations of culture but are not culture itself (Schein 1988; 2010).

Norms and values are at the level immediately below the artifacts and contain the shared objectives, ideals, norms, standards, moral principles, among other common premises. These aspects are most often found in the mission, vision, and values of organizations. According to Schein (1988; 2010), for something to fit in this level, there needs to be a transformation that goes from what the leader wants to a shared assumption. The leader's practice, or decision, becomes a shared value or belief when there is a generalized perception of success by the group. Ultimately, and if that norm or value proves to be reliable and with consistent positive results over time, it may become an underlying assumption. The norms and values influence behavior and allow the group to deal with uncertainty and are vital to the creation of knowledge (Ajmal & Koskinen 2008). Examples of norms and values are the shared organizational rules that govern behaviors such as the ethics or aesthetics adopted at the organization (Schein 1988; 2010).

The deepest level regards the underlying assumptions. It is the most rooted and difficult to analyze since the underlying assumptions reflect the degree of consensus that result from past experiences. Underlying assumptions are built over time and are based on a shared history of trust. Individuals need cognitive stability, so they do not feel comfortable challenging or questioning their basic assumptions often, which could result in anxiety and defensiveness. Considering the ever changing organizational environments, organizations often make mistakes because they fail to renew the member's basic assumptions. Assumptions influence behavioral patterns that predict future behaviors. Examples of underlying assumptions are the expectations and mental models of analysis that allows members to perceive and interpret the actions of others (Schein 1988; 2010). Organizational culture plays a fundamental role in all aspects of organizational daily life and is a key element in the existence (or absence) of knowledge creation and sharing within organizations (Ajmal & Koskinen 2008). Trust among individuals and trust on management support

Schein's Organizational Culture Theory and Catholic Organizations

The application of Schein's (1988) theory of organizational culture to religious organizations is uncommon and the studies that do it are quite dated and unhelpful (Harper & Schulte-Murray 1998). Oviedo's (2008) notable study addresses existing cultures and subcultures in a particular religious organization. Several theoretical fields are involved in the study of religion to understand its true dynamics and realities, that is, a multidisciplinary tendency in the study of religion is essential to better understand it (Miller 2006). Harper & Schulte-Murray (1998) further state that the study of organizational cultures is equally important to religious organizations. There are advantages in the study of organizational culture in religious organizations that due to their contingencies, allow us to understand certain aspects that would hardly be observed in other organizations (Miller 2006; Oviedo 2008).

Oviedo (2008) highlights the existence of various approaches to the study of religion, namely the organizational perspective. Organizational culture is a difficult variable to manage in studies of religious organizations, thus the studies that relate organizational culture to the religious sector are still few, and they are mostly focused on the micro and individual level (Harper & Schulte-Murray 1998). The religious organizations follow specific legislation and organizational codes and rules that influence organizational culture.

According to Cohen and Hill (2007) religious culture (or religion as a culture) varies depending on a particular factor: the type of religion. The authors propose that the religious cultures, although sharing common principles, will present several differences, where one can be more individualistic and other more collectivistic. When approaching the organizational culture theory (Schein, 2010), culture serves the purpose of identifying and gathering a group of people who share the same elements (visible and not visible). Culture in the religious sense has a very similar meaning: it identifies people who share aspects that make them part of a specific group. Cohen and Hill (2007) stress that in the religious culture case, aspects such as intrinsic and extrinsic religiosity take a very important part in the definition of the several existing cultures, meaning that for instance “Protestants are more individualistic than Catholics and (...) Jews.” (Cohen and Hill, 2007). Both the Organizational Culture Theory (Schein, 1990) and the Religious Culture(s) (Cohen and Hill, 2007) share several similarities and encompass a very simple premise: Culture (religious or organizational) exists to distinguish one group from another, it unites people with similar characteristics and allows the distinction of who belongs where.

Many organizations may use Catholic principles on matters of human dignity and common good in society. Yet, not all of them are Catholic organizations. The Catholic organizations respect the Catholic charities reflected in the Catholic community services they provide. They respect the dignity of the human person; the common good; the solidarity and the subsidiarity principles. However, they do this in a structured and deliberate way. They have a place in the Catholic universal structure and they know exactly where they stand, which patriarchy they formally belong to. They are part of a large family and their contribution adds to others in pursue of a world that cares for God’s creation and respects the poor and the vulnerable. Catholic organizations are based on solidarity, rights and responsibilities and esteem for life and dignity of the human person, dignity of work and rights of workers. They act as a true call to family, community and participation in religious routines and causes. They appeal the best in each other aiming for their commitment and dedication to Catholic principles.

