

STRONG OR INVISIBLE HANDS?
MANAGERIAL INVOLVEMENT IN THE KNOWLEDGE SHARING PROCESSES
OF GLOBALLY DISPERSED KNOWLEDGE GROUPS

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ABSTRACT AND KEY RESULTS

This paper investigates globally dispersed knowledge groups, which are increasingly put in place by MNCs to enhance their knowledge management capabilities. We study factors affecting the knowledge sharing effectiveness in these settings within the MNC, and specifically focus on possible moderating effects of managerial involvement on the relationships of dispersion and trust on the perceived knowledge transfer effectiveness. We test our hypotheses in the context of a large multinational software company. Given conflicting findings in previous research concerning the role of management, this paper contributes to a deeper understanding of how knowledge is shared in globally dispersed settings in the MNC. By taking a mezzo-level approach, it additionally challenges some traditional assumptions on the appropriate level of analysis in studies of knowledge flows within the MNC.

INTRODUCTION

Knowledge sharing across globally dispersed units has been identified as one of the main challenges of the network MNC, where knowledge is becoming ever more crucial to firm success. Many MNCs are struggling to improve their abilities to source from these “pockets of knowledge”, and then recombine and apply the knowledge in other locations, as they have realized that this leveraging capability is the basis of higher performance and a sustained competitive advantage (Barney 1991; Grant 1996; Kogut & Zander 1992). However, when struggling for this capability, one needs to consider that a pure knowledge transfer is probably not as beneficial as the availability of the right knowledge at the right time, and in the right location. This sets focus on the effectiveness of knowledge sharing and takes a dynamic view on knowledge flows (c.f. Ambos & Ambos 2007). In this light, MNCs need to ensure that knowledge is shared effectively throughout the whole organization (Gupta & Govindarajan 2000; Nohria & Ghoshal 1997), and research has shown that this can best happen through the use of informal or formal integrative mechanisms (Hansen & Lovas 2004; Kleinbaum & Tushman 2007). Similarly, Bell and Zaheer (2007), among others, postulate that internal networks facilitate knowledge sharing across the whole MNC.

In the past years, costs for information and communication technology have dramatically decreased, offering new opportunities to connect individuals (both formally and informally) who until then had to travel far to be able to link up. These increased lateral linkages within the overall networked MNC have made it possible for traditionally co-located work groups or communities of practice to evolve into globally dispersed practice groups or networks (Hildreth, Kimble & Wright 2000; Tallman & Chacar 2008). They are a common and useful tool for companies seeking competitive advantage on the global level (Galbraith 2000; Govindarajan & Gupta 2001), and thus pose a possible solution to the abovementioned challenge of knowledge sharing across distances in the MNC.

However, when moving from a co-located to a globally dispersed setting, the question of how much (if any) managerial involvement is necessary becomes key. It is without doubt that these groups must be shaped and cultivated to efficiently identify and use the relevant knowledge, meaning that the structure should be managed consciously (c.f. Kleinbaum & Tushman 2008). The question how to best do this leads us to the identification of a dilemma inherent in many organizational settings in the MNC. It is primarily based on the insight that, on the one hand, co-located knowledge communities evolve naturally (Liedtka 1999) through informal and formal ties between members who successively build up a common architectural knowledge based on their engagement in the same practice or sharing of the same interests (Tallman & Chacar 2008). This natural evolution is possible, as members can easily meet and interact, and the same local demands are put upon them. On the other hand, though, the literature on communities of practice suggests that formal interference in these natural processes may actually hinder the development of relationships (Gulati 1995), and thus is likely to negatively impact knowledge flows. Additionally, an active stimulation of knowledge flows may not always be the best alternative for organizations seeking to derive knowledge benefits – there may well be situations in which knowledge flows are not beneficial to organizations (Ambos & Ambos 2007). Based on these arguments, an “invisible hand” by management seems most appropriate, meaning that management should interfere as little as possible so to not complicate knowledge sharing processes.

Conflicting with this line of arguments, on the other hand, is the insight that when moving to a setting of globally dispersed actors (as is common in the contemporary MNC), these dispersed internal networks actually do need some managerial involvement. As interaction becomes less natural across distances, some actors rarely if ever have the possibility to meet in person (Maznevski & Chudoba 2000). This means that they have reduced possibilities to successfully build the relationships necessary for the development of a common architectural knowledge. Research on communities of practice has examined

whether these networks can purposefully be created (Saint-Onge & Wallace 2003; Thompson 2005; Wenger, McDermott & Snyder 2002), and we tend to posit that managers in settings of dispersion should encourage interaction among the members and enforce meetings so that people can more easily form social relationships (Malhotra, Majchrzak & Rosen 2007) necessary for effective knowledge sharing. For these reasons, globally dispersed knowledge groups need to be supported and managed more actively by a “stronger hand”.

