INFORMATION TECHNOLOGY AND SOCIAL LOAFING: A QUALITATIVE INVESTIGATION

Research-in-Progress

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Abstract

While ICT-supported teams are increasingly popular, most suffer from a phenomenon called social loafing (SL). SL is the tendency to withhold one's effort when working with others. Past research has examined various determinants and mechanisms of SL but the relationships between IT and SL have remained largely unexplored. Our objectives are to identify the key factors that play a role in SL in ICT-supported groups and to investigate how IT can influence SL. Drawing from the literature and on the basis of seven case studies, we identified four categories of factors related to personal, group, context and type of task. We will conduct additional cases to advance our theory development on the influence of IT on SL. The implications for research are important since this study will provide a better understanding of the determinants of SL and the role IT can play in influencing such behaviors in teams and organizations.

Keywords: Social loafing, ICT-supported teams, multiple case study, IT management

Introduction

With the advent of information technology (IT) in organizations, most teams exploit various information and communication technologies (ICT) to come up with better analysis procedures and determine more effective solutions. ICT-supported team-based structures are becoming more common in today's firms. This increasing trend towards team-based structures is also due to the belief that teams have "better informational resources" than a single individual (Alnuaimi, Robert & Maruping, 2010). Thus, to survive in current complex environments, organizations put forth team work as a way to nurture the creativity and innovation that is required for remaining competitive. The assumption is that the performance of teams is equal or greater than that of the sum of each individual's contribution. However, the evidence shows that when individuals work in groups, they input less effort compared to the time they work alone (Latané, Williams, & Harkins, 1979; Karau & Williams, 1993; Shepperd 1995; Murphy, Wayne, Liden, & Erdogan, 2003). The tendency to withhold efforts in the presence of others in a team is called *social loafing* (SL) (Jassawalla, Sashittal, & Malshe., 2009; Latané et al., 1979; Karau & Williams, 1993; Shepperd 1995).

Previous research has generally investigated the sources of SL. Most explanations are provided with regard to the factors underlying SL such as characteristics of individuals (Latane 1981), groups (Gallupe, Dennis, Cooper, & Valacich, 1992), tasks at hand (Harkins & Petty, 1982), as well as the effect of such behaviors on performance. Due to the increasing use of IT within firms, there has been a growing interest in the area of SL in ICT-supported contexts (Chidambaram & Tung, 2005; Blaskovich 2008; Suleiman & Watson, 2008; Lin & Huang, 2009). While some authors used a specific theory or a narrow set of factors to explain SL in IT-related contexts (e.g. Shiue, Chiu, & Chang, 2010), many have looked at IT solely as a contextual factor that plays a marginal role in group performance (Piezon & Ferree, 2007).

Yet, in extant research, the nature of the relationship and processes explaining how IT can influence the emergence of SL in groups has remained unexplored. The objective of this paper is first to identify the key factors and mechanisms that play a role in SL in ICT-supported groups. Second, it aims at understanding how IT influences SL and how it could actually be used to reduce SL. The study is based on data collected from seven cases within a consulting firm and uses a qualitative, analytic induction strategy.

Literature Review

Social Loafing Conceptualization

In extant literature, SL has been discussed widely as an important, mostly negative factor that can impact a group's outcome. Since Ringelmann's early work on SL (cited in Kravitz & Martin, 1986), many definitions have been proposed for SL. Some authors looked at it as a psychological phenomenon, and tapped into the cognitive and internal aspects of SL (e.g. Kerr & Bruun, 1983; Harkins & Szymanski, 1989). They generally defined SL as a loss of motivation or a perception that one can profit from others' contributions in groups because of a reduced recognizability of individual contributions. In contrast, other scholars have focused more on the observable aspects of this behavior and discussed the visible and external outcomes of SL (e.g. Earley 1989; Jassawalla, Sashittal, & Malshe, 2009). These authors mainly defined SL as the tendency to reduce efforts in the presence of others. For instance, in a study on students' perceptions of SL, the authors conceptualized loafing as an action that "relates to the multiple facets of slacking off and free riding in the presence of others" (Jassawalla et al., 2009, P43). A third category of definitions considered both dimensions of SL. Karau and Williams (1993) for instance defined SL as the decrease in motivation as well as a reduction in efforts when "individuals work in the real or imagined presence of others with whom they combine their input" (p.681). In this study, we adopt this definition, which encompasses both aspects of SL behaviors.