There are typical practices and particular aspects that are familiar to members of religious organizations, such as vows. According to the Canonical Gospels (those accepted as legitimate by most Christian doctrines), there are three Evangelical Councils (vows) whose purpose is the attainment of perfection, namely the vows of chastity, poverty, and obedience (Grove 2016). The Catholic Church considers these vows to be non-binding in that they are not necessary for the attainment of eternal life but are actions that exceed what is defined by the Commandments (Grove 2016). The relationship between the individual and the Divinity is intense, the pact between both parties entails liability and indebtedness to the higher entity. Vows are institutional constructs that determine the relationship of a particular individual with God that is based on the sustainability of this relationship (Bodone 1990; Terzidou et al. 2018). We propose an operational definition: Vows are actions individuals take to guide their conducts in search of perfection while they bond and feel grateful to God.

Considering Schein’s (1988; 2010) theory of organizational culture as applied to Catholic organizations, we propose that artifacts are represented by rituals, that significance embodies the norms and values, and that the sense of community reflects the underlying assumptions.

Rituals are symbolic actions (Sered 1993), or forms of communication (Sosis 2004), whose results are not empirically evident. Langer (2009) states that rituals, religious or otherwise, “produce not just a simple emotion but a permanent attitude, (...) it is not an expression free of emotions, but a disciplined essay of right attitudes”. Additionally, Wolin & Bennett (1984) consider rituals as “repetitive and patterned interactions that are practiced in a variety of settings. Scenarios range from daily, routine activities to more stylized practices related to religious observation”. The gestures and actions involved in rituals usually represent historical events; desired events; or representations of people, gods, or things. In addition to these representations, rituals may also contain discourses or songs. Rituals are usually performed by an appropriate group of interpreters, not just one individual. These interpreters are in turn chosen, appointed, or elected according to established norms or rules. Rituals can elicit joy or sadness, humility, contrition, or triumph, (Scheffler 1997). The main purpose

of ritual practice is to affect thoughts or feelings that are performed for the purpose of, for example, causing change or affirming something. Rituals promote group cohesion by requiring members to engage in behavior that is too hard to tamper with (Sosis 2004).

Another characteristic of rituals is their repetition (Scheffler 1997), since individuals practice them at specific times or on special occasions in order to reinforce the idea that they convey (Sered 1993). When a ritual includes a symbolic and religious aspect, the behaviors portrayed in the ritual are associated with the values of the belief system (Fiese & Tomcho 2001). Additionally, rituals serve as tools for the preservation of relationships. Sosis (2004) describes religious rituals as capable of promoting cooperation and generating belief and commitment through the “sanctification” of dogmas whose observation is impossible. Lawson and McCauley (1993) define religious rituals as “cultural rituals where social agents with special qualities have predominant roles. These agents are considered special due to a connection with supernatural entities such as gods, spirits, and ancestors among others”. As an effective form of communication (Sosis 2004), religious rituals serve as a tool for maintaining belief in certain religious aspects. We propose an operational definition: Rituals are repetitive socially practiced acts revealing common group knowledge that symbolically sustains the ongoing relationships between individuals and religion.

Significance is a way of dealing with uncertainty (Schein 1988; 2010). According to Krause (2003) significance is the “process of looking at religion in an effort to find purpose in life, a sense of direction in life, and a sense that there is a reason for one’s existence”. It is associated with subjective well-being. If finding meaning in life is the basic goal of human existence, and if religion helps individuals find such meaning (religious significance), then it can be associated with greater subjective well-being (Krause 2003). Berger (2011) states that throughout life there are painful and impossible situations that religion helps to deal with through theodicy. Theodicy is a religious way of seeing the world that explains situations such as death by justifying its existence through a higher purpose that gives it meaning.

