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Multicultural skills in open innovation: relational leadership enabling knowledge sourcing and sharing

Multicultural
skills in open
innovation

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Abstract

Purpose – In this paper, the authors argue that multicultural skills and relational leadership act as enablers for open innovation, and thereby examine the process through which teams can utilize multicultural skills to support the development of relational leadership and knowledge sourcing and sharing (KSS) through individual interaction and relationship building. The authors address the following research question: How does relational leadership enable open innovation (OI) among employees with multicultural skills?

Design/methodology/approach – This paper applies a multi-level approach (team and individual level) and builds on interviews with 20 employees, middle and senior managers with multicultural experiences, working in open innovation environments.

Findings – The authors' findings shed light on the process through which social exchange relationships among team members (e.g. R&D teams) and knowledge exchange partners are enhanced by the use of multicultural skills and support the development of relational leadership to facilitate KSS and ultimately OI. The decision for participants to collaborate and source and share knowledge is motivated by individual reward (such as establishing network or long-lasting contacts), skill acquisition (such as learning or personal growth in decision-making) and a sense of reciprocity and drive for group gain. The authors encourage greater human resource (HR) manager support for relational leadership and the development and use of multicultural skills to promote KSS.

Research limitations/implications – Despite the value of our findings, this paper is not without limitations. The authors explained that the focus of this study design was on the work activities of the participants and their skill development and not specific projects or organizations. It was outside the scope of this study to examine variations across organizations and individuals as the authors wanted to focus on multicultural skills and relational leadership as enablers for OI. The authors recommend that future studies extend our research by unpacking how various boundary conditions including relational leadership and multicultural skills impact KSS and OI over the life cycle of innovation teams within large multinational organizations, across countries and ethnicities.

Practical implications – The study's findings provide managers with improved understandings of how to enable an individual's willingness and readiness to source and share knowledge through multicultural skills and relational leadership. Managers need to ensure that human resource management (HRM) practices celebrate multicultural skills and support relational leadership in innovation teams. The authors suggest managers engaged in OI consider the components of social exchange as described by Meeker (1971) and utilize reciprocity, group gain, rationality and status consistency to support the emergence relational leadership and KSS in innovation teams.

Originality/value – In this paper, the authors contribute to the dearth of literature on the boundary conditions for OI by examining the role of relational leadership and characteristics/skills of the workforce, namely multicultural skills and contribute to the scarce research on the role of employees with multicultural skills and their impact on OI and present multicultural skills/experiences and relational leadership as enablers for OI.

Keywords Open innovation, HRM, Relational leadership, Knowledge exchange, Multicultural skills

Paper type Research paper



Introduction

Contemporary organizations are recognizing both the costs and benefits of active knowledge sourcing and sharing (KSS) between individuals, teams and organizations within and outside

organizational boundaries (Bogers *et al.*, 2019; Lee *et al.*, 2019; Randhawa *et al.*, 2016). The ability of organizations to innovate and exchange knowledge with external partners (Chesbrough, 2003) is considered critical to competing in complex and dynamic global markets (Bogers *et al.*, 2019; Dąbrowska *et al.*, 2019; Natalicchio *et al.*, 2018). The growing multicultural characteristics of the workforce (Lee *et al.*, 2018) have led to an increased interest in research on the complexity of managing diversity for collaborative work (Hinds *et al.*, 2011; Lisak and Erez, 2015). With an increase of more than 69% between 1990 and 2017, the number of international migrants (persons living in a country other than where they were born) has grown at a faster rate than the world's population (United Nations, Department of Economic and Social Affairs, Population Division, 2017). As a result, almost every workplace is a melting pot of cultures, and employees are shaped by their cultural identity and experience with other cultures. Considering the presence of more than 200 m immigrants in the world, the massive flows of knowledge, cultures and languages through the mobility of these people create opportunities that can help organizations to innovate (Ozgen *et al.*, 2013).

Many large European and American multinational organizations embrace an open innovation model as a critical means of developing new products and services to successfully compete in the marketplace (von Briel and Recker, 2017). Open innovation (OI) is defined as “a distributed innovation process based on purposively managed knowledge flows across organizational boundaries, using pecuniary and non-pecuniary mechanisms in line with the organization's business model” (Chesbrough and Bogers, 2014, p. 17). OI refers to an organization's openness to internal and external sources of knowledge as important drivers for an organization's innovation strategy to support the development of new products and services (Bogers *et al.*, 2018; Kaplan and Vakili, 2015; Savino *et al.*, 2017; West and Bogers, 2014).

In the current paper, we refer to OI as knowledge sourcing from external knowledge partners and outbound OI as knowledge sharing. More specifically, KSS is critical to OI performance (Bogers *et al.*, 2018; Rangus and Černe, 2019; Salter *et al.*, 2015). According to Bogers *et al.* (2018), there is growing interest in assessing OI at the micro-level or individual-level of organizations (Ahn *et al.*, 2017; Dahlander *et al.*, 2016; Rangus and Černe, 2019; Salter *et al.*, 2015). Previous literature has focused on the organization as the unit of analysis, addressing organizational-level antecedents to OI including absorptive capacity, organizational openness, organizational mindset (Dahlander and Gann, 2010; Laursen and Salter, 2006; Salampasis *et al.*, 2015; West and Bogers, 2014) and various organizational-level mechanisms for obtaining (searching, enabling, acquiring) external knowledge (Lopez-Vega *et al.*, 2016). However, even if organizational mechanisms are in place and supportive for OI, employees must have the capacity (e.g. knowledge, skills and abilities) and motivation to engage in knowledge exchange across organizational boundaries. Individual level engagement can be hindered by negative employee attitudes towards the acquisition and use of external knowledge (e.g. Manzini *et al.*, 2017) as the so-called not-invented-here (NIH) syndrome (Arora and Gambardella, 2010; Katz and Allen, 1982) or negative attitudes towards sharing and distributing internal knowledge outside the organization (Chesbrough, 2012), such as the so-called not-sold-here (NSH) syndrome (e.g. secrecy to retain expert knowledge and power and maintain employment). Building on this, we argue that employees are the driving force for innovation in organizations (Kratzer *et al.*, 2017; West *et al.*, 2014) and focus on enablers of individuals' KSS (i.e. relational leadership and multicultural skills) for OI.