In terms of theoretical foundations, research on SL was triggered by the experiments done by Ringelmann, who examined people in a tug-of-war situation where individuals pulled a rope attached to a strain gauge. Surprisingly, the results revealed that the total group force was significantly less than the sum of individual efforts. Subsequent works replicated these results in different contexts (e.g. Ingham et al., 1974; Latané et al., 1979). Besides Ringelmann's efforts, several other theoretical explanations

emerged to interpret SL in a wide variety of tasks and contexts. These explanations generally follow four main theories, which are summarized in Table 1.

Table 1. Principal Theories of Social Loafing		
Theory	**Description**	**Sources**
Social Impact Theory	Increasing the number of members in teams reduces the pressure on individuals as the burden is divided among more people. This decrease of social forces on individuals results in less participation.	Latané et al. (1979)
The Free Rider Theory	People logically free ride by reducing the costs relative to the benefits they receive. Free-riding desire is a function of organizational costs, group size, variation of interests and incentives.	Albanese & Van Fleet (1985)
Social Comparison Theory	There is a tendency for people to consider outside reference points in order to assess their own abilities and skills. Thus, individuals match their performance to that of their colleagues.	Festinger (1954); Goethals & Darley (1987)
The Theory of Social Compensation	"People will work harder collectively than individually when they expect their co-workers to perform poorly on a meaningful task" (p. 570).	Williams & Karau (1991)

Determinants of Social Loafing

We reviewed the extensive body of literature on the factors that might foster or inhibit SL and classified them into four categories: personal, group, contextual and task-related factors (see Table 2).

Personal Factors: Many scholars addressed the importance of individuals' personal characteristics on SL. Most of them focused on the role of *individual differences* (Jassawalla et al., 2009), which refer to a broad range of factors relevant to personal traits and individual characteristics including personality, gender, age and motivation. Studies have shown that individuals who suffer from low self-efficacy and self-confidence, those who believe they are better than others, and those who show low motivation for achievement are more likely to loaf than others (Hart, Karau, Stasson, & Kerr 2006). Besides individual differences, the perception of *individual evaluation* could influence SL. When participants' outputs are aggregated, efforts get mixed and become separately unidentifiable. Consequently, individuals do not receive any reward or punishment for their individual performance (Harkins & Jackson, 1985), which results in an increased tendency toward loafing.

Group Factors: The results of Ringelmann's experiment have shown that as *group size* enlarged, group performance was significantly lower than the sum of individual efforts (Kravitz & Martin, 1986). As per social impact theory, bigger group size results in reduced effort and augments loafing (Albanese & Van Fleet, 1985; Karau & Williams, 1993). In addition, researchers noted that identification with multiple reference groups (*multiple memberships*) can create inconsistencies in individuals' behaviors. Earley (1989) showed that in cultures where self-sufficiency and control leads to membership in multiple groups, there is a greater tendency toward loafing. Research has also shown that individuals with a robust *group identity* eagerly identify themselves as team members, hence interact more with group members and vice versa (Bouas & Arrow, 1996, p.156). When the identity of individuals is congruent with group identity, members become more motivated and activated toward group activities (Rogers & Lea, 2005). In such situations, individuals value group outcomes and have fewer inclinations toward SL. Similarly, *trust* is another reason for joining, staying and contributing to groups (Lin & Huang, 2010). Trust or "the willingness of a party to be vulnerable to the actions of another party" (Mayer, Davis, & Schoorman, 1995, p. 712) can result in increase of members' performance and less loafing in the team; conversely, a lack of trust can bring about SL (Hashim & Tan, 2009; Lin & Huang, 2009).

