

## Understanding the Determinants of the Reputation of Information Systems Departments

### Abstract

*How well information systems are governed in an organization depends critically on the relationship between the IS department and other business units. Infrequent communication and a lack of shared knowledge between these groups have shown, for example, to lead to failed and abandoned projects. While IS-business relationships have been extensively studied at the individual level of analysis, little work has been done on group-level relationships. This is a significant issue, because relationships between individuals are influenced by the quality of the interaction between and within the organizational units they belong to. In addition, most studies have examined how these relationships affect the performance of the IS unit, but not the reputation of this unit in the organization. The reputation of the IS unit in an organization is worth studying because reputation is an indicator of its success in executing and supporting the organization's strategy. Cognitive judgments of the IS unit's influence also determine to some extent the level of resources provided to it for its operations. This study uses the concepts of leader-member exchange and team-member exchange to examine how relationships between IS and business units, and within IS units, can affect the performance and reputation of the IS unit. We develop a theoretical multi-level model and propose hypotheses which will be tested in the future.*

### Keywords

Within IS group, between IS-business units, IS performance and reputation.

### Introduction

The information systems (IS) department in an organization consists of IS professionals who develop, support and oversee the information technology (IT)-related aspects of business processes (Ketinger, Zhang, & Chang, 2013; Pitt, Watson, & Kavan, 1995; Storck & Hill, 2000). IS departments assist business units in a variety of service roles, such as business analysts, project managers, customer service lines, and top managers. More specifically, IS units regularly interact with business units in organizations to analyse unstructured data, manage projects, and plan whether and when new developments can be applied in hardware and software (Brown, 1999). Consequently, the quality of service that individual IS staff and the IS unit overall provide to business units determines the effectiveness of the IS department (Pitt et al., 1995). For example, IS departments are seen as effective if they develop or deploy easy-to-use and useful information systems for business units, as well as provide training and advice on equipment purchases. Therefore, the extent of IS-related knowledge IS professionals share with non-IS peers is a determinant of both IS and business outcomes, such as performance (Ray, Muhanna, & Barney, 2005).

Equally important as the extent of shared knowledge between units is the frequency of communications. Nelson and Coopridge (1996) describe how frequent communications and shared knowledge built up mutual trust between IS and business units, enhancing the performance of the IS unit. Frequent communications ensures that business users provide IS professionals with feedback, which enhances the effectiveness of IS units (Storck & Hill, 2000). Moreover, frequent communications and the sharing of knowledge between IS and business units, where IT professionals share their knowledge in regular meetings, lead to a closer relationship and mutual trust, making the units more effective. Too few meetings, not understanding each other's capabilities, incompatible goals because of poor communications, and little shared knowledge between the IS department and business units leads to members struggling to achieve their goals (Storck & Hill, 2000). These deficiencies can lead to aborted IS services, failed projects, and cancelled or abandoned IS group projects (Crowston & Kammerer, 1998; Roberts et al., 2004; Robey & Newman, 1996).

The success or failure of IS projects also depends to some extent on differences within groups, which are a determinant of the quality of communications and sharing of knowledge between IS departments and business units (Ewusi-Mensah, 1997). Differences in the characteristics of IS professionals also influence the quality of interaction and exchanges that occur within an IS group, and consequently IS group-level outcomes, such as group cohesiveness, group decision-making and the exchange of IT helping behaviours (Powell & Yager, 2004; Wei, Crowston, Li, & Heckman, 2014). In the next section, we review the literature on IS-business unit relationships, differences across groups, such as knowledge diversity, and individual-level differences, such as leaders' personalities. This provides us with the setting to develop a model to explain the impact of the IS-business unit relationship on the performance and the reputation of the IS unit by drawing from the literature on group dynamics. We then put forward hypotheses based on the model, and describe our proposed methodology.