In this paper, we advance understandings of multicultural skills and relational leadership (Uhl-Bien, 2006) through social exchange theory (SET) (Blau, 1964). Multicultural skills refer to an individual's ability to build an awareness of their own culture and develop the interpersonal skills to appreciate the views of others from their cultural perspectives. Multiculturalism comprises two concepts: (1) identity plurality, which refers to primary

cultural identities and (2) identity integration, which refers to the extent to which individuals integrate their multicultural skills into their work (Fitzsimmons *et al.*, 2017). It is not enough to identify with a culture if the individual does not also integrate predominant cultural norms, values and beliefs into their day-to-day work interactions. There is little research on the role of employees with multicultural skills and their impact on OI (Ardito *et al.*, 2018; Bogers *et al.*, 2017). In this paper, we argue that multicultural skills are an enabler for relational leadership and subsequent KSS as they may improve communication (Fleischmann *et al.*, 2020; Williams and Johnson, 2011), understanding (Tadmor *et al.*, 2012; Tadmor and Tetlock, 2006) and collaborative activities (Doukanari *et al.*, 2020; Friesel, 2020) among team members.

Recent OI literature has demonstrated the importance of leadership for OI among employees (Oliveira *et al.*, 2019; Rangus and Černe, 2019; Slavec Gomezel and Rangus, 2019). This research has focused on the role of transformational leadership (Elrehail *et al.*, 2018); authentic leadership (Alzghoul *et al.*, 2018), relationship-based employee governance (Naqshbandi and Jasimuddin, 2018) and empowering leadership (Zhang and Bartol, 2010). However, recently there has been a growing interest in leadership as a relational process that is socially constructed and socially distributed (Uhl-Bien, 2006). Relational leadership is defined as “a social process through which emergent coordination in evolving social order and change (i.e. new skills, values, attitudes, approaches, behaviors, ideologies, etc.) are constructed and produced” (Uhl-Bien, 2006, p. 668). Although relational leadership has received only limited attention in the context of OI (Cunliffe and Eriksen, 2011; Hosking, 2007; Ospina and Foldy, 2010), we suggest that it may be an important boundary condition that connects people together to facilitate their role as boundary spanners integrating knowledge from different sources and utilizing it in novel combinations to support OI (Chesbrough, 2012; Uhl-Bien, 2006). Relational leadership is important for OI because research and development (R&D) team members based on their expertise and experience (i.e. multicultural skills) need to collaboratively exchange information with others to engage in problem solving and the creative work (Lee and Kelley, 2008). According to Stephens and Carmeli (2017), relational leadership is important in creative work contexts where individuals, irrespective of their hierarchical position, exercise influence on each other and their work outcomes. Relational leadership develops through social dynamics, communication and building relationships (Uhl-Bien, 2006), and we argue that multicultural skills are a critical part of enhancing this process especially in R&D teams that engage with internal members and external partners from different cultural groups. For companies engaged in OI, it is critical to better understand how to enable collaboration and knowledge exchange between culturally diverse employees to support OI performance (Puck *et al.*, 2007). We argue that multicultural skills play an important role in understanding this process.

To understand this process, this paper applies a multi-level approach (team and individual level) and builds on interview results with 20 employees, middle and senior managers with multicultural experiences/skills, working in an OI environment. We address the following research question: How does relational leadership enable OI among employees with multicultural skills?

This paper makes contributions to the HRM literature by first, responding to calls for more extensive research by Chesbrough (2012) on the boundary conditions for OI by examining the role of relational leadership and multicultural skills. Second, we examine multi-level perspectives on OI by studying the views of employees regarding interactions within their teams (e.g. R&D teams). By doing this, we address the relative lack of focus on the micro-foundations of OI (i.e. the role of individuals) (Bogers *et al.*, 2018) within contemporary organizations (Ahn *et al.*, 2017; Chatenier *et al.*, 2010; Randhawa *et al.*, 2019; Rangus and Černe, 2019). We shed light on how multicultural skills of individuals can support social exchange and promote relational leadership to enable KSS within their teams and with external partners.

Open innovation

OI highlights the importance of an organization's openness to leverage external sources of knowledge to create new products and services (Kratzer *et al.*, 2017; Laursen and Salter, 2006; West and Bogers, 2014). The network of relationships between an organization and its external environment play an important role in shaping organizational performance through the capacity to KSS and ultimately innovate (Ahuja, 2000; Powell *et al.*, 1996; Rosenkopf *et al.*, 2001; Shan *et al.*, 1994). Previous research has focussed on openness at the organizational-level and illustrates that there is little research on the role of individuals' openness to innovation or the role of individuals to build absorptive capacity for new ideas and ways of doing things (Bogers *et al.*, 2017; Randhawa *et al.*, 2019; Salter *et al.*, 2015; West and Bogers, 2017). One notable exception is Monteiro *et al.* (2017) who examine the relationship between a lack of qualified workers and openness to external knowledge of firm innovation performance. There have been growing calls by innovation researchers to examine the human side of OI and assess this phenomenon at the micro-level of the organization (Bogers *et al.*, 2018; Gassmann *et al.*, 2010). Previous research has begun to shed light on the impact of individual's attributes on the ability to combine internal and external knowledge for OI (Bogers *et al.*, 2018; Gassmann *et al.*, 2010; Randhawa *et al.*, 2019). For example, the impact of individual's work history and diversity of educational background on organizational-level knowledge flows (Bogers *et al.*, 2018) and individual-level competencies to OI (Chatenier *et al.*, 2010). Some studies have focused specifically on the chief executive officer's (CEO's) characteristics as enablers for OI (Ahm *et al.*, 2017) and on the R&D professional's challenges and coping strategies (Salter *et al.*, 2014).