Contextual Factors: Contextual factors were also found as key in the emergence of SL in teams. In *collectivistic cultures*, individuals will "subordinate their personal interests to the goals of their [...] in-group membership" (Earley & Gibson, 2002, p.107), and as a result, SL is less likely to occur. In contrast, in *individualistic cultures,* self-sufficiency and individual benefits are valued. Earley (1989) showed that in such cultures, SL will occur because it helps to attain individuals' gains. More recently, scholars emphasized *justice* as another contextual factor that affects SL. In the context of organizations, two types of justice can drive SL (Liden et al., 2004): *Distributive and procedural justice.* Distributive justice refers to how an individual perceives the distribution of rewards (Piezon & Ferree, 2007), whereas procedural justice is associated with the perception of the fairness of procedures and policies. There is evidence showing that SL is limited under the condition of contingent rewards and incentives and the perception of fairness of procedures (Karau & Williams, 1993).

Task-related factors: Shea & Guzzo (1987) argued that the perception of individuals about "the degree of task-driven interaction among work group members" (p. 331) – or simply, *task interdependence* – partly controls individuals' performance in a group. Earlier research indicated that where they cannot show their discrete contributions, individuals are strongly inclined to reduce their effort. Therefore, in cases where there exists a high perception of task interdependence, individuals tend to slack off because they believe that their efforts will not be distinguished from those of others when evaluated by managers (Liden et al., 2004). Conversely, *task visibility* could contribute to less SL. Task visibility is the extent to which individuals perceive others (e.g. supervisors) as conscious of their efforts (Tan & Tan, 2008). However, when they work in groups where task visibility is low, individuals are "lost in the crowd" and their efforts are indistinguishable from others (Latané et al., 1979). Hence, they reduce their efforts as the increase or decrease in efforts will not affect performance, and neither a reward nor a punishment will follow (Liden et al., 2004). Another factor is that of *task difficulty and uniqueness*. During a series of experiments, Harkins and Petty (1982) found that individuals performing a difficult task exert a higher degree of effort. Also, when individuals identify their inputs as unique and not redundant with others, they are likely to view their efforts as needed and necessary for group success. SL could also arise when participants perceive their contributions as *dispensable* and not needed for the accomplishment of a task (Dennis et al., 2005). Based on experiments with 189 undergraduates, Kerr and Bruun (1983) found that on *disjunctive tasks* (each individual's contribution is visible), members with low capability perceived their efforts as more dispensable, and thus, exerted less effort compared to high capability members. In contrast, on *conjunctive tasks* (only overall contribution is visible), high-ability members felt more dispensable and exerted less effort.

Table 2: Key Factors Affecting Social Loafing	
Category	**Factors**
Personal Factors	• Individual Differences • Individual evaluation
Group Factors	• Group size • Multiple membership • Group identity • Trust
Contextual Factors	• Culture (individualism vs. collectivism) • Justice (distributive vs. procedural)
Task-related factors	• Task interdependence • Task visibility • Task difficulty and uniqueness • Dispensability of efforts

Social Loafing in Information Systems Research

Information systems (IS) research on SL is rather limited and the role of IT artifacts in the emergence of SL in such contexts has been largely ignored. Only a few studies have examined a large variety of SL determinants to see if they are influential in IT-enabled contexts. In fact, IS studies on SL primarily have

followed two main research streams. The first stream examines the prevailing theories of SL and applies them in various contexts. Studies in this category focus on the emergence of SL in IT-related contexts such as electronic brainstorming (e.g. Gallupe, Dennis, Cooper, & Valacich, 1992; Dennis et al., 2005) and computer-mediated communication environments (Yoo & Alavi, 2001) and examine the different determinants of such behaviors (e.g. Alnuaimi et al., 2010). For instance, Dennis et al. (2005) tested the effect of group size on SL in electronic brainstorming teams; their results showed non-significant correlation. Piezon and Donaldson (2005) investigated the influence of several factors (such as task interdependence and visibility, justice, group size, cohesion, colleagues' loafing, and group dominance) on SL in virtual study teams. Similarly, Chidambaram and Tung (2005) examined the effects of two factors on SL: the *dilution effect* and the *immediacy gap*. The results of their controlled experiments showed that in small groups, less dilution (not being submerged in a group) is associated with increased individual contributions. However, results on the immediacy gap (being isolated from the group) were mixed. In a recent study, Alnuaimi et al. (2010) used moral disengagement theory to understand why people engage in SL behaviors. Considering primary cognitive mechanisms, they posited that diffusion of responsibility, attribution of blame, and dehumanization can mediate the influence of group size on the presence of SL.