The paper's contribution lies in providing a fuller explanation of the impact of the IS unit on IS-business alignment, following on the calls for detailed investigations of IS within-group relationships and IS-business unit interactions (Ewusi-Mensah, 1997; Robey & Newman, 1996).

## Literature Review

Mature IS governance is reflected in a high degree of alignment between the structures, processes and relations of an organization's information systems (IS) and business units (Chan & Reich, 2007; De Haes & Van Grembergen, 2009). Effective IS-business alignment enables organizations to meet the demand for better products and services, which improves customer satisfaction (Clark, Cavanaugh, Brown, & Sambamurthy, 1997; Ross, Beath, & Goodhue, 1996; Tarafdar & Qrunfleh, 2009), strengthens their competitive advantage (Bharadwaj, 2000; Clark et al., 1997; Piccoli & Ives, 2005; Ross et al., 1996), and improves their market position (Henderson & Venkatraman, 1993). IS-business alignment depends to a large extent on the quality of communication and partnership between the various IS and business units in an organization (Sledgianowski & Luftman, 2005). This social dimension of alignment (Campbell, Kay, & Avison, 2005; Chan & Reich, 2007; Sledgianowski & Luftman, 2005) is valuable because it influences the level of shared knowledge between IS and business executives or between IS and business units (Nelson & Coopriider, 1996; Rau, 2004; Reich & Benbasat, 2000), which has a significant impact on a range of IS-based services provided to the organization, from helpdesk support to enterprise system project implementations (Ko, Kirsch, & King, 2005; Tarafdar & Qrunfleh, 2009).

IS-business relationships have been examined from various perspectives (Benbya & McKelvey, 2006; De Haes & Van Grembergen, 2009; Gasson, 2006; Henderson & Venkatraman, 1993), such as the relationships between: CIOs and CEOs (Feeny, Edwards, & Simpson, 1992; Rau, 2004; Reich & Benbasat, 1996), IS professionals and business managers (Bassellier, Reich, & Benbasat, 2001), and IS professionals and business clients (Bassellier & Benbasat, 2004). Little work has focused on the interactions that occur within IS groups and between IS departments and business units. IS professionals in IS groups interact with their IS and non-IS colleagues from different departments to share information technology (IT) needs, new system specifications, IS-related knowledge, and IS training. These interactions result in IS unit outcomes, such as performance and reputation (Nelson & Coopriider, 1996; Powell & Yager, 2004).

Similar to exchanges within IS groups among members, IS leaders' exchanges with their IS employees affect IS unit outcomes (Moore & Love, 2005; Nahrgang & Morgeson, 2009). Indeed, the lack of attention to these interactions within IS groups that resulted in poor communications between IS and business units causes consequences such as project failure, project abandonment, and a lowering of performance and reputation of IS units (Ewusi-Mensah, 1997; Powell & Yager, 2004; Roberts, Cheney, Sweeney, & Hightower, 2004). In response to these gaps, this study's research questions are: 1) *How can quality relationships between IS and business units be built?* and 2) *How do these relationships influence IS group outcomes, such as performance and reputation?*

Leaders affect their group members' performance by exchanging social support or trust with them (Graen & Uhl-Bien, 1995; Yammarino, 1992), leveraging group members' bargaining power on their working time flexibility, work place flexibility, and conditional contracts, or by mentoring members to develop their knowledge (Rousseau, Ho, & Greenberg, 2006). Paré et al. (2007) explains that when IS leaders recognise IS professionals through nonmonetary rewards, employees respond with positive behaviours, such as engaging in helping behaviour or sharing knowledge. IS professionals are motivated when their managers recognize them by assigning them challenging tasks (Sharp, Baddoo, Beecham, Hall, and Robinson, 2009). Moore and Love (2005), who studied why IT departments have a lower rate of constructive behaviours compared to other functions, concluded that one way of improving this was for IT leaders to be in a closer relationship with their staff and to provide them with feedback. Conversely, IS leaders who do not acknowledge the achievements of their staff, by for example assigning responsibilities beyond their abilities or assigning tasks irrelevant to their specialty, will be faced with poorer outcomes from IS professionals and the IS group, and a reduction in the level of their willingness to exchange technical support with others (Ang & Slaughter, 2001; Moore & Love, 2005) in the non-IS context.