Based on these two contradictory ideas, and similarly to Tallman and Chacar (2008), we posit that managerial involvement is needed for globally dispersed knowledge groups to evolve and remain established in the first place, but that the effects of this interference are somewhat unknown – either, comparable to the co-located setting, it may hinder members of these dispersed knowledge groups in effectively sharing knowledge, or it may actually help them in establishing and maintaining social relationships on which they can base their knowledge flows. In this paper, we try to explore parts of this dilemma and attempt to answer the following question: *In which way does managerial involvement affect knowledge sharing effectiveness in globally dispersed, internal groups?*

In addressing this question, this paper makes three contributions. Firstly, by setting out to investigate the effects of management on knowledge sharing effectiveness in globally dispersed settings, we take a first step in finding an answer to this problem essential to the contemporary MNC. Secondly, this paper adds to the knowledge literature by investigating factors complicating or facilitating knowledge flows within globally dispersed group settings in the MNC. Thirdly, as Bell and Zaheer (2007) have recently pointed out, a deeper understanding is necessary of how knowledge flows within networks at different levels of analysis are affected by geography, both within and across organizational boundaries. Given that increasingly, the MNC’s knowledge is generated by or shared within globally dispersed groups, studying knowledge flows only at the inter-unit level is potentially limiting. Despite some recent

exceptions (e.g. Minbaeva 2008), prior research has largely missed the opportunity to develop a clearer understanding of the micro-foundations of knowledge flows within the MNC (c.f. Felin & Foss 2005; Foss 2008; Foss & Pedersen 2004; Haas & Hansen 2007), and this paper offers a step into this direction by taking a disaggregate mezzo-level approach through the focus on knowledge-sharing group structures.

The following section introduces the concepts of interest in this study and puts forward research propositions which, in our view, future research should examine. We begin with the specifics of globally dispersed group settings that distinguish them from co-located settings. Then, we discuss the possible moderating effects of managerial involvement on group dispersion and trust. The subsequent methodology section lays down the sample, research setting, and the measurement of our constructs. Finally, we present our results and end with a discussion on the managerial and academic implications of our study.

CONCEPTUAL BACKGROUND AND RESEARCH PROPOSITIONS

Knowledge and Communities

Increasingly, scholars have taken up the idea that knowledge creation and dissemination in the MNC takes place in dispersed group structures or communities of practice (Lesser, Fontaine & Slusher 2000; Tallman & Chacar 2008). This insight particularly holds true for epistemically complex (tacit) component knowledge, which needs common architectural knowledge in order to be successfully transferred (Brown & Duguid 2001; Grandori 2001). Membership of such an epistemic community is obtained through engagement in a specific practice (c.f. Brown & Duguid 2001; Hakanson 2005), and while we know that knowledge sharing in these groups can create value for the firm, they do not show in the organizational charts of many MNCs. While this may well be because of the fact that they oftentimes

span organizational boundaries, in many cases they do still remain within the firm, and are often employed as a strategic tool to support knowledge sharing. This again leads us to the question of the role of managerial involvement.

Trust

Network theory predicts that weak ties are favorable for finding new knowledge, whereas strong ties enforce the transfer of complex knowledge (Hansen 1999). Knowledge dissemination is facilitated by strong ties, and several MNCs have tried to establish closed networks of globally dispersed knowledge sharing groups. On the group level, which is the focus of this paper, studies have shown that information and communication technologies cannot prevent breakdowns in the transfer of knowledge across distributed sites (e.g. Chudoba, Wynn, Lu & Watson-Manheim 2005; Cramton 2001). What is more, knowledge needs a common ground of understanding, so that all parties involved in the knowledge sharing process can extract whatever is useful (c.f. Ambos & Ambos 2009). When moving to a dispersed setting, however, the contextual knowledge of other sites is reduced. This increases the coordination complexity in acquiring this “situated knowledge” (c.f. Gibson & Gibbs 2006). For this reason, human-related factors such as trust (Jarvenpaa & Leidner 1999) and interpersonal ties (Ahuja & Galvin 2003; Kanawattanachai & Yoo 2002) have been considered as facilitators of knowledge transfer across dispersed actors. Several researchers have shown that trust and group cohesion (Joshi, Lazarova & Liao 2009; Maloney & Zellmer-Bruhn 2006; Rico, Molleman, Sánchez-Manzanares & Van der Vegt 2007), have a positive effect on group performance. Additionally, it is likely to facilitate knowledge flows through an increased shared understanding (Cramton 2001), and it has been shown to tie dispersed actors together (Fiol & O'Connor 2005). We define trust in group members as an individual’s belief that

group members are competent and can be relied upon to complete their responsibilities toward the group (Joshi et al. 2009; McAllister 1995). Based on these arguments, we hypothesize:

Hypothesis 1: Trust has a positive effect on perceived knowledge transfer effectiveness.