The second stream of research on SL examines the negative impacts of SL on performance in IT-related contexts, and tries to identify ways to mitigate such effects. In an early study, Shepperd (1995) showed that SL damages the performance of electronic brainstorming groups and that social comparison may compensate for its negative effects. More recently, Suleiman and Watson (2008) determined the role of collaborative technologies in fostering/inhibiting SL. They have found that on the one hand, collaborative technologies inhibit SL because they provide a good structure with which to maintain focus on task deliverables. On the other hand, these technologies also encourage SL because they combine different inputs and make each specific one difficult to identify.

Methodology

Given the exploratory nature of the study, a qualitative approach was deemed appropriate for our research (Patton 2002). We followed an analytical induction approach (Katz 2001; Rivard, Lapointe, & Kappos, 2011). By integrating analysis of our data with insights from literature, we develop an understanding of the factors that are important in SL and the role of IT on SL in teams.

Interviews represented our primary source of data. The interview guide was developed based on extent literature with 26 what, how, and why questions, using probes and prompts as needed to get additional information. It was further refined in four rounds to ensure accuracy, completeness and clarity; after each round, the questionnaire was refined and modifications were applied. The guide began by a very general question on SL in groups and then moved on to more specific questions to explore each category of factors (personal factors, group factors, contextual factors, task-related factors) and the potential interaction of IT in modifying SL behaviors or changing the role of other antecedents on SL. Another general question was asked in the end to allow interviewees to provide additional insight on SL and the effect of IT usage on the team's SL.

The data was collected by the first author in a consulting firm. The company has been working in the energy industry for over 25 years. There are five main departments in the studied context, and they were all using an in-house developed ERP system. The system embeds five main modules, namely project management, sales and marketing, human resource and payrolls, administration, and logistics. The role of the ERP was to integrate the flow of work processes and facilitate communication and collaboration within and between sixteen company offices. The task allocation system was straightforward; at each level of the organization, tasks are distributed to employees and deliverables are set by managers. In addition, the progress and accomplishments of the tasks are documented in the system. Various reporting tools and applications help managers to control the workload within their team/department/office and monitor progress, quality, and timeliness of the tasks and missions. Besides, the system allows for electronic communication and all managers and employees are required to communicate with system enabled emailing system, other means of communication such as emails and chats. We focused on this system's usage and tried to understand whether and how ERP usage might influence the emergence or decline of SL by gathering data from different teams within the firm.

Using a purposeful sampling strategy (Patton 2002), seven teams were selected. The teams were different in terms of size, department they are associated with, and type of tasks they were doing; this helped us to maximize variation (see Table 3), though still allowed for comparison (Patton 2002). We conducted face-to-face semi-structured interviewed with managers of each team. The choice of team managers for interviews was deemed appropriate as they were all representative of their group, and had a thorough knowledge of their team members and their activities. The interviews took place during working hours and was recorded in its entirety and transcribed verbatim. On average, interviews lasted for an hour.

The interview data was recorded in a data repository for coding and analysis. First, the interviews were coded using standardized methods of qualitative analysis (Patton 2002). NVivo 9 was used to support the coding and analysis of the transcripts. Then, the coding and analysis was performed using guidelines for analytic induction (Katz, 2001). In order to identify relevant additional categories and relationships, we first proceeded with a round of open coding for each case. Then, following an axial coding strategy (Corbin and Strauss, 2008) codes with the same content and meaning were grouped into three categories: antecedents, SL behaviors and IT effect.

Following Eisenhardt (1989), we analyzed our data in two steps. First, a *within-case analysis* is carried out to help us gain familiarity with the data and generate insights for each case. First, we developed an overall description of the team, their responsibilities a short description on the applications they use for their work and how the team uses them. Each case was further examined to find out about the potential drivers of SL. Then, relevant to each antecedent of SL we discussed the patterns of the role of IT on SL occurrence or lack thereof.

Second, to gain a richer perspective, we use a *cross-case analysis* to search for commonalities as well as differences between cases. At this step, we are in the process of using a comparative case analysis to examine the influence of our determinants on SL across cases, and to identify patterns of IT effect over SL (Eisenhardt 1989). To develop a theoretical explanation of the role of IT on SL, we will build upon our inductive approach to uncover revealing patterns. (Patton 2002).