The main difference between meaning (on general) and religious significance is that general meaning can come from various sources, such as personal relationships, work, hobbies, or religion. However, significance comes only from one source: religion (Reker 2000). Subjective well-being is measured through three assumptions, life satisfaction, self-esteem, and optimism, and significance is related to each of these aspects. One of the fundamental roles of religion is to explain the adversity and challenges that arise throughout life; however, the role of religion goes beyond that by helping individuals to see macro reasons in difficult situations that are beyond immediate concerns, that is, it helps to see the general meaning of things (Krause 2003). When this happens, and individuals grow in adversity, there is a source of satisfaction in life. On the other hand, if individuals believe that God has a purpose and plan for their lives, it means that God cares and loves them, which increases self-esteem. Finally, if there is a belief that God has created a life plan for individuals, they will live with greater optimism. The greater the religious significance, the greater the satisfaction in life, self-esteem, and optimism. We propose an operational definition: Significance is a personal valuation of the religious meaning of well-being that supports individuals in life while being a source of satisfaction.

Sense of community arose with human civilization (or even earlier) as a primitive concept whose definitions have changed over time (Etzioni 2014). Many critics of this concept consider it to be quite sensitive. They claim that it should be abandoned, while others argue that it is a concept with various meanings. According to Crow (2011), the sense of community, despite being difficult to define and operationalize, involves a set of people who have something in common. The most conventional approach is related to the sharing of a certain geographical area, a common “site” or “place”. However, there is an axiom in urban sociology, since modern city spaces can be considered as anonymous and impersonal, they break with the conventional idea of community. Thus, other approaches to the concept of community emerge, namely the definition based on a sharing of common interests or identities and, consequently, the existence of several types of communities, such as ethnic, professional, or confessional (religious). Academic communities are also an example of a community

that while not sharing a common geographical location, has common working links. Similarly, there are religious communities that prove that for a community to exist there is no need for a common place for all members (Crow 2011; Etzioni 2014).

Regardless of whether a community is based on common residence, common interests, common identity, common activities, or a combination of these factors, members' relationships are unique. Communities exist and operate by distinguishing who belongs and who does not and contain a great sense of loyalty and mutual responsibility (Crow 2011; Etzioni 2014). The unique nature of the communities and the specificities of each one make them hard to access for those who do not belong to them. Thus, the entry and confidence-building negotiation processes can be slow and long (Etzioni 2014). From a religious standpoint, the concept of community has a central place in the great religious traditions, from Judaism (God relates to the community and not to the individual) to Christianity ("God's People" is a community), and to Islam ("Ummah" are communities whose members are God's trusted people). For a community to exist, its members must have two distinct characteristics: (1) a network of mutually reinforcing relationships of affection, and (2) a commitment to a set of shared values, norms, and meanings as well as a shared history and identity—in short, the sharing of a culture (Etzioni 2014). We propose an operational definition: Sense of community regards the identification that individuals associate to sharing the same interests and values and thus supporting each other unconditionally.

METHODS

In this study we develop an exploratory research by using a fuzzy-set qualitative comparative analysis (fsQCA) (Ragin 2009). This method is best-suited for working with small samples (Rihoux & Ragin 2008) and it has been recently used in studies on nonprofitable organizations (Li 2018; Wang & Kwek 2018). We used this technique to understand the functioning of a concrete and specific complex reality (Ragin 2009), which means that the results obtained cannot be generalized and are valid only for the sample under study. We prepared the data by calibrating the dataset reflecting the qualitative differences making use external standards such as the investigator's theoretical and substantive knowledge (Emmenegger et al. 2014). According to Fiss (2011), this technique is particularly suitable for analyzing high levels of complexity that accepts equifinality, alternative combinations of causal conditions, and asymmetry that when applied to the present case means: a) more than one combination (or configuration) of causal conditions that lead to knowledge sharing, b) alternative causal configurations can lead to knowledge sharing, and c) the causal conditions for knowledge sharing may differ from the causal conditions for its absence. Such characteristics are an improvement over traditional quantitative statistical methods that only provide a single estimated solution to the dependent variable (Rihoux & Ragin 2009).