Some OI research has examined the individual's attention to external knowledge sources (Dahlander *et al.*, 2016) and how such knowledge sources relate to individual's ideation performance (Salter *et al.*, 2015). However, motivating individuals to generate and contribute their intellectual property in the absence of financial incentives is a management challenge for OI (West and Gallagher, 2006). The understanding of motivation, cognitive limitations, opportunism and incentives for generating the knowledge spillovers (West and Bogers, 2017) on individuals' openness remains scarcely investigated by scholars (Bogers *et al.*, 2017; Randhawa *et al.*, 2019; Salter *et al.*, 2015; West and Bogers, 2017). Moreover, previous literature underlines the importance of the processes and structures that shape OI routines and capabilities (Bogers *et al.*, 2018; Felin *et al.*, 2012; Foss and Lindenberg, 2013). For example, Randhawa *et al.* (2019) found that the quality of an OI capability is dependent on the efficacy of supervisory-level managers. To the best of our knowledge, there is no multi-level research that examines the impact of employee's multicultural skills and relational leadership on KSS. By advancing the micro-foundations of OI, this research provides an understanding of the interplay between individual and team levels, and the process through which multicultural skills among individuals support the emergence of relational leadership to overcome barriers in KSS and enable OI.

Relational leadership and open innovation

Research has investigated the role of leadership in OI (Naqshbandi and Jasimuddin, 2018; Naqshbandi *et al.*, 2019; Oliveira *et al.*, 2019; Rangus and Černe, 2019; Slavec Gomezel and Rangus, 2019). Scholars have examined the impact of transformational and transactional leadership on OI performance and found a positive association between transformational leadership and OI (Al-Husseini and Elbeltagi, 2016; Elrehail *et al.*, 2018; Jia *et al.*, 2018; Jung *et al.*, 2003). However, we argue that traditional leadership theories do not take into consideration the emergent and socially constructed relational processes of leadership (Uhl-Bien, 2006). The relational perspective of leadership addresses the interaction and relationship quality among individuals as an emergent social influence process (Endres and Weibler, 2017; Uhl-Bien, 2006). Although leadership is an essential element in the promotion of innovation (Denti and Hemlin, 2012; Mumford *et al.*, 2002), the relational dimensions of

leadership have been disregarded in the context of OI (Cunliffe and Eriksen, 2011; Hosking, 2007; Ospina and Foldy, 2010; Uhl-Bien, 2006). We focus our paper on relational leadership as a key boundary condition for KSS.

Relational leadership is underpinned by three assumptions: first, leadership relationships are not restricted to hierarchical roles; second, leadership is underpinned by interactive dynamics that lead to an emergence of social order and action; and third, at a collective level describes the way in which social systems change and the socially constructed roles and relationships developed that might be labelled leadership (Uhl-Bien, 2006). The transfer of knowledge occurs in a social context, and resources and opportunities for transferring knowledge often reside in social relationships (Reiche *et al.*, 2009). Thus, the more communication and interaction that is encouraged among team members, the faster knowledge can be shared and developed (Marin *et al.*, 2016). We argue that this is crucial for collaboration between research and development team members and the OI process, especially in teams and with external partners from diverse multicultural backgrounds. Multicultural skills among team members and external partners may be used to support the development of relational leadership that is useful to strengthen KSS (e.g. language skills, cultural and institutional understandings, new ways to understanding problems and solutions).

Multicultural skills and open innovation

In today's workplaces, employees interact more frequently with other individuals from different cultural backgrounds to develop and use multicultural skills, which may in effect increase the diversity of ideas, strategies and approaches in collaborative work (Hinds *et al.*, 2011; Lee *et al.*, 2018; Lisak and Erez, 2015). For those companies engaged in OI, it is critical to understand how to maximize the benefits of multicultural skills to support the development of relational leadership that may lead to different ways of thinking and working.

The literature has highlighted the positive impact of multicultural skills and experiences on creativity (Benet-Martínez *et al.*, 2006; Cheng and Leung, 2013; Leung *et al.*, 2008; Maddux and Galinsky, 2009). It is critical that team members actively engage with different cultures to reflect and appreciate long-term beliefs, practices and assumptions of various cultures (Maddux *et al.*, 2014). When individuals' relationships are influenced by different identity patterns, they can identify with multicultural practices and outcomes (e.g. greater networks) (Fitzsimmons, 2013). Hence, multiculturalism is a skill whereby personal networks of relationships help individuals transfer knowledge and collaborate to support innovation. Multiculturalism as a skill supports employees and their ability to source and share information through enhanced language capabilities and understanding of cultures and institutions (Fitzsimmons *et al.*, 2017; Kirkman and Law, 2005).

However, the growing multicultural nature of organizations and teams (Stahl *et al.*, 2010; Stahl *et al.*, 2010) may have consequences for the ability of individuals from divergent cultural backgrounds to effectively work with each other (Johnson *et al.*, 2006). Individuals may use their multicultural skills as a competitive advantage (Reed *et al.*, 2012). The OI literature needs to examine the role of multicultural skills of employees' and their impact on OI (Ardito *et al.*, 2018; Bogers *et al.*, 2018). In this paper, we take up this challenge and examine the interactions of OI at individual and team levels and theorize about how an individual's multicultural skills support the development of relational leadership to strengthen KSS within teams and between external partners.

Theoretical framework

Over 50 years ago, Blau (1964) examined the social structures and emergent patterns of behaviours of individuals within groups. SET provides the framework to examine emergent social patterns and skills within the teams involved in this study (Cropanzano and Mitchell,

2005). SET enables the researchers to better articulate the processes by which multicultural skills and relational leadership skills support KSS for OI. [Lin et al. \(2018\)](#) argue that social exchange relationship skills are important in enhancing the interactions and collaborations between culturally and functionally diverse team members to maximize exchange through KSS. Therefore, SET is used to explain the rationale and processes through which individuals develop multicultural skills and relational skills to support social exchange and KSS ([Cropanzano and Mitchell, 2005](#)).