Table 3: Description of the Cases					
#	Interviewee's Position	Work Environment	Interviewee Team	Length	Team Size
1	CIO	IT Dept.	ERP maintenance	2:15	13
2	Manager	System Design Dept.	Design solutions	0:47	7
3	Manager and Deputy Manager (PMO and Value Engineering)	Project Management Dept.	Progress monitoring	1:42	8
4	Manager	Dam Dept.-Structure Section	Technical solutions	0:49	11
5	Manager	Planning Dept.	Reporting	0:30	9
6	Manager	Administration Dept.	Payroll & Bonuses	0:48	5
7	Manager	Planning Dept.	HR	0:48	12

Preliminary Findings

Within-Case Analysis

Due to page limitation, the within-case analysis resulted in a short description of each case (see Table 4). It allows us to uncover the influence of personal, group, contextual, and task-related factors on SL within each case. This analysis provided an in-depth understanding of the emergence of SL in each case and revealed some insights regarding the influence of IT on such behaviors.

#	Description of the Case (AA: Average age; S: Team Size)	Influential factors of Social Loafing Personal Factors (PF), Group Factors (GF), Organizational Factors (OF), Task related factors (TF)
		Table 4: Within Case Study Analysis

#	Description of the Case (AA: Average age; S: Team Size)	Influential factors of Social Loafing Personal Factors (PF), Group Factors (GF), Organizational Factors (OF), Task related factors (TF)
1	The team is responsible for all IT services - including hardware and software solutions - to the firm. The team triggers and executes major changes in processes and procedures within the system and is recognized as a powerful team. The manager holds the position of CIO in the firm (**AA:29; S:15**)	**PF:** family background, education, motivation, personality and self-esteem *IT role: 1) providing useful tools for individual evaluation of the team members; 2) no direct influence on the effect of personality factors* **GF:** 1) limited effect of size and multiple memberships as manager controls allocation of tasks; 2) marginal effect of group identity and trust **CF:** dominant individualistic culture; lack of clear system of regulations/rewards *IT role: providing various reports on performance and rewards to improve transparency (diminishing SL)*
2	The project management team in the department of System Design offers services for scheduling and managing of current projects. It also monitors projects` progress and periodically reports to upper-level managers. Although the team usually works from the same location, most members work virtually for other teams in parallel. The manager is very knowledgeable and experienced (**AA:35; S:7**)	**PF:** irresponsibility of members; lack of competition in the team; twofold effect of age: older people pay less attention to the tasks and also new young recruits do not have enough focus on their work **GF:** multiple membership as individuals can focus their energy only on one group; trust as it results in relying on others to execute the task **CF:** perception of the system of rewards as it influences increased motivation *IT role: clarifying the system and transparency of bonuses; elevating justice by providing tools to compare payments in different teams* **TF:** task interdependence as it increased complexity in coordination; task visibility, task difficulty and task uniqueness empowered individual performances (diminishing SL)
3	This planning team provides consulting services for the department of Dam Design. The team is responsible for planning and managing resources and monitoring progress of project goals and objectives, and managing existing constraints (time, scope, and budget) (**AA:31; S:8**)	**PF:** only personality types; controlling role of both individual and group evaluations **GF:** multiple membership; the style and culture of the team (hardworking vs. normal); controlling role of managers' ability to assign tasks and manage them **CF:** individualistic culture; ambiguity in the system of rewards and unclear procedures *IT role: clarifying procedures by integrating and keeping records of them; improving the perception of justice in the firm* **TF:** task interdependence, complexity and difficulty ; negative influence of visibility and task importance
4	The team works on technical design and scheme of projects in the department of Dam Design. Its main duty is to plot the structure of large hydro projects. The team structure is very stable and most members have worked together for a long time; it has a reputation for good teamwork. (**AA:41; S:11**)	**PF:** personality and motivation; controlling role of managers' individual monthly evaluation *IT role: enabling easy evaluation by providing reports on individual and team performance* **GF:** partial effect of size and multiple membership; controlling effect of group identity (which augments commitment) and trust (which creates a sense of belonging) **CF:** controlling effect of collectivist culture (as it accelerates the execution of decisions and tasks) and positive perception about the system of rewards and decision-makings *IT role: documenting all information regarding decision-making and thus improving justice* **TF:** controlling role of task interdependence; task importance, difficulty and uniqueness, as it increases individual motivation *IT role: facilitating communications and interactions*
5	This planning team works at the department of Human Resource. Similar to the second case, the team is responsible for planning and scheduling all activities throughout the department. Although the manager is young (tenure 4 years), she is well respected for her good management in the firm (**AA:33; S: 9**)	**PF:** personality type (irresponsible vs. responsible); older in age; lack of motivation **GF:** group size (due of the division of workload and responsibility, a lost feeling of commitment, and difficulty in group management); group identity (affects motivation) **CF:** individualistic culture (when did not find personal benefit in the group); controlling role of rewards (by increasing motivation) *IT role: systematic organizing of processes and procedures; elevating the sense of justice* **TF:** task interactions and difficulty; varied effect of task uniqueness depending on personality *IT role: providing open accessibility to information, which facilitates the work processes*
6	The team works in the Administration department. It provides many services and solutions to the administration department. It also is responsible for monitoring and controlling the total workload of the administration department. (**AA:32; S: 5**)	**PF:** controlling effect of positive personality (internal motivation to work hard); controlling effect of group evaluation (results in increased collaboration and motivation for teamwork) *IT role: enabling ways and measures to measure teamwork* **GF:** group size (when planning and managing team is flawed); multiple memberships; lack of trust *IT role: allowing for multi-tasking and virtual work; improving trust by clarifying duties* **CF:** individualistic culture; controlling role of positive perceptions of justice (seen as fair) *IT role: enforcing guidelines and procedures for making decisions; clarifying the organizational system of payments and rewards (thus improving perceived justice)* **TF:** varied effect of task interdependence (depending on team members' personalities); controlling effect of task visibility, task difficulty, and task uniqueness
7	This highly-ranked team is responsible for coordination between all departments in the firm. It offers various services to ensure fluent collaboration and coordination between departments and sectors. The team also monitors the performance of each department and plans the main activities and goals of the departments. (**AA:41; S: 12**)	**PF:** specific personality types (shyness and fear of objection); restraining role of motivation and individuals performance *IT role: proving tools for managers to perform individual evaluation* **GF:** group size (as it increases complexity in responsibilities); multiple memberships (when different groups' goals are conflicting) *IT role: helping managers to downsize teams by routinizing repetitive processes; facilitated allocation and coordination of people to tasks* **CF:** individualistic culture (resulted in withholding efforts); controlling role of perception about the system of rewards (by increasing motivation) **TF:** different effect of task interactions (depending on the personality); task difficulty and uniqueness; controlling role of task importance, visibility (by increasing motivation)