DATA COLLECTION

We adopted a survey to collect data and validated constructs from the literature and Likert scales (with options ranging from 1 – completely disagree to 5 – completely agree) to measure them: Rituals (A sequence of activities performed according to a set sequence following the laws and traditions of a community) was measured using a scale of 3 items from Cohen and Hill (2007); Significance (The belief that there is meaning in the performed tasks and activities) was measured using a scale of 4 items from Lynn et al. (2009); Sense of Community (The perception of belonging to a group, involving concern for others and mutual help) was measured using a scale of 3 items from Lynn et al. (2009); Knowledge Sharing (The perception about the existence of knowledge sharing in the organization) was measured using a scale of 5 items from Huang (2009).

The questionnaires were distributed among the members of the religious organizations participating in the study and collected after one to two weeks depending on the organization. We

were able to collect 73 complete questionnaires from a pre-established sample of organizational members that the organizational leaders indicated, since fsQCA does not require an aleatory or representative sample.

Characterization of Organizations in the Study

We would like to note that although we mention “Catholic organizations” as our area of focus, we are really focusing on a non-central component to the global Catholic organization, which is more fully represented by parishes/local churches and the Vatican and its associated entities. We are working with religious organizations that are built around Catholic principles, yet we are not researching quintessential aspects of what theology may consider a “Catholic organization”. This study involves three religious institutions located in buildings and structures in Cova da Iria, in the civil parish of Fátima in the municipality of Ourém in Portugal: The Sanctuary of Our Lady of Fátima (SOLF), the Saint Nuno’s House Hotel (SNHH), and the Divine Word Seminary (DWS). The first two have their

Table 1. Participants in the study

Characteristics	Total % of participants	SOLF % of participants	SNHH % of participants	DWS % of participants
Age (years)				
≤25	5.5%	5.8%	6.3%	0%
>25 and ≤35	24.7%	31.4%	12.5%	0%
>35 and ≤45	23.3%	27.5%	18.7%	0%
>45 and ≤55	26%	27.5%	25%	16.7%
>55	20.5%	7.8%	37.5%	83.3%
Gender				
Male	47.9%	51%	18.7%	100%
Female	52.1%	49%	81.3%	0%
Tenure (years)				
≤5	42.4%	51%	31.3%	0%
>5 and ≤15	26%	35.3%	6.2%	0%
>15 and ≤30	15.1%	7.8%	37.5%	16.7%
>30 and ≤45	11%	5.9%	25%	16.6%
>45	5.5%	0%	0%	66.7%
Education				
Elementary school	11%	0%	50%	0%
High school	24.6%	27.5%	25%	0%
Graduation	64.4%	72.5%	25%	100%
Vows				
No vow	83.6%	90.2%	93.7%	0%
One vow	1.4%	2%	0%	0%
Two vows	0%	0%	0%	0%
Three vows	15%	7.8%	6.3%	100%
Number of participants	100%	79.9%	21.9%	8.2%

origins in the apparitions of Our Lady of Fátima to three young shepherds in 1917. The last one, the Divine Word Seminary, dates back to the nineteenth century and was created by Arnaldo Janssen with the mission to educate missionaries for the Catholic Church that led to the creation of the Divine Word Missionaries in 1875. Table 1 presents the characterization of the participants in the study.

The Sanctuary of Our Lady of the Rosary of Fatima has its origin in 1917, the year in which the apparitions of Our Lady of Fátima appeared to the three young shepherds giving rise to the creation of a place of worship and prayer in the Cova da Iria. The SOLF began its activity in 1919 with the construction of the Chapel of the Apparitions, followed by countless expansions till the most recent one: the construction of the Holy Trinity Basilica that was inaugurated in 2007. The SOLF is a non-profit, exclusively religious, public canonical legal entity that is exempt from parish jurisdiction and is classified as a national Catholic Sanctuary. It consists of nine departments and the Sanctuary Museum of Fatima. The mission of this institution is to “lead the human being to the recognition and worship of the Holy, One and Triune God”, and its organizational composition involves both clergy and lay people.

Saint Nuno’s House Hotel was established by Kiliano Lynch, Reverend Father General of the Carmelites in 1957 to welcome people and institutions that would like to retreat there. He founded the House at the request of Sister Lucia (one of the three shepherds) to revive the old devotion to Our Lady of Carmel. In 2010, the House was transformed into a Hotel after extensive work. This organization comprises 30 members, both clerics and lay people, who carry out the mission of the House to welcome those seeking a retreat.