Group Dispersion: Imbalance and Isolation

According to Doz and Santos (1997), knowledge transfers become “eventful” in dispersed and differentiated settings (as opposed to settings of collocation and co-setting), and we aim to identify specific factors that lead to this eventfulness. In their study on the effects of distance on knowledge transfer effectiveness, Ambos and Ambos (2009) find that personal coordination mechanisms (such as permanent work groups) in particular are negatively affected by geographic, cultural and linguistic distance. While even in dyadic settings, distance among two sites has been shown to impair knowledge flows (Hansen & Lovas 2004), it seems reasonable to assume that this effect is magnified in a complex setting of dispersed groups with different configurations. Although research has shown that collocation facilitates knowledge flows, and that occasional face-to-face meetings positively impact the social integration of group members and should therefore be held as often as possible (Jarvenpaa & Leidner 1999; Malhotra et al. 2007), many members of globally dispersed networks rarely or never have the possibility to meet in person. Recent research by Gibson and Gibbs (2006) shows that geographic group dispersion is negatively related to group innovation. The overall effectiveness of purely virtual (i.e. electronically mediated) knowledge flows should thus be lower as opposed to flows between co-located members.

However, globally dispersed practice groups do not only need to bridge geographical distances, but to the extent that the groups consist of members of multiple nationalities also need to overcome cultural

differences. Scholars point out that cultural differences provide great potential to inevitably hinder effective interaction within groups, as they have unconscious and often not addressable consequences on behavior (DiStefano & Maznevski 2000). A number of studies on virtual groups have found negative effects of cultural differences, e.g. on coordination difficulties (Maznevski & Chudoba 2000) or on communication effectiveness (Van Ryssen & Godar 2000).

As argued above, collocation facilitates informal knowledge flows and minimizes miscommunication between dispersed group members. However, not only does the distance alone pose a barrier to these knowledge flows. What seems even more important are the configurational aspects to dispersion (Hinds & Mortensen 2005; Joshi et al. 2009; O'Leary & Cummings 2007). When some members of a group are alone at one site (with no alternative but to exchange knowledge via electronic information and communication technologies) while other members at another site have the possibility to informally meet others face-to-face, this imbalance poses a disadvantage to the culturally isolated members or the members of the smaller subgroup location. Leaving some members of the group out of the loop possibly affects the overall group performance (c.f. Cramton 2001). Another line of reasoning can be found in social categorization theory. Some scholars (Polzer, Crisp, Jarvenpaa & Kim 2006) have pointed to social categorization processes through which groups with geographically imbalanced subgroups show negative outcomes, e.g. communication problems (Cramton 2001; DeSanctis & Monge 1999), reduced trust (Jarvenpaa & Leidner 1999), and more conflict (Mortensen & Hinds 2001). In other words, an uneven distribution across locations (imbalance) may lead to negative (minority or majority) subgroup dynamics. Based on these findings, we argue that the same holds true for knowledge sharing processes, and we hypothesize:

Hypothesis 2: High location imbalance of a group has a negative effect on perceived knowledge transfer effectiveness.

Turning to the cross-cultural aspects of knowledge sharing in globally dispersed groups, we aim to specifically look at situations of subgroup formation based on the nationalities of the group members. Earley and Mosakowski (2000) found evidence that nationality-based subgroups exhibited faultline dynamics even when members were all in the same location. The more members from one nationality, the easier it is for them to communicate and exchange knowledge because of their common understanding. The interaction and informal discussions that occur in these subgroups may cause initial attitudes and stereotypes to become more extreme, and culturally isolated individuals may feel even more remote. These cultural isolates are clearly visible in groups, potentially leading to social categorization. We therefore expect groups with many isolated members (based on differences in cultural backgrounds) to share knowledge less effectively because of their members' differing attitudes and opinions, as well intra-group social categorization processes. In light of this argumentation we advance the following hypothesis:

Hypothesis 3: High cultural isolation of a group has a negative effect on perceived knowledge transfer effectiveness.