Cross-Case Analysis: Social Loafing in ICT-Supported Groups

A first round of cross-case analysis revealed some patterns across cases (Eisenhardt, 1989) in terms of the similarities and differences with regard to the factors that influence SL. Table 5 provides a summary of the results across cases. As detailed below, and based on our analysis, some of the factors identified as important in the literature were not salient in most cases while other factors emerged as important in almost all.

Table 5: Summary of The Cross-Case Analysis								
Factors		**Case Results**						
		1	2	3	4	5	6	7
Personal Factors	Personality	-	-	+ -	+	-	+ -	+
	Individual Evaluation	Ø	+	+	-	-	-	+
Group Factors	Group Size	Ø	Ø	-	-	-	-	-
	Multiple Membership	+	+	+	+	+	+ depends on individual capabilities	+
	Group Identity	-	-	- depends on culture	-	- affects motivation	Ø	-
Contextual Factors	Trust	-	+	-	- affects visibility	Ø	-	-
	Culture	Ind +	Col - affects motivation	Ind +	Col -	Ind +	Ind +	Ind +
	Distributive Justice	-	-	-	- affects trust	- affects motivation	-	- affects motivation
	Procedural Justice	-	- affects motivation	-	-	- affects motivation	- affects motivation	-
Task related factors	Tasks Interdependence	+	+	+	-	+	+ - depends on personality	+ - depends on personality
	Task Visibility	- affects motivation	-	Ø	Ø	-	-	- affects motivation
	Task Difficulty	- affects motivation	-	+	-	+ - depend on personality	-	+
	Task Uniqueness	- affects motivation	_	+ -	-	+ - depend on personality	-	+
+ Positive effect **-** Negative effect		Ind : Individualism Col: Collectivism				Ø There is no effect		

Regarding ***personal factors***, the results were mixed. Personality was deemed important. For instance, it was said that people who are untidy, irresponsible, lazy or even shy have a higher tendency to loaf, compared to those who are workaholics, committed and have a high sense of responsibility. Motivation was also considered critical. However, there was no consensus on the effect of age and gender as well as the type of performance evaluation (individual vs. collective).