Father Arnaldo Janssen founded the Congregation of the Divine Word in 1875 to pursue the mission of educating future missionaries in the Netherlands. In Portugal, the first DWS was established in Tortosendo in 1949, and the arrival of the DWS to Fátima occurred in 1953. The DWS shares the same mission as SNHH. The DWS aims to answer requests for the accommodation of pilgrims and groups in retreat or seeking education and training. The DWS gives economic support to the missions of the Divine Word Congregation. In order to serve this purpose, the Divine Word Congregation owns two hotels in the city of Fátima: the Divine Word House and the Steyler Fátima Hotel. The DWS of Fátima is composed of ten priests.

Data Analysis and Results

Table 2 presents the descriptive statistics of the variables for the entire sample as well as the correlation matrix. Rituals present the lowest scores in the mean values, not correlating to any of the other variables. Significance and sense of community are strongly and significantly correlated. Knowledge sharing presents the highest scores in the mean values and it is correlated to significance and sense of community.

Table 2. Descriptive statistics and correlation matrix

	Mean[PUB-1541] [PUB-512]		Std. Deviation	Rituals	Significance	Sense of Community	Knowledge Sharing
Rituals	3,307,359		,7831676	1			
Significance	4,050,866		,6236324	,009	1		
Sense of Community	3,476,190		,6784670	,065	,567**	1	
Knowledge Sharing	4,170,130		,5416993	,154	,271*	,316**	1

Calibration

In order to be able to apply fsQCA, the data must go through a calibration process whose main objective is to convert it into values that range from zero to one (zero corresponds to non-belonging to a group and one corresponds to belonging) (Ragin 2009). The calibration process should be based on the investigator's theoretical and substantive knowledge (Ragin 2009; Rihoux & Ragin 2008). Data were calibrated based on the researcher's definition of the three anchors that structure the data, total belonging, total non-belonging, and maximum ambiguity (Fiss 2011), that correspond to a direct method (Ragin 2009). The data were therefore transformed to present different degrees of association, from full inclusion to total exclusion. However, the calibration was performed for two different variable types, variables in categories (votes) and the variables measured on the Likert scale (rituals, significance, sense of community, total knowledge sharing, explicit knowledge sharing and tacit knowledge sharing) that demonstrate the possibility of calibrating different types of variables.

Categorical variables are acceptable for fsQCA use, each category must be associated with a meaningful group, requiring a theoretical and empirical knowledge of the variables (Ragin 2005, 2008). Transforming Likert scale datasets into fuzzy sets is possible by calculating the average values (Woodside et al. 2011) of each latent variable's items. As advised by Ragin (2009), the conditions were calibrated manually according to the literature review (Table 3). The conditions in this study are the presented variables: vows, significance, sense of community and knowledge sharing. The outcomes regard knowledge sharing. We have considered explicit knowledge sharing and tacit knowledge sharing that are measured by sub-scales of the knowledge sharing construct.

Table 3. Descriptive statistics and calibration of the conditions and the outcomes

Conditions and Outcomes	Descriptive statistics (n=73)	Calibration
Vows	0 – 83.6% 1 – 1.4% 2 – 0.0% 3 – 15%	None = 0 1 vow = 0.333 2 vows = 0.666 3 vows = 1
Rituals	$\mu = 3.31$; $\sigma = 0.78$; min= 1; max = 4.67	(4.5; 3.5; 1.5)*
Significance	$\mu = 4.05$; $\sigma = 0.61$; min= 2.5; max = 5	(4.8; 4.5; 3.4)*
Sense of Community	$\mu = 3.48$; $\sigma = 0.69$; min= 1.67; max = 5	(4.8; 3.5; 2.5)*
Total Knowledge Sharing	$\mu = 4.17$; $\sigma = 0.54$; min= 2.6; max = 5	(4.9; 4.1; 3.5)*
Explicit Knowledge Sharing	$\mu = 3.99$; $\sigma = 0.65$; min= 2; max = 5	(4.75; 4.3; 3.75)*
Tacit Knowledge Sharing	$\mu = 4.27$; $\sigma = 0.54$; min= 3; max = 5	(4.75; 4.2; 4)*

μ = Mean; σ = Standard Deviation; min = Minimum; max = Maximum.