Managerial Involvement

Leadership in globally dispersed group settings is a particular challenge, as leaders have to exercise control without seeing or directly experiencing the subordinates (Hertel, Geister & Konradt 2005; Joshi et al. 2009). Although Martins and colleagues (2004) mention leadership as a moderating factor of group performance in virtual settings, they posit that not enough research has been conducted on this topic. Webster and Wong (2008) underline the relevance with their finding that employees see leadership as a critical success factor for the performance of virtual groups. Some authors, such as Pauleen (2003), have

investigated how leaders develop relationships with their dispersed group members. Their findings show that the benefits of relationship building in these groups can include higher task performance, increased information exchange, as well as increased group effectiveness (Pauleen 2003). A recent study by Joshi et al. (2009) specifically investigates the role of inspirational leadership in globally dispersed knowledge groups and emphasizes the importance of this particular leadership type for the development of group trust and commitment, both of which are positively associated with group performance.

Since interaction becomes less natural across distances, research on communities of practice has examined whether these networks can purposefully be created (Saint-Onge & Wallace 2003; Thompson 2005; Wenger et al. 2002), especially because some actors rarely or never have the possibility to meet in person (Maznevski & Chudoba 2000). This means that they have only reduced possibilities to successfully build relationships and common architectural knowledge. Based on this, managers in these globally dispersed settings should actively encourage interaction among the members and enforce meetings. That way, members can form social relationships with each other (Jarvenpaa & Leidner 1999; Joshi et al. 2009; Malhotra et al. 2007), or build up common architectural knowledge, both of which serve as a prerequisite for successful knowledge sharing. We can thus assume that purposeful managerial involvement may have a positive impact on the knowledge sharing processes through an effect on the social integration or trust in the group.

However, another stream of literature comes to different conclusions. Research on communities of practice by Gulati (1995) has shown that formal interference may actually hinder the development of these social relationships, and managerial involvement might therefore have a negative effect on knowledge flows. Moreover, active stimulation of knowledge flows may not always be the best alternative for organizations seeking to derive knowledge benefits – there may well be situations in which knowledge flows are not beneficial to organizations. Based on these arguments, an “invisible

hand” by management seems most appropriate, meaning that management should interfere as little as possible so to not complicate knowledge sharing processes. Therefore, we hypothesize:

Hypothesis 4: Managerial involvement negatively moderates the positive relationship between trust and perceived knowledge transfer effectiveness.

Additionally, the effects of managerial involvement on the social categorization processes occurring in dispersed settings are unknown. We argue that management, when aware of the possible pitfalls of imbalanced subgroups and isolated members, will tone down these negative effects. Based on the arguments above, we put forward the following two hypotheses on group dispersion:

Hypothesis 5: Managerial involvement positively moderates the negative relationship between location imbalance and perceived knowledge transfer effectiveness.

Hypothesis 6: Managerial involvement positively moderates the negative relationship between cultural isolation and perceived knowledge transfer effectiveness.

Figure 1: Research Model
Figure 1 summarizes the proposed research model.