SET is supported by [Meeker's \(1971\)](#) six rules that guide social exchange relationships and provide ways of identifying multicultural skills and relationship skills that support KSS. First the concept of reciprocity is about "giving back" and in a team environment this is about the knowledge the participants might share with others; second, is rationality and this is when an individual uses logic to determine consequences of actions, such as rewards and costs; third, is altruism which is when an individual seeks benefits for others at a cost to themselves; fourth, is group gain which supports benefits for all and to be shared consistently amongst team members; fifth, is status consistency which explains the benefits that are determined by the hierarchical status of participants; and sixth is competition which is how an individual will maximize benefits for themselves. Two or more of these guiding rules can also function at the same time.

Throughout this study, we use Meeker's six social exchange rules as a basis to investigate the use of multicultural skills to support the emergence of relational leadership to enable KSS for OI. Meeker's rules provide us with a detailed way to better understand the relationships between members of a team and with external partners ([Cropanzano and Mitchell, 2005](#)). To explore how team members can develop relational leadership skills that enable KSS, we view the process as socially constructed and socially distributed ([Uhl-Bien, 2006](#)). Since we investigate interpersonal exchange among the participants of this study, we considered Meeker's rule as most appropriate framework to identify how to enable collaboration and knowledge exchange between culturally diverse employees ([Puck et al., 2007](#)).

We argue that relational leadership and multicultural skills have important consequences for OI which can be better understood by unpacking the processes for each and using SET and [Meeker's \(1971\)](#) six rules for social exchange. SET is important because the nature of social exchange between culturally diverse employees may well determine collaboration and more effective skill development in the process of KSS ([Molm et al., 2000](#)) and OI performance ([Vanhaverbeke et al., 2014](#)). Relational leadership can emerge (and perpetuate) shared understandings among team members through ongoing interpersonal, collaborative interaction and communication ([Saz-Carranza and Ospina, 2011](#)). Hence, we argue that social exchange relationships are the foundation of collaboration and knowledge exchange inside and outside the organization as team members may reciprocate help and support of their colleagues and work conscientiously for group gain (e.g. group reward).

In relation to multicultural skills in teams, social exchange relationships may also enhance the interactions and collaboration between culturally and functionally diverse team members ([Saz-Carranza and Ospina, 2011](#)). Relational leadership may emerge through social exchange of individuals with unique knowledge and abilities they are willing to share with others ([Uhl-Bien, 2006](#)). Multicultural skills may facilitate social exchange. SET and Meeker's decision rules can also be used to explain why social relationships are important to build trust and mutual commitment between team members and external knowledge partners ([Cropanzano and Mitchell, 2005](#)).

Methodology

A qualitative research methodological approach was employed to examine the activities of 20 participants made up of employees, middle and senior managers with multicultural

experiences working in various OI environments. A qualitative approach was considered the most appropriate for exploring how participants make sense of their experiences (Creswell, 2014; Guba and Lincoln, 1994). The focus was on the work activities of the participants and their skill development and not specific projects, but it is expected that participants will draw on experiences from various projects. The participants work in industries that create new knowledge and technology in production, service, software, and energy in the USA, Europe, Australia and Asia.

The participants were reported to have OI experience of more than five years working in organizations that promote innovative practices in various projects. Case study is the methodological approach chosen to examine the ways in which social experiences are created through everyday activities (Denzin and Lincoln, 2000; Lincoln and Denzin, 1994). The researchers sought case study sites determined by organizations claiming to have various OI processes and made contact with two gatekeepers known to one of the researchers (Creswell and Creswell, 2017; Lincoln and Guba, 1990). Further contacts were established through a snowball technique and access to multinational companies was provided. Managers within each of the organizations approached potential participants guided by whether they were assigned expatriates, self-initiated expatriates or skilled business migrants. The following Table 1 provides information on the participants including pseudonyms, demographic data and a sample of multicultural skills and relational leadership skills that support KSS for OI.

Once the participants expressed their interest to their respective managers, the researchers were able to forward invitation emails. To participate in the study, participants were asked as to reply with preferred times and locations for the interviews which would take place in-person interview or via teleconference. To maintain confidentiality and assure participants of ethical codes and guidelines throughout this research, ethical clearance was secured from the university prior to the commencement of the study (Turner, 2010). In preparation for each interview, the researchers provided participants with participant information statements explaining the study and the processes involved and an informed consent form (Brinkmann, 2014). The researchers informed interviewees that by signing the consent form they gave consent to participate in the study which would be voluntary (Fraenkel and Wallen, 1993; Wallen and Fraenkel, 2001). Moreover, the participants were assured that the information given by them would be kept in confidence and that data would be managed and decoded as appropriate to ensure participants are not identified or can be re-identified from published results (Devers and Frankel, 2000).

Data collection, analysis and reporting

Prior to conducting semi-structured interviews, the participants were asked if the researchers could record the interviews and all participants were in agreement (Lincoln and Guba, 1985; Yin, 2013). Data collection involved a series of 45–50-min interviews with 20 employees, middle and senior managers. Semi-structured interview questions were designed to explore the ways in which the participants share and source information within and external to the organization, how they maximize benefits to themselves and collectively with the team and the rewards and sacrifices for each participant. Aligned with the goal of this study, the researchers relied on the participants' views of how they go about KSS and OI. Participants were encouraged to recall social and historical examples to better understand their work processes (Creswell, 2014).

The analysis of the data commenced immediately following in person and teleconference interviews with the participants with the purpose of identifying initial themes (Lofland and Lofland, 1984; Strauss and Corbin, 1990). The researchers began the preliminary ordering of categories into memos. A category theme analysis was applied and there were conversations amongst the researchers about the categories (Strauss and Corbin, 1990).