*Cut-off values: 0.95; 0.50; 0.05

Fuzzy-Set Qualitative Comparative Analysis

We run the fuzzy-set qualitative comparative analysis with fsQCA software and following the best practices we report the intermediate solutions that lead to the outcomes and their absences (represented by adding a “~” before the outcome) (Fiss 2007, Ragin 2008, Schneider & Wagemann 2010, Mas-Verdú et al. 2015). The solutions and the configurations are assessed by their levels of consistency and coverage. Consistency means significance — the existence of multiple configurations of conditions that are useful in predicting the scores of a given outcome (Wang et al. 2016). It reflects the extent to which the cases share a given combination of conditions that lead to the outcome in question and should respect the threshold of 0.75 (Ragin 2008; Ragin 2009; Woodside & Zhang 2013). Coverage means strength — it reflects how much of the variation in the outcome is accounted for by a causal

condition or combination (Ragin 2006), which is similar to the R^2 in linear regressions (Fiss et al. 2013). The research defines the limits for configurations of coverage as 0.25 to 0.90 (Ragin 2008; Woodside & Zhang 2013). Woodside & Zhang (2013) stress the importance of achieving high consistency over high coverage. All the solutions and configurations meet the consistency and the coverage thresholds.

Tables 4, 5 and 6 present the configurations leading to the presence and absence of the outcomes in this study. Regarding total knowledge sharing, the solution presents six alternative causal configurations. The solution for the absence of total knowledge sharing only offers two causal configurations.

Table 4. Configurations for total knowledge sharing and for the absence of total knowledge sharing

Total knowledge sharing = f (Vows, Rituals, Significance, Sense of community)					Coverage		Consistency
Configurations	Vows	Rituals	Significance	Sense of Community	Raw	Unique	
1	●		●	○	0,34	0,04	0,75
2	●		○	●	0,28	0,02	0,84
3	○		○	○	0,13	0,04	0,83
4	●	○		○	0,39	0,00	0,84
5	●	○	○		0,31	0,00	0,88
6		○	○	○	0,34	0,00	0,88
Solution's Coverage: 0,64; Solution's Consistency: 0,79							
~Total knowledge sharing = f (Vows, Rituals, Significance, Sense of community)					Coverage		Consistency
Configurations	Vows	Rituals	Significance	Sense of Community	Raw	Unique	
1	●	○	○		0,08	0,01	0,89
2	●		○	○	0,08	0,01	0,94
Solution's Coverage: 0,09; Solution's Consistency: 0,85							

Table 5. Configurations for explicit knowledge sharing and for the absence of explicit knowledge sharing

Explicit knowledge sharing = f (Vows, Rituals, Significance, Sense of community)					Coverage		Consistency
Configurations	Vows	Rituals	Significance	Sense of Community	Raw	Unique	
1	○	●	●		0,31	0,31	0,80
Solution's Coverage: 0,31; Solution's Consistency: 0,80							
~Explicit knowledge sharing = f (Vows, Rituals, Significance, Sense of community)					Coverage		Consistency
Configurations	Vows	Rituals	Significance	Sense of Community	Raw	Unique	
1			○	●	0,44	0,20	0,80
2	●		○		0,12	0,02	0,84
3	○	●	●	○	0,22	0,07	0,80
Solution's Coverage: 0,53; Solution's Consistency: 0,77							

Table 6. Configurations for tacit knowledge sharing and for the absence of tacit knowledge sharing

Tacit knowledge sharing = f (Vows, Rituals, Significance, Sense of community)					Coverage		Consistency
Configurations	Vows	Rituals	Significance	Sense of Community	Raw	Unique	
1	○	●	●	●	0,26	0,26	0,76
2	●	○	●	●	0,10	0,09	0,77
Solution's Coverage: 0,36; Solution's Consistenc: 0,76							
~ Tacit knowledge sharing = f (Vows, Rituals, Significance, Sense of community)					Coverage		Consistency
Configurations	Vows	Rituals	Significance	Sense of Community	Raw	Unique	
1	●	○	○		0,07	0,01	0,85
2	●		○	○	0,07	0,01	0,94
Solution's Coverage: 0,80; Solution's Consistency: 0,85							

In all tables with causal configurations: black circles indicate the presence of the condition; white center circles indicate the absence of the condition; empty spaces mean that the condition does not matter to the outcome.