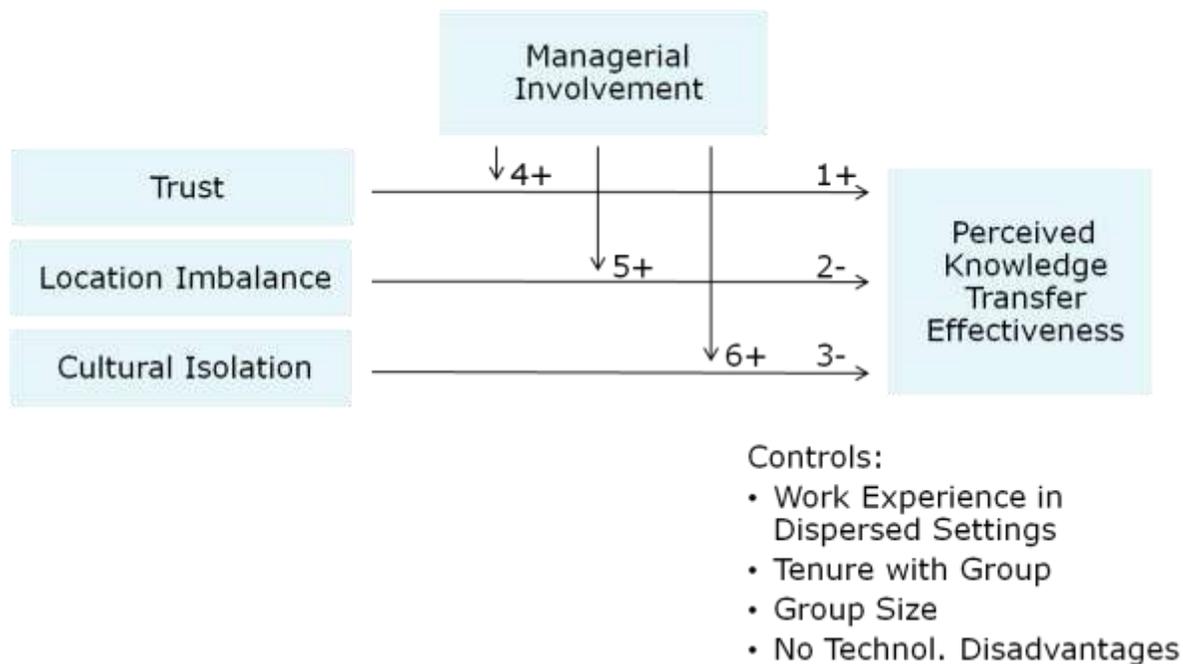


Figure 1: Research Model

RESEARCH SETTING AND SAMPLE

We tested our hypotheses as part of an exploratory study in a quasi-experiment in a controlled setting of one firm. More specifically, we collected data from the consulting division of one of the world's five largest software multinational companies. Access to the company was negotiated through two senior managers and the division's vice-president, who also acted as the company's sponsor for our research. Initial interviews with ten managers in various groups and positions within the division helped us to understand the research setting and to develop the survey instrument. The company, which has annual sales of more than \$10 billion, is involved in developing, selling and consulting a range of IT solutions, and is headquartered in Europe. The organization under study was, at the time of our study, structured into ten fairly autonomous operating divisions around industries or solutions. To perform their consultancy tasks, the division was organized into expert groups in which the members were supposed to share their experiences with consulting projects, their expertise and knowledge of the

industry or the IT solution with each other. Their overall goal was to enhance everybody's performance on the consulting projects by ensuring that everybody had the same level of expertise. These expert communities/groups were permanently established (as opposed to temporary consulting projects), and our respondents had been on them for an average of 32 months. In the initial interviews, the groups' managers pointed out the importance of group stability and the development of a common group identity in order to develop a common architectural knowledge, so that more knowledge could be built up as a whole. The groups' members all had the same hierarchy level, and the nature of their work made the groups truly dispersed. The managers of these groups were treated as additional group members, but with a special role regarding coordination of meetings, and trying to ensure that knowledge was being shared. The common objective of all the groups lent the setting perfectly to test our propositions. In total, the division consisted of 631 individuals distributed over 30 groups.

We collected both archival and survey data. Data collection for our dependent variable and the controls took place during May-July 2007 via a web-based survey located on a secure server. A support letter from the division's vice-president and the assurance that all data would be treated confidentially and would only be accessible by the research group aimed to ensure a high response. At the time we closed the survey, 231 (36.61%) responses were logged. Responses were comparable across key demographic variables. Out of the 231 cases, 44 cases had to be deleted due to missing value problems, leaving us with 187 individual cases distributed over 27 groups, corresponding to a final response rate of 29.64%. The survey helped to collect perceptual data on variables like trust, as well as our dependent measure and several control variables. Data for the dispersion measures was directly obtained from the company records, allowing us to calculate complete group configurations for each group, irrespective of missing or non-responding cases. In total, group members were dispersed over 45 different city locations and 40 nationalities (where as a matter of work requirements, nationality and office location

quite often were not identical). On average, there were 21 members to each group (sd=9.4), dispersed over approximately 6 different city locations and 5 different nationalities per group.

MEASURES

Our dependent variable in all regressions is the *perceived knowledge transfer effectiveness* within the group. In aiming for satisfaction with knowledge flows rather than flow intensity, our research responds to recent suggestions to tie measures of knowledge flows closer to the benefit or effectiveness of transfers (Haas & Hansen 2005; Mahnke, Pedersen & Venzin 2006; Schulz 2003). To capture the construct we relied on the scale developed by Becerra-Fernandez and Sabherwal (2001). The 8 items were subjected to a confirmatory factor analysis to ensure unidimensionality (Cronbach Alpha = 0.900). For further analysis we standardized this variable by subtracting the mean from the value and dividing by the standard deviation, setting the mean to 0 and the standard deviation to 1.

To assess the level of *trust*, we adapted the scale developed by Jarvenpaa and Leidner (1999) (7 items, Cronbach Alpha = 0.835). We conducted a factor analysis to confirm unidimensionality. The factor score was subsequently entered into the models. We standardized this variable by subtracting the mean from the value and dividing by the standard deviation, setting the mean to 0 and the standard deviation to 1.

The *location imbalance* index of the group takes the standard deviation $(n_i, n_j, \dots, n_k)/N$, where k is the total number of sites represented in the group, n_i is the number of group members in the i th site, n_j is the number of group members in the j th site, and N is the total number of group members across all sites. We obtained the data for this measure from corporate records

To compute our *cultural isolation* measure we used the members' national backgrounds. Specifically, we adapted the Isolation Index presented by O'Leary and Cummings (2007) to a cultural measure, and define it as the percentage of members who have a nationality different from the rest of the group, with low values of the index indicating low levels of overall cultural isolation. We obtained the data for this measure from corporate records. As above, the index ranges from 0 (0% of members from one nationality alone) to 1 (all members with different cultural values). The Cultural Isolation index is calculated as $CultIso_{Group} = n_{iso}/N$, where n_{iso} is the number of isolated members by nationality, and N is the total number of members on the group.