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	Pseudonym	Position	Company location	Industry	Tasks related to various projects	Multiculturalism skills
1	Zaid	Senior business analyst	USA	Computer technology	Creation of collaboration platform	Relationship building skills, global awareness
2	Bruce	Specialist mobility and assignments	Germany	Automotive industry	Management of staff secondments across companies	Open mindedness, ability to put yourself in another's position
3	Tom	Quality engineer	Germany	Automotive industry	Management of product cooperation	Cultural awareness, relationship building skills
4	Alex	Communications engineer	USA	Aerospace industry	Collaboration project on detection of ships	Ability to adapt, being observant
5	Steve	CEO	Australia	Service industry	Development of patent software in collaboration with external company	Tolerance, ability to think from receivers end rather than the sharer
6	Matthew	CEO	Australia	Service industry	Creating customer relation with external partners	Ability to adapt, capability to transfer knowledge
7	Dominic	Consultant	Switzerland	Service industry	Development of post-merger integration software together with external partner	Tolerance, broad horizon
8	Peter	Software development engineer	Germany	Software industry	Coordination of international standard for smart charging together with competitors	Social skills, ability to adapt
9	Till	Software developer	Germany	Software industry	Co-creation of eye tracking tool	Openness, interpersonal skills
10	Adam	Product developer	USA	Whitegoods industry	Definition of B2B strategy in collaboration with internal and external stakeholders	Ability to understand different working styles, problem solving skills

Table 1.
Participants

(continued)

Multicultural skills in open innovation

	Pseudonym	Position	Company location	Industry	Tasks related to various projects	Multiculturalism skills
11	Keith	Hardware design engineer	USA	White good industry	Design of customer interface in collaboration with customers	Communication skills, ability to adapt
12	Karl	Sales and marketing director	Germany	White good industry	Formation of alliance with manufacturer	Patience, ability to adapt
13	Kate	Product manager	Germany	White good industry	Definition of customer journey for 3D display	Networking skills, cultural awareness
14	Nathaniel	Systems engineer	Germany	White good industry	Co-creation of instrument cluster system	Ability to think outside the box, openness to share knowledge
15	Ross	CEO	Hong Kong	Healthcare industry	Coordination of health care project with external partners	Ability to adapt, learning capability
16	Stephanie	Laboratory manager	Germany	Chemical industry	Production of specific vaccine in collaboration with competitive labs	Cultural awareness, communication skills
17	Tim	CEO	China	Energy industry	Setting up production pilot line of German company in China	Openness, willingness to support others/ share with others
18	Mike	Technical plant director	Singapore	Energy industry	Building a new factory in China in collaboration with German headquarter	Ability to see things from different perspective, relationship building skills
19	Paul	Senior analyst quality manager	China	Energy industry	Co-creation of quality management system	Open-mindedness, willingness to share knowledge
20	Elliot	Product manager	Australia	Mining industry	Establishment of water treatment plant together with other stakeholders	Flexibility, ability to adapt

Table 1.

The transcripts of the interviews were coded until saturation insuring the reliability of the coding framework (Glaser and Strauss, 1967; Hennink *et al.*, 2020). The interviews were transcribed and analysed (Silverman, 1993) following the steps of content analysis outlined

by Weber (1984). NVivo is a piece of computer-assisted qualitative software that systematically and thoroughly codes and categorizes raw data (Bazeley and Jackson, 2013) to identify themes in the data (Weber, 1990). This software assists researchers to analyse data into modules by importing, analysing and codifying the data to search for patterns in participants' responses (Yin, 2013). The transcript of each interview was also coded independently by two coders, who are experts in OI. The transcripts were read by each coder and inter-rater reliability was determined by the frequency of agreement between the first two raters (Lincoln and Guba, 1985; Yin, 2013). The two coders ensured the reliability of the coding framework. Where there was disagreement between the coders, a third rater, who researches in OI, was employed to finalize the coding. The results of NVivo and the thematic analysis of the two raters were combined to reach agreement and the main themes are presented in the findings.

Findings

Our findings focus on the participants' multicultural skills and capacity to build relationships through various OI activities. The findings are aligned with two theories. First, SET (Blau, 1964) in accordance with Meeker's (1971) rules of reciprocity, rationality, altruism, group gain, status consistency and competition. Second, relational leadership and the concepts that assert leadership is not always hierarchical, leadership is underpinned by interactive social dynamics and leadership is the collective of socially constructed roles and relationships developed that might be labelled leadership (Uhl-Bien, 2006). Throughout the data it was evident that participants perceive the skills they have acquired through multicultural experiences and relationship building as critical to KSS and OI. In the data, the researchers found that "giving back" was important to the participants.

Knowledge sourcing and sharing and reciprocity

The participants reported that during their work, they build a sense of knowing that enables them to give to other individuals within the team and external to the organization. From the participants responses it appeared their years of experience building new multicultural skills had led to the realization that you have new values and approaches and when you "give" then the person you are dealing with will "give back" (Uhl-Bien, 2006). The participants discussed the ways in which they engage with reciprocal practices:

I was working on the German side, and the Chinese always ask for documents. My team said we do not want you to have the documents, this is key information for our company. In the end we made a compromise gave them 50% of the information. Now I'm on the other side, I'm in China and I'm(sitting on the other side and asking Germany for those documents and now I see the whole situation from China view, now I've built an understanding from the other perspective to give and receive. (Paul, Senior Analyst Quality Manager)

Because of the team's experiences we all tend to share information more openly. In the beginning we were a bit more hesitant but when I share information the other person is more ready to share information with me. (Kate, Product Manager)

When I'm open that makes the other person share information. The other person eventually realizes it would be unfair to not give that back, there's a lot of giving and receiving. I give you information and you give me information. (Adam, Product Developer)

Knowledge sharing is big part of my job and I'm happy to share all knowledge within the same research group. I'm a little more guarded when sharing knowledge outside the research group but that depends on how much the company, we are working with, will share information with us. (Steve, CEO)

The participants emphasized the importance of social relationships with knowledge exchange partners through reciprocity to enable mutual KSS. The participants explained how reciprocated knowledge sharing between exchange partners could be the basis for deeper relationships and knowledge sharing in the future.

When I help someone, I'm always hoping that help will be reciprocated to me one day. In my work I aim to build a good relationship with the team and external customers so that we can share knowledge. When I share new knowledge, I expect the other person to be as nice to me as I have been with them. (Zaid, Senior Business Analyst)

If you're sharing knowledge with somebody that's doing something similar, they also will reach out to you and share their knowledge with you and in doing that we are both building a solid relationship. (Nathaniel, Systems Engineer)

When we give knowledge of course we expect to get knowledge back from other people, not immediately but later. We build a new friendship and I see it as a kind of investment. (Paul, Senior Analyst Quality Manager)

Rationality around rewards and costs

When the participants discussed how they decide whether to participate in KSS or not they focused on the benefits they receive through the process of KSS. They appeared to use logic to determine whether to share and source knowledge and at the same time consider any consequences including costs for their efforts. Most of the participants concluded that if they did not share information this might "hurt the team" or be "harmful" to themselves. The participants agreed that if they did hold back knowledge then they could possibly "lose their job". Participants ascertained likely rewards before deciding whether to participate in KSS and OI.