Interaction between IS leaders and their IS staff influences the IS departments' outcomes. For example, CIOs discuss leadership training, mentoring, social skills and effective interpersonal communication, IS requirements and non-IS issues (e.g., flexibility in IS professionals' contracts) with their staff to improve the IS department's efficiency and effectiveness (Reid, Allen, Riemenschneider, & Armstrong, 2008; Tzy-Yuan, James, Gary, & Seng-Cho, 2011). Indeed, exchanges between leaders and members, along with interactions among group members, enhance group and organizational outcomes as the result of creative-related behaviours across group members or positive behaviours (e.g., sharing knowledge) across the organization (Atwater & Carmeli, 2009; Lavelle, Rupp, & Brockner, 2007; Martinaityte & Sacramento, 2012; Paré, Tremblay, & Montréal, 2007).

At the between-group level, in-groups tend to make out-groups dependent on their exchanges so as to enhance their reputation or to obtain more resources (Nadler, 2002). In the IS context, IS departments may be motivated to share their knowledge and provide IT-related assistance and IT expertise to non-IS business units so as to enhance their department's reputation (Constant, Kiesler, & Sproull, 1994; Powell & Yager, 2004) and performance (Guillemette & Paré, 2012; Nelson & Coopridge, 1996). Non-IS units will appreciate such actions (Ramakrishna & Lin, 2004) by providing, for example, additional IS resources or IT requirements from top management (Porra, Hirschheim, & Parks, 2005, 2006).

As IT becomes more pervasive in organisational processes, IS staff are increasingly crucial for organisations to function effectively. This section showed that interaction between IS and business units at the individual level has been extensively studied in the IS literature (e.g. Bassellier & Benbasat, 2004; Reich & Benbasat, 1996, 2000). However, the IS literature is silent on group-level interaction between IS and business units, what affects it, and its impact on outcomes relevant to the IS unit, such as reputation. The next section presents a model for addressing these issues.

## Conceptual Development

Differences in group members' personality attributes (e.g., extraversion or conscientiousness) and level of knowledge are closely correlated with, and may even have a curvilinear relationship with group outcomes, such as performance (Barrick, Stewart, Neubert, & Mount, 1998; Barry & Stewart, 1997; Ilgen, Hollenbeck, Johnson, & Jundt, 2005; Van Der Veegt & Bunderson, 2005). Likewise, leaders' attributes affect the quality of interactions and their sharing of knowledge with group members. For example, personality traits such as extraversion and agreeableness are positively associated with members' perception of their leaders, because high-extraversion leaders are most likely to initiate social-economic interactions with their members (Ilies, Nahrgang, & Morgeson, 2007; Nahrgang & Morgeson, 2009).

We draw on the concept of leader-member exchange (LMX) from the management literature to understand how the relationships *within* IS groups affects the quality of their interaction with their non-IS peers. Leaders and members in groups mutually exchange respect, loyalty, understanding, trust, expertise, technical skills, and support to improve group performance (Scandura, Graen, & Novak, 1986; Uhl-Bien & Graen, 1992). LMX differs from economic exchanges, which are limited to agreements on employment contracts, and is akin to social exchanges characterized by a high degree of mutual trust, respect, and understanding (Carter, Armenakis, Feild, & Mossholder, 2013; Graen & Uhl-Bien, 1995). High-quality LMX occurs when there is frequent communication between members and their leader to support each other's actions (Sin, Nahrgang, & Morgeson, 2009). Attributes of leaders and members, such as conscientiousness (Ilies et al., 2007), affect the quality of LMX as well. Nahrgang and Morgeson (2009) report that agreeable and extroverted leaders initiate social relationships with members who, in turn, respond to leaders with the same behaviours.