Finally, we measured *managerial involvement* through a self-developed scale consisting of 12 items (Cronbach Alpha = 0.931). We conducted a factor analysis to confirm unidimensionality, and entered the factor score subsequently into the models. We standardized this variable by subtracting the mean from the value and dividing by the standard deviation, setting the mean to 0 and the standard deviation to 1. Sample items include "Our manager helps the group", "Our manager helps to establish group spirit", "Our manager offers guidance for job-related issues", or "Our manager is open to new ideas".

We added four control variables to further specify our model. Firstly, we assessed the members' work experiences in dispersed settings in months. Secondly, we entered the members' tenure with the group (in months). Thirdly, we assessed the group size. The fourth control variable measured to what extent the members had technological disadvantages as compared to their colleagues, e.g. regarding internet access. This seemed important, as in our initial interviews, we were told that these issues were existent depending on the location. The existence of technological disadvantages was measured on a scale from 1 to 5, where a score of 5 equals to having no technological disadvantages.

STATISTICAL METHOD

Moderated multiple regression was used to test our hypotheses, using Stata SE 10.1 with robust clusters (fixed effects) to control for the nesting effect of group membership. Data was carefully examined with respect to linearity, homogeneity of variance, and normality. No serious deviations were detected. The descriptive variables are reported in Table 1.

<i>Variable</i>	<i>Mean</i>	<i>S.D.</i>	<i>Min.</i>	<i>Max.</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>	<i>4.</i>	<i>5.</i>
1 Perceived Knowledge Transfer Effectiveness ^a	0	1	-2.788	2.557	1				
2 Management ^a	0	1	-4.394	1.488	0.492**	1			
3 Trust ^a	0	1	-2.670	2.028	0.492**	0.499**	1		
4 Location Imbalance	0.088	0.034	0.038	0.149	-0.034	0.015	0.074	1	
5 Cultural Isolation	0.050	0.038	0	0.150	-0.093	-0.093	-0.135	-0.672**	1

N = 187

** Correlation is significant at the 0.01 level (2-tailed).

^a Variable is standardized by subtracting the mean from the value and dividing by the standard deviation, setting the mean to zero and the standard deviation to one.

Table 1: Descriptive Statistics

The results of our regression analyses are displayed in Table 2. Variables were entered sequentially in four blocks. All models are significant and explain between 35.12% and 37.84% of the variance in the perceived knowledge transfer effectiveness. Model 1 constitutes the base model with all direct effects, while Models 2, 3 and 4 display separate results for the interaction effects. We constructed 3 interaction terms by multiplying the values for trust, imbalance and isolation with the values of managerial involvement. These interaction terms are introduced separately in models 2-4. To avoid potential multicollinearity issues, we did not introduce all interaction terms jointly.

		<i>Hypothesized Relationships</i>	<i>Model 1:</i>	<i>Model 2:</i>	<i>Model 3:</i>	<i>Model 4:</i>
	Constant		.23 (.49)	.22 (.49)	.17 (.51)	.28 (.52)
<i>Controls:</i>	Experience in Dispersed Settings		.00 (.00)	.00 (.00)	.00 (.00)	.00 (.00)
	Tenure with the Team		.00 (.00)**	.00 (.00)**	.00 (.00)*	.00 (.00)**
	Team Size		.01 (.01)	.01 (.01)	.01 (.01)	.02 (.12)
	No Tech Disadvantages		.00 (.00)***	.00 (.00)***	.00 (.00)***	.00 (.00)***
<i>Direct Effects:</i>	Management		.35 (.08)***	.36 (.08)***	.79 (.15)***	.12 (.09)
	Trust	1+	.33 (.09)***	.33 (.09)***	.29 (.09)***	.29 (.09)***
	Location Imbalance	2-	-4.92 (2.29)**	-4.91 (2.30)**	-4.672 (2.41)*	-5.66 (2.55)**
	Cultural Isolation	3-	-3.06 (2.01)	-3.12 (1.94)	-2.91 (1.86)	-4.264 (2.09)**
<i>Interaction Effects:</i>	Management * Trust	4+		.02 (.06)		
	Management * Location Imbalance	5+			-4.41 (1.42)***	
	Management * Cultural Isolation	6+				5.16 (1.30)***
	R ²		0.3512	0.3516	0.3757	0.3784
	F Value		17.94***	17.56***	31.34***	35.74***
Dependent Variable = Perceived Knowledge Transfer Effectiveness						
* p < 0.1; ** p < 0.05; ***p < 0.01						
N° Observations =187; N° Teams = 27						
Robust standard errors are displayed in brackets.						