Generally, people are willing to source knowledge if they're benefitting from it. If team members or even customers feel they're building on their knowledge and understanding of knowledge, then that's a reward for them. (Mike, Technical Plant Director)

When we have transparency in our team, I think this helps us to avoid the people in the team who might be here for their personal benefit. It's the benefits for the team and the organization that we strive for and that's our reward. (Steve, CEO Service Industry)

Sharing knowledge is a benefit but it's not always a personal benefit. It's a reward for the team when we increase new knowledge that supports our products and projects. (Kate, Product Manager)

During the interviews, it appeared that participants organically built their relationship skills when contributing to innovative activities. The participants discussed relationship building as a reward for all participants in open and honest communication where trust was clearly a reward in the groups. The participants explained:

When we build relationship skills, we create an atmosphere of trust for new resource creation, which facilitates innovation. The most important thing is to find a way to know what people want and how they expect to share knowledge. And, also avoid some mental blocks. (Alex, Communications Engineer)

When you're continually in exchange communications you learn how to develop good relationships. We build skills in communications and shared understandings and that makes a good relationship. (Elliot, Product Manager)

I do not think we can expect that we get knowledge immediately from our team members or exchange partners but by being open we can build up our relationships. With do this in order to get knowledge from other people in another step. (Paul, Senior Analyst Quality Manager)

Altruistic motivations to provide benefits to team members and exchange partners

In the interviews, participants articulated how they develop understandings of ways in which they provide benefits to others. Some of the examples demonstrated how there are times when benefits are provided to others at a cost to themselves.

So, sharing and searching for knowledge is basically what I do all day. For example, I was involved in a customer acquisition for a 3D display project. I'm always finding knowledge that will support other members and the team. (Peter, Software Industry)

I'm like a distributor of knowledge, because I support the sales teams, and I liaise with customers. So, I have to get the knowledge myself, and then I have to share it. So, I'm always a middle-man basically in the knowledge transfer and make sure others are doing well more so them myself. (Adam, Product Developer)

I share information with others in my team and with the companies we deal with. I have the feeling that I've done a good thing by spreading knowledge and helping someone else. (Zaid, Senior Business Analyst)

Through the experience of being exposed to different cultures, "multicultural employees demonstrate confident and well-developed skills" (Keith, Hardware Design Engineer) in understanding the views of others, they also appear to have a certain willingness and ability to acknowledge the different views of others and make the other party "feel empowered". (Ross, CEO Healthcare Industry)

If you're a foreigner yourself, you have the experience to be in a different environment and you know how difficult it is. That makes you more open and increases your willingness to support others and also to share with others. But sometimes it does not help me because I do not always receive the same in return. (Tim, CEO Energy Industry)

Because of my multicultural experiences I feel like I can engage more quickly than those who do not have such experience. I'm able to communicate and assess certain situations in different ways because I've seen the ways other countries and companies operate. Having an awareness of different backgrounds helps when you're exchanging knowledge. (Stephanie, Laboratory Manager)

I've worked with many different cultures at the same time, and that's helped me a lot to understand the different work approaches and the different thinking patterns and approaches. It's helpful to solve problems, discuss issues, and come to a common solution. I guess I've learned a lot from my experiences. (Adam, Product Developer)

Supporting team members for group gain

The participants discussed the importance of working collaboratively with other team members for the overall benefit of the team. They expressed that through relationship skills they can promote positive attitudes towards KSS and in the process reduce any negative attitudes. The participants appeared to be driven by the gains from multicultural and social experiences. In their narratives, shared understandings emerged in the participants talk as they described team member relationships and how multicultural skills support team activities. The participants discussed the importance of an open accepting learning environment where employees are allowed to make mistakes which ultimately results in gains for the team.

In my role it's about supporting everyone in the team to achieve maximum group outcomes. (Karl, Sales and Marketing Director)

Because our team members have worked in multicultural environments, they appear to be more open to making a mistake, improving, and making the next mistake to improving even more. It works much better than keeping problems under the table. (Tim, CEO Energy Industry)

If there's a problem or a mistake the solution is not about pointing out the mistake. It is important to own the mistake and find a solution together as a team. Accepting mistakes and not blaming colleagues helps support the team. If you are scared of making mistakes you reduce communication and the ability to innovate. (Tomas, Quality Engineer)

Status consistency and relational leadership

In their narratives, the participants indicated they often exchange knowledge to ensure their own status within their teams. They articulated the ways in which the status of participants results in positive relational and multicultural skills that promote KSS and OI. The researchers heard the participants mention several times how “multicultural experiences” support team members to be “adaptable”, “flexible” and build on “relationship skills”. Participants explained that working in multicultural teams helped them to better understand and integrate their cultural and relationship skills, and positive “attitudes” and “approaches” to KSS and OI. Based on individual but varied experiences, participants repeatedly described a leadership style that they viewed as beneficial for activities around knowledge exchange.

I think a democratic leadership style is conducive to sourcing and sharing knowledge. Because every member of our team contributes to discussion the team, we're able to build knowledge that can be shared. (Alex, Communications Engineer)

When you have a leadership style which is collaborative, it definitely encourages knowledge exchange. If you have a leadership style which is authoritarian, then you have to kind of wiggle your way through. (Elliot, Product Manager)

My project manager is a really good leader, I'm really inspired by his level of his leadership and his relationship skills. I try and absorb his knowledge and build a lot of knowledge from examples of his multicultural experiences which are different to mine. (Keith, Hardware Design Engineer)

Participants reported on how they developed a certain status and in accordance with relational leadership notions of team member leadership skills (Uhl-Bien, 2006). It was not only about being leaders but “it's also about reputation and being well known as knowledgeable” (Dominic, Consultant) and “a valuable source for long-term exchange” (Peter, Software Development Engineer) on many and different projects.