Concerning explicit knowledge sharing, the solution has only one causal configuration, while the solution regarding the absence of explicit knowledge sharing in turn, presents three causal configurations (Table 5).

Tacit knowledge sharing has two causal configurations in the solution. Similarly, the solution regarding the absence of tacit knowledge sharing also has two causal configurations (similar to the solution in Table 5) (Table 6).

It should be highlighted that there are no common configurations leading to total, explicit and tacit knowledge sharing, revealing that we are facing different behaviors.

DISCUSSION AND CONCLUSION

The solutions for both the presence and the absence of the outcomes lead to a better understanding of the phenomenon of knowledge sharing in religious organizations. Regarding total knowledge sharing (Table 5), the numbers of causal configurations for sharing (6) and not sharing (2) convey the opposite idea of what is stated in the literature: it indicates that total knowledge sharing is easier and more common than not sharing total knowledge. Such results can be justified by the conditions used in this study and the setting itself, which fosters a spirit of sharing and mutual helping. When addressing the two solutions — causal configurations for total knowledge sharing and causal configurations for the absence of total knowledge sharing — the fifth causal configuration for total knowledge sharing and the first causal configuration for the absence of total knowledge sharing are similar (vows, ~rituals, ~significance). Such configurations describes members that have taken several vows, don't follow rituals and don't have a personal meaning in the performed tasks and activities. This result indicates that there must be at least one relevant condition that was not addressed in the present investigation, and thus the two configurations are alike, which seems a paradox. If such a condition was considered, then configurations for both the presence and the absence for total knowledge sharing might differ on the contribution of such a condition.

Regarding the solution leading to the absence of total knowledge sharing, vows are present in both configurations, which seems to indicate that members that took vows limit total knowledge sharing in the addressed religious organizations. Terzidou et al. (2018) justifies this finding when stating that the vows represent a relationship that is established with a higher entity, and the remaining relationships (between individuals) can sometimes be harmed and viewed as secondary. Leaders and managers at these organizations should consider such results when planning training events that focus specifically on those who have taken vows. Please note that such members are not younger, nor older, more recent to the organization nor antique there, they just have taken several vows.

The solutions for explicit knowledge sharing corroborate the literature that reports difficulty in explicit knowledge sharing and greater easiness regarding not sharing such kind of knowledge. Accordingly, there is only one configuration that leads to explicit knowledge sharing, and three that lead to its absence (Table 5). The absence of vows (not having taken them) contributes to the single configuration leading to explicit knowledge sharing, along with the presence of rituals (following rituals) and significance (having a personal meaning in the performed tasks and activities) (~vows; rituals; significance). Such results show that only members that have not taken any vows share their explicit knowledge and thus, act according to the literature. Rituals are able to promote cooperation that in turn can be associated with knowledge sharing (Sosis 2004). Regarding significance, Krause (2003) argues on the importance of the social component of religion and its role of social and spiritual support. If individuals feel supported they will feel more willing and able to share. The configurations that lead to the absence of explicit knowledge sharing confirm the importance of significance *a contrario*: the absence of significance is a condition that appears in two out of the three configurations (Table 5) that lead to the absence of explicit knowledge sharing. In addition, these two configurations involve only two conditions, which illustrates the easiness of running into such combinations.

When addressing tacit knowledge sharing, there are two configurations for both its presence and absence (Table 6). The two configurations that lead to its presence involve the four conditions. Such results highlight the complexity of the combinations that lead to the sharing of this kind of knowledge, as justified by the literature (Dhanaraj et al. 2004; Seonghee & Boryung 2008). The presence of significance (having a personal meaning in the performed tasks and activities) and sense of community (the perception of belonging to a group, involving concern for others and mutual help) is common to the two configurations. Significance is present in the configurations that lead to the presence of tacit knowledge sharing, and in addition it is absent in the configurations that lead to the absence of tacit knowledge sharing. According to Krause (2003), significance can be associated with subjective well-being, which is a key factor for knowledge sharing. Thus, the institutions need to provide open dialogue and discussion so that individuals find individual purpose in their tasks and recognize the significance of their actions.