Table 2: Regression Analysis of Perceived Knowledge Transfer Effectiveness.

RESULTS

Regarding our control variables, a long tenure with the group is positively related to the perceived knowledge transfer effectiveness. Intuitively, is more difficult for new members to effectively share knowledge with others than for those who have been on the group longer and know the others well, so this finding is well in line with theory. Secondly, not having technological disadvantages increases the perceived knowledge transfer effectiveness. Again, this is not surprising, as facing technological problems when trying to share knowledge with others obviously decreases the perceived effectiveness. The two other controls were not significantly related to perceived knowledge transfer effectiveness.

Turning to our hypothesized direct effects, our results show the following: As hypothesized, trust is positively associated with the perceived knowledge transfer effectiveness. Secondly, the direct effect of location imbalance is negatively related to the perceived knowledge transfer effectiveness in models 1, 2 and 4. Lastly, while cultural group isolation fails to reach significance in models 1-3, its effect on perceived knowledge transfer effectiveness is negative and significant in model 4.

Next, we present the moderating effects of managerial involvement in models 2-4. We hypothesized that the relationship between trust and perceived knowledge transfer effectiveness would be positively moderated by management, and that management would mitigate the negative effects of location imbalance and cultural isolation on perceived knowledge transfer effectiveness. Thus, support for our hypotheses would assume a negative and significant coefficient for the interaction effect of management and trust (H4), for the interaction effects of management and location imbalance (H5) as well as management and group isolation (H6). As reported in Table 2's Model 2, Hypothesis 4 on the moderating effect of managerial involvement on the relationship between trust and perceived knowledge transfer effectiveness is not supported. While the direct effect of trust on KE is significant, the moderated effect by managerial involvement does not reach significance. As Figure 2 depicts, the relationship between trust and the perceived knowledge transfer effectiveness is positive, but is not influenced by managerial involvement. However, independent of trust, higher managerial involvement means higher knowledge transfer effectiveness.

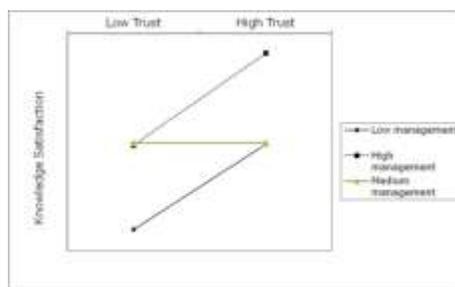


Figure 2: The moderating effect of managerial involvement on the relationship between trust and the perceived knowledge transfer effectiveness.

Including managerial involvement as a moderator for the two dispersion variables (location imbalance and cultural isolation) increases the R2 significantly. Surprisingly, however, the moderating

effect of managerial involvement on the relationship between location imbalance and perceived knowledge transfer effectiveness is negative and significant, as Table 2's Model 3 shows. This means that for highly imbalanced groups, managerial involvement can impair perceived knowledge transfer effectiveness. Figure 3 depicts this result, and shows that high managerial involvement has more positive effects on perceived knowledge transfer effectiveness at low imbalance than low managerial involvement. Additionally, low managerial involvement improves perceived knowledge transfer effectiveness in groups with high imbalance only marginally, compared to low imbalance groups. A high managerial involvement in highly imbalanced groups clearly diminishes knowledge transfer effectiveness, but still produces higher perceived knowledge transfer effectiveness than with low managerial involvement. These interesting findings need further analyses and attention, and we will turn to these in our discussion.

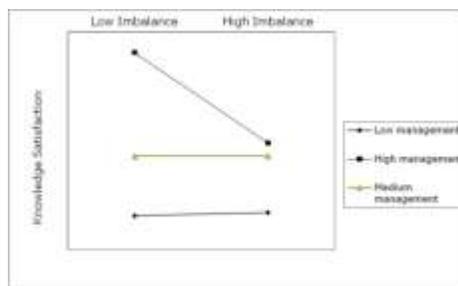


Figure 3: The moderating effect of managerial involvement on the relationship between location imbalance and the perceived knowledge transfer effectiveness.