Understand others to better position yourself and hold your status. Don't be known as the person who shares everything. Be known as the person who has the skills for innovation. It's a challenge in OI to find a good balance for yourself, the team and the customer. (Ross, CEO Healthcare Industry)

When I'm the source for all information I know other members of the team are holding back. I'm holding my position when I share information even though I'm not the only source of information. (Bruce, Automotive Specialist)

Competition

The participants discussed struggles and behaviours within the team that could possibly impact on KSS and ultimately the success of OI. Some participants explained how they hold back knowledge to maximize benefits for themselves. The level of competition is “based on how each individual determines their own benefits” (Matthew, CEO Service Industry). This suggests individuals may even create harm to other members of a team to maximize benefits for themselves:

It was obvious to everyone in the team that one of our team members would not share knowledge so that he could strengthen his position as a team member. (Steve, CEO Service Industry).

I went to Vienna for a study in a museum, and I know nothing about art and there were people walking around wearing eye trackers. I was responsible for the technical design and development of the eye trackers and I tried to make sense of what an art critique would be looking for. I was learning how others perceive what I produce, and this is important for me to know more and be better than anyone else. (Till, Software Developer)

It can be different in other countries, but people in Germany keep knowledge from people they're working with put themselves in a stronger position. (Tim, CEO Energy Industry)

Some people do not want to give too much knowledge away and by doing that they impact negatively on other team members. They hold knowledge because they worry about losing their commercial advantage. (Elliot, Product Manager)

The participants also indicated that they have felt the fear of losing their knowledge or status in a team by participating in KSS. Participants explained how they hold back knowledge to avoid becoming replaceable and on occasions they choose not to source knowledge that could possibly affect on their reputation.

I have sometimes thought that maybe another team member is able to do the same thing that I can do, and this can be a threat to my position. I might hold back information from that person or an exchange partner if I believe it to be a threat to what I do. (Nathaniel, Systems Engineer)

I know that some people in our team hold back information about a project, so they remain the main source of knowledge. (Kate, Product Manager)

Discussion

Through a lens of SET (Blau, 1964) and Meeker's (1971) six decision rules, and relational leadership (Uhl-Bien, 2006), this study has shed light on the process through which social exchange among team members (e.g. R&D teams) and knowledge exchange partners is enhanced by the use of multicultural skills. Furthermore, this process supports the development of relational leadership to facilitate KSS and ultimately OI. Building on this, we argue that Meeker's rules (e.g. reciprocity and rationality) are important for the relationships between knowledge exchange partners (Lin *et al.*, 2018). We found that the concept of "giving back" or reciprocity among participants is an important facilitator for social exchange relationships (Uhl-Bien, 2006). We argue that social interactions and relationship building enable KSS, and multicultural skills can be used to support this process and the development of relational leadership, especially in situations where there is significant cultural diversity and complex business problems. Multicultural skills may enhance the sharing and understanding of different values and opinions within cultural and functionally diverse teams (Fitzsimmons, 2013; Fitzsimmons *et al.*, 2017). The alignment and understanding of goals and related attitudes and behaviours among team members and external knowledge exchange partners may enhance collaborative relationships (Cropanzano and Mitchell, 2005) conducive for KSS and ultimately OI.

Themes emerged from the study around the openness of individuals (enhanced by multicultural skills) and how this promotes social exchange and the emergence of relational leadership as a foundation for KSS. Meeker (1971) argued that open interpersonal exchanges are motivated by individual decisions prompted by "giving back" or reciprocity. Our findings provide some evidence to suggest that successful reciprocal practices supported by multicultural skills and relational leadership may enhance individual motivation to engage in KSS. The concept of "giving back" knowledge supports individual relationships which are conducive for effective team collaboration and facilitating KSS. We now discuss our key findings and implications for theory development and managers.

First, one of the key themes is around effective relational leadership practices and how individuals (i.e. self-interest/rationality) and teams gain (i.e. group gain) from relational leadership practices to enable KSS. When relational leadership emerges (Uhl-Bien, 2006), participants report that they increase their engagement and collaboration through shared responsibilities (Clarke, 2018; Raelin, 2016; Uhl-Bien and Ospina, 2012). Relational leadership practices in teams seem to create openness to learn, express views, opinions and share expertise to support KSS and ultimately OI.

Second, another theme of the study highlights how participants identified trust as a positive outcome of working on OI projects. Trust was recognized as helping to build long-term relationships. Meeker (1971) postulates rationality supports exchange decisions that establish certain consequences and outcomes. It appears that managers and employees are motivated to collaborate and share and source knowledge by contributing to mutual knowledge creation, establish trustful relationships and an open environment with shared responsibilities and relational influence. It is through this process that relational leadership may emerge in teams underpinned by the multicultural skills of team members. The main goal seems to be mutual benefit for both knowledge exchange partners. The consequences of not having trust would be reduced communication and decreased willingness to share knowledge. Therefore, it can be argued that established trust through relational leadership between knowledge exchange partners may lead to openness and enable KSS.

Third, multicultural exposure may activate integrative behaviours and a willingness to consider different views on the same issues, problems and solutions (Tadmor and Tetlock, 2006). In our data, participants that had engaged with different cultures in the past appeared to have an increased capacity for adaptability and flexibility within their current teams. Moreover, the positive attitudes and behaviours of these participants allowed them to integrate their diverse cultural experiences into their team's collaborative efforts. The team members' ability to link diverse and unconnected ideas may enable breakthrough innovation (Post *et al.*, 2009). We suggest that multicultural skills may support relational leadership practices and KSS.

Fourth, group gain (Meeker, 1971) seems to be an important driver for the emergence of relational leadership and use of multicultural skills to support KSS. Collective learning efforts may produce and sustain team interactions and the emergence of relational leadership (Uhl-Bien and Ospina, 2012). Through interaction, communication and sharing skills/experience, knowledge exchange partners learn and appreciate the views of others and share understandings that emerge as accepted forms of KSS (Saz-Carranza and Ospina, 2011). Relational leadership that facilitates trustful relationships and reduces negative attitudes towards KSS is characterized by collectivity and integration of all team members; multicultural skills may support this integration (Fitzsimmons, 2013; Fitzsimmons *et al.*, 2017).