Regarding the sense of community, it also has a prominent place in terms of tacit knowledge sharing, since it is present in both configurations that lead to tacit knowledge sharing, and it is absent in the second configuration that leads to the absence of tacit knowledge sharing. Its presence in the configurations that lead to tacit knowledge sharing is justified by the literature, namely by Etzioni (2014) who refers to the role of communities in most religions. Consequently, it is necessary to ensure the existence of a sense of belonging and integration so that individuals feel predisposed to sharing knowledge. Religious organizations are a setting that reinforces the ideal of belonging and mutual help, and therefore knowledge sharing should occur more easily and naturally.

Regarding the two configurations that lead to the absence of tacit knowledge sharing (Table 6), they are similar to the two configurations that lead to the absence of total knowledge sharing (Table 5). This match may be justified by the fact that total knowledge sharing encompasses both types of knowledge (tacit and explicit). Additionally, we highlight that the absence of tacit knowledge sharing is a behavior adopted only by members who have taken vows. Significance, as noted above, is essential to knowledge sharing, and its absence contributes to the absence of knowledge sharing (it is present in the two configurations that lead to the absence of total knowledge sharing, in two of the three

configurations that lead to the absence of explicit knowledge sharing, and in the two configurations that lead to the absence of tacit knowledge sharing). This key role of significance can be justified by associating this condition with a subjective well-being (Krause 2003), which when not present prevents individuals from feeling comfortable and willing to share.

Having taken vows seems to be the most influential condition for knowledge sharing and it is often present in configurations that lead to the absence of such behavior (second parts of Tables 4, 5, and 6). This may be due to religious organizations being often very formal and locked in tradition, sometimes dogma that can be stifling and either inhibit or at least limit the flow of information. It is important that individuals that have not taken vows become key elements in organizations by stimulating and establishing procedures that lead to knowledge sharing. Thus, leaders and managers must provide the conditions for these members to be willing to share knowledge and set examples for the others in the organization.

Despite the quantitative results in Table 2 that show that rituals are not correlated to the other variables, rituals and significance play a prominent role in the single configuration that leads to explicit knowledge sharing. Significance and sense of community stand out in the configurations that lead to tacit knowledge sharing, being ever-present conditions. However, significance is the most noticeable condition, since its absence is present in almost every configuration that leads to the absence of knowledge sharing – total, explicit and tacit. Such findings can be explained *a contrario* by the literature. It states that individuals who find meaning in their actions are optimistic individuals with high self-esteem and high levels of satisfaction (Krause 2003), and such individuals are more open to sharing their knowledge. Thus, leaders and managers of religious organizations should support the social and spiritual role of individuals so that they feel that their tasks are meaningful and consequently they share knowledge.

Our findings clearly identify the contribution of organizational culture to knowledge sharing in religious organizations by answering to the research question. We offer alternative configurations that show how knowledge sharing occurs (and it does not occur) in religious organizations in light of the theory of organizational culture. We believe our results may provide interesting tips for Catholic organizations.

LIMITATIONS AND FUTURE RESEARCH

We faced some obstacles during this research such as the limited literature on knowledge sharing in religious settings, the number of questionnaires gathered in each organization, and the existence of other conditions that may prove relevant and were not used in the present investigation.

Regarding the first obstacle, there are very few studies that address knowledge sharing in the religious sector that makes presenting specific theoretical support for our results difficult. This gap in the literature allowed us to conduct an original study to identify the configurations of conditions that lead to the presence and absence of total, explicit and tacit knowledge sharing in religious organizations. Beyond this barrier, there were few references regarding the conditions in the study (votes, rituals, significance and sense of community) that had a relation to organizational culture theory. This obstacle was overcome by selecting the scales and the arguments from previous studies to enhance the theoretical support of this study.

The number of responses to the questionnaire (73 observations) is seemingly small given the high numbers of observations from quantitative studies. Nevertheless, fsQCA accepts small samples (Rihoux & Ragin 2008), and we were able to provide six solutions that respected both the consistency and coverage thresholds. Finally, given the existence of a causal configuration (votes, ~rituals, ~significance) common to solutions that lead to both the presence and the absence of knowledge sharing, there are probably some conditions that were not included in this study and that could contribute to the configurations. Thus, we suggest further studies to include other conditions that

may be relevant to knowledge sharing in religious organizations, such as the relationship with god (Lynn et al. 2009) or consent (Cohen & Hill 2007).

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