Regarding the moderating effect of managerial involvement on the relationship between cultural isolation and perceived knowledge transfer effectiveness, our results are as expected and can be found in Model 4 of Table 2. Although the direct effect of cultural isolation on perceived knowledge transfer effectiveness is negative, managerial involvement can mitigate this relationship and turn it into a positive effect. Figure 4 illustrates this result. As can be seen, high managerial involvement has more

positive effects on perceived knowledge transfer effectiveness in both low and high isolation groups than low managerial involvement (without a big difference in low and high isolation groups). Furthermore, low managerial involvement means clearly higher perceived knowledge transfer effectiveness in low isolation groups than in high isolation groups, but this remains under the level of perceived knowledge transfer effectiveness with high managerial involvement.

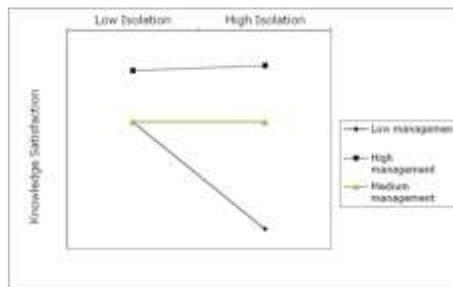


Figure 4: The moderating effect of managerial involvement on the relationship between cultural isolation and the perceived knowledge transfer effectiveness.

DISCUSSION

Knowledge sharing in geographically dispersed communities or group of experts has become the norm rather than the exception in the contemporary MNC. This creates new challenges for managers of such knowledge sharing communities, and opens up the floor to interesting questions such as the unknown effects of managerial involvement on some of the antecedents to knowledge sharing effectiveness. Drawing on different streams of research, we highlight the importance of managerial involvement to mitigate the effects of group dispersion and their role in the social integration process of such groups. By providing new and empirical evidence on how managerial involvement affects the knowledge flows within a knowledge sharing group of experts, our study aims at deepening our understanding on knowledge flows within the MNC in general, and within group structures in particular. The results of our study in the controlled setting of one firm provide an interesting and only partly

intuitive picture. In particular two of our findings – the non-findings with regards to the moderating effect of managerial involvement on the relationship between trust and perceived knowledge transfer effectiveness, as well as the negative effect of managerial involvement on the relationship between location imbalance and perceived knowledge transfer effectiveness – warrant a more extensive discussion.

With regards to trust, we argued that because interaction becomes less natural across distances, it becomes particularly difficult for members of globally dispersed knowledge groups to establish the social relationships and trust necessary for an effective sharing of complex and tacit knowledge. This, we argued, would require managerial involvement. However, findings from the co-located setting where managerial involvement destroys the social relationships necessary for successful knowledge sharing, led us to propose a negative relationship. Yet, our results support neither of the two notions. While trust is positively associated with knowledge transfer effectiveness, this relationship is not influenced by managerial involvement at all. This indicates that once trust is established, the manager cannot do much about it, turning this into an interesting and possibly comforting finding. However, other scholars have shown that management can positively influence the creation of trust, meaning that a manager's job regarding trust actually starts earlier.

Secondly, we turn to the surprising result concerning location imbalance. We were expecting the moderating effect of managerial involvement to be positive, however our results show a negative sign. We can only speculate on this, and cannot confirm with our data at this point, but it is well possible that the manager tends to be located with the larger subgroup in highly imbalanced groups. By this, extra attention might be warranted to the imbalance, and the dividing line to knowledge sharing between the majority subgroup and smaller subgroups might be reinforced. This would, in turn, increase the potential for categorization processes with negative effects on the knowledge transfer effectiveness. In

order to fully explain this, further analyses will need to be conducted to find out whether the location of the manager is connected to the location imbalance.

Collectively, our results reveal that managerial involvement in the knowledge sharing processes of globally dispersed expert groups affects the knowledge transfer effectiveness in different ways. While management cannot influence the level of trust in such groups, it is important to pay attention to the configurational aspects of dispersion. These may create subgroup dynamics and complicate the knowledge flows, and the effects of managerial involvement in these processes are mixed and contradictory. While problems connected to cultural isolation can be mitigated by management, problems connected to location imbalance are even aggravated.

CONCLUSION

In light of the persistent need to further our understanding on knowledge flows within MNCs, our paper probed into the role of managerial involved in dispersed knowledge sharing communities. Research has found that much knowledge flows through semi-formal or informal networks, in which members are often separated by culture and space. What has been less clear is to what degree managerial intervention is beneficial or detrimental to these knowledge flows. In fact, as shown in this paper, different streams of literature come to somewhat opposing conclusions on this topic, thus warranting further research on this issue. Our study offers a first empirical approach to this question. Additionally, by shifting the focus of further research endeavors on groups, communities or individuals (as done in this paper), we may gain a more thorough understanding on what ultimately drives knowledge sharing performance in the MNC. In this respect, our paper follows a recent call by Foss (Foss 2008) and others to tackle the micro-foundations of knowledge management.

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