Theoretical contribution

In this paper, we follow calls for greater research by Chesbrough (2012) and contribute to the dearth of literature on the boundary conditions for OI by examining the role of relational leadership and multicultural skills. In this vein, we contribute to the scarce research on the role of employees with multicultural skills and their impact on OI (Ardito *et al.*, 2018; Bogers *et al.*, 2017) and present multicultural skills and relational leadership as enablers for OI.

We advance the OI paradigm by integrating relational leadership (Uhl-Bien, 2006) and SET (Cropanzano and Mitchell, 2005). We use Meeker's rules (reciprocity, rationality, altruism, group gain, status consistency and competition) to explain how team members make exchange decision and develop relational leadership in leveraging multicultural skills. We focus on relational leadership as a key boundary condition for KSS and explain how

teams can develop relational leadership which enables KSS through social interaction and relationship building. We found that team members participate in KSS for reciprocity and share knowledge in anticipation of being able to source knowledge and strive for group gain by developing shared understandings and benefits among team members. We demonstrate that most participants with multicultural skills seem to decide to participate in KSS because of rationality and reciprocity by determining mutual benefits of KSS driven by their integrative complexity skills and their need to “give back”. Moreover, if team members hold back knowledge for competition and to maximize the value of benefit for themselves, they are mainly driven by the fear of losing their knowledge and competitive advantage. Our findings suggest that through the process of KSS and leveraging multicultural skills, trustful relationships may be socially constructed and produce relational leadership (Uhl-Bien, 2006). Thus, we argue that the emergence of relational leadership may be used to establish trust through shared understandings among team members to enable KSS.

We contribute to the limited understanding of relational leadership in the context of OI (Cunliffe and Eriksen, 2011; Hosking, 2007; Ospina and Foldy, 2010; Uhl-Bien, 2006). Moreover, we shed light on how social exchange relationships can enable employees to use their multicultural skills to support the emergence of relational leadership defined by shared understandings, trust and mutual benefit, to enable KSS based on the SET framework (Cropanzano and Mitchell, 2005). We identified social exchange relationships as the foundation of collaboration and KSS inside and outside the organization as team members may reciprocate help and support of their team members, work conscientiously for group gain, rationality and status consistency (Meeker, 1971). Driven by the beneficial effects of multicultural experiences on cognitive complexity and cognitive flexibility (Leung and Chiu, 2010), employees with multicultural skills seem to be more willing and able to put the different views of others ahead of their views/ways of doing things (Tadmor and Tetlock, 2006).

Following calls by West *et al.* (2014), we examine multi-level perspectives on OI by studying the views multicultural managers and employees regarding interactions at team and individual levels. Based on our findings, we provide greater understanding of how individuals’ multicultural experiences can be used to support the emergence of relational leadership in teams and across external knowledge partners through facilitating richer social exchange relationships that may enhance KSS.

Management implications

Due to increasing organizational costs and waste in productivity (Schubmehl and Vesset, 2014), it is critical for management to better understand how to enable collaboration and KSS (Puck *et al.*, 2007). Our findings provide managers with a better understanding of how to recognize and enable individual’s willingness and readiness to share and source knowledge. From an HRM perspective, to fully apply OI in the organization, managers will need to ensure HRM practices support the emergence of relational leadership to enhance collaboration. Our results provide a process that managers can turn the challenges of collaborating in functional and culturally diverse teams into opportunities and leverage multicultural skills to support relational leadership and KSS. We suggest organizations engaged in OI consider the components of social exchange as described by Meeker (1971) and utilize reciprocity, group gain, rationality and status consistency as the foundation for relational leadership and KSS.

HRM managers need to create reward mechanisms for successful KSS to provide positive reinforcement for those who give back. Not only can trust and relationship building be a reward for mutual KSS but is also important for individual status (e.g. an individual becomes a valuable for long-term exchange). Furthermore, holding back of knowledge driven by the fear of losing one’s own knowledge (competition) can be prevented through the systematic management of intellectual property rights and establishing job security. Managers should

embrace multicultural experiences through development opportunities for OI experts, such as international assignment, secondments abroad and staff exchanges. Our results also raise implications for the composition of OI teams and selective recruitment of team members, with attention given to multicultural experiences and skills. If shared understandings (e.g. the tolerance of failures) and an open culture is established through interpersonal or collaborative interaction and communication, a benefit for all knowledge exchange partners can be created (group gain). Relational leadership can facilitate trustful relationships and reduce negative attitudes towards KSS through integrating all team members, organizing team building sessions and group workshops. HR managers may facilitate effective relational leadership practices in OI teams by organizing leadership training and coaching. For OI leaders, relational leadership practices seem to be a promising tool to connect people together to facilitate their role as boundary spanners in integrating knowledge from different sources and utilizing novel combinations (Badir *et al.*, 2019; Bogers *et al.*, 2018; Stephens and Carmeli, 2017).

Conclusion

In sum, our findings support that social exchange relationships and multicultural skills may be important to support the development of relational leadership and facilitate subsequent KSS and ultimately OI. This may be especially important in culturally diverse teams and external knowledge partners. The decision for participants to collaborate and participate in KSS is supported by Meeker's (1971) rules, especially rationality, reciprocity and group gain. Despite the value of our findings, this paper is not without limitations. We explained that the focus of this study design was on the work activities of the participants and their skill development and not specific projects or organizations. It was outside the scope of our study to examine variations across organizations and individuals as we wanted to focus on multicultural skills and relational leadership as enablers for OI. We recommend that future studies extend our research by unpacking how various boundary conditions including relational leadership and multicultural skills impact KSS and OI over the life cycle of innovation teams within large multinational organizations, across countries and ethnicities. Our study has provided understandings of the interplay between individuals and their teams, and how relational leadership and multicultural skills may be used to overcome barriers to KSS and enable OI.

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