The quality of LMX within groups is positively related to the level of group cohesiveness and work group cooperation. Group members and leaders who work together and cooperate on tasks influence group performance and effectiveness positively (Cogliser & Schriesheim, 2000; Uhl-Bien & Graen, 1992). Cogliser and Schriesheim (2000) conclude that leaders use their power to affect between-group relationships because of resource scarcity, so that leaders can assign resources to groups and categorize groups into in-groups and out-groups. Exchanges between a leader and in-group members are characterized by a high level of mutual trust, respect and frequent communication, while exchanges with out-group members have a low level of trust, respect, and communication (Graen & Uhl-Bien, 1995). The consequences and antecedents of the effect of leader-member relationship include job satisfaction, commitment (Cogliser, Schriesheim, Scandura, & Gardner, 2009; Yammarino, 1992), and organizational citizenship behaviour (Atwater & Carmeli, 2009; D. J. Henderson, Wayne, Shore, Bommer, & Tetrick, 2008).

Since leaders may not be able to lead every employee in terms of expertise and technical supervision, this lack of support is offset by within-group interaction (Uhl-Bien & Graen, 1992). Because of a group-oriented system, group members are more autonomously managed by their group work in which the quality of interaction within groups is more than the traditional approach between members and leaders. The quality of within-group interaction is based on the level of cooperation, group work, and coordination among co-workers within a group, and affects the level of productivity and effectiveness of the group (Seers, 1989). This interaction is referred to as team-member exchange (TMX). High-quality TMX occurs when group members assist their co-workers with ideas, feedback and trust, and in turn, their colleagues return favours to them in the form of information, assistance and recognition (Seers, 1989; Seers, Petty, & Cashman, 1995). High-quality TMX is found among in-group members, while low-quality TMX is found among members of out-groups (Seers et al., 1995). High-quality TMX has been found to have a significant impact on individual and group level outcomes, such as job satisfaction, the manifestation of organizational citizenship behaviours, and performance (Banks et al., 2013; Love & Dustin, 2013; Seers, 1989; Wech, 2003).

Figure 1 depicts the research model. Integrating prior research on the determinants and consequences of LMX and TMX, along with the literature on interaction between IS and business units, this study argues that the level of communications and shared knowledge between IS and business units is affected by the attributes of IS leaders and IS staff. For example, IS units with a high level of extraversion, expertise diversity and conscientiousness will be more likely to interact with their peer business units and share knowledge with them. Similarly, IS units with managers who are extroverted, conscientious and recognise the diversity of their staff's expertise are better able to develop good relationships and rapport with their peer business units.

In turn, the frequency and extent of communications and the level of shared knowledge affects the performance and reputation of the IS department. Business units appreciate receiving technical support and guidance from the IS department. The more frequently an IS department communicates and shares knowledge with its peer business units, the better the reputation of the IS department will be. Similarly, IS departments which communicate and share knowledge often with their peers from other business units will perform better because they would have acquired the trust of their peers and have better insight into their IT requirements, making them better able to fulfil their responsibilities to meet the needs of their users.