Group factors were generally seen as influential. Group size was associated with SL in five cases. Membership in multiple groups was identified as a cause for SL in all cases, which was explained by the fact that it distracts members from their tasks in each group. The evidence also showed that group

identity was generally considered an inhibitor of SL. The result of the analysis on trust was mixed: depending on the situation, trust either fostered or inhibited SL. With regard to group-related factors, the role of the manager in controlling SL seemed vital.

Regarding **contextual factors**, all cases strongly indicate that culture has an impact on SL, with individualistic culture fostering SL and collective culture inhibiting it. When perceived positively, justice was associated with less SL. This effect was sometimes direct (in four cases), or indirect through its impact on individual motivation.

Finally, the results of cross-case analysis for **task-related factors** showed that, contrary to extant literature, task interdependence could lead to an increase in SL (an effect observed in four cases). The reason could be fact that, in these cases, high interactions were a major cause of task complexity. Complex tasks decrease the performance of individuals within teams. The effects of the remaining factors (task visibility, difficulty and uniqueness) were mixed. In some teams, they had positive effects and in some, they had a negative effect on individuals' performance.

Next Steps and Expected Contributions of the Study

Based on a thorough literature review and interview data from seven cases, this study proposes a framework for factors affecting SL in ICT-supported groups. We will next investigate the role of IT vis-à-vis SL. A high-level analysis of the data seems to indicate that IT plays an important role in allowing for multiple group memberships. IT allows individuals to work on different tasks at the same time and from one location (multi-tasking). It also appears to facilitate virtual work in different teams, which can augment SL. Meanwhile, it provides a controlling "umbrella" that allows group members to be evaluated regularly, and therefore, to have a lower propensity for SL. In case 1, 2 and 4, using ERP reporting tools and progress monitoring applications, the manager was able to control the negative effects of loafers' personality and motivation as well as group size for the sake of the team. Our preliminary findings are thus consistent with those of Alnuaimi et al. (2010), which claimed that managers can curtail the effect of team size on SL by mechanisms such as diffusing responsibilities. We now intend to further explore the role of IT in influencing SL, in order to proceed to theory development on the role that IT can play in affecting SL behaviors in organizations.

Expected Contributions

We must acknowledge that this study has some limitations. Indeed, all the cases are from a single firm, which reduces the overall generalizability of the findings. Moreover, we only interviewed team manager. Though they all had a thorough knowledge over their team's practices, to delve more into actual work practices and to avoid biases, it would be helpful to include the voice of the team members. Still, because it is grounded in empirical data, the study provides a rich and full description of the findings, and the context of the study allows readers to judge whether the findings can be applied to specific situations or not (Lincoln & Guba, 1985).

Our study intends to make several contributions to research and practice. Our review shows that there are only a few studies in IS discipline have investigated at SL and its occurrence. Most studies draw on a single theory or a limited set of antecedents to explain SL in IT-related contexts. However, our paper goes beyond one theory and integrates the literature in different disciplines to frame SL determinants into four categories, i.e. personal, group-related, contextual, and task-related factors. The analysis of the data collected from multiple case-studies enabled us to better understand the factors and mechanisms that play a role on occurrence of SL in ICT-supported contexts. Further theory developing efforts will allow us to precisely determine the role that IT plays on SL in this context and vice versa.

For managers, this study already highlights the fact that, in order to prevent SL, it is important to pay more attention to group-related factors such as group size, group identity and trust. Top managers are also responsible for encouraging a collectivist culture and establishing justice regarding rewards and decisions being made in the firm. Because most teams exploit IT to some extent (Chidambaram & Tung, 2005), managers can learn to use IT to facilitate performance evaluation and to better manage multiple memberships, justice and task interdependence.

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