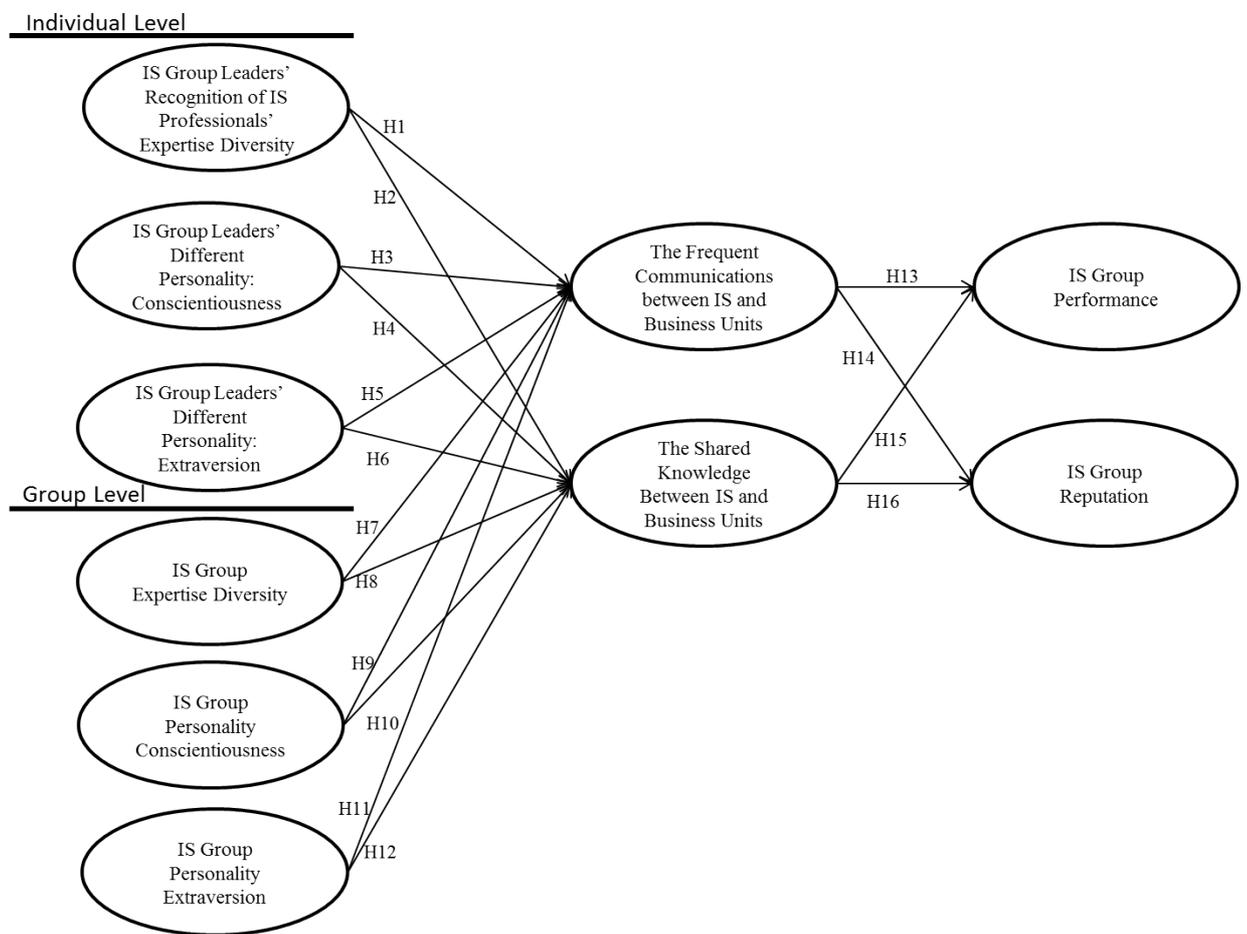


Figure 1: Research Model

## Methodology

A questionnaire survey will be used to collect data from IS professionals and managers, along with business employees. The measures for the survey will be taken from the prior literature (Table 1). Large and medium-sized New Zealand organizations will be targeted, as they will have frequent and intensive interaction between their IS and business departments, unlike small firms. Since some of the constructs of the instrument have not been used in the IS context, the instrument will be pre-tested by IS academics and professionals to establish content validity.

Table 1: Source of Constructs for Survey

	<b>Construct</b>	<b>Source</b>
1	Leader Recognition	(Paré et al., 2007)
2	Leader Personality	(Nahrgang & Morgeson, 2009)
3	Within-Group Knowledge Diversity	(Van Der Vegt & Bunderson, 2005; Van Der Vegt, Van De Vliert, & Oosterhof, 2003)
4	Within-Group Personality Differences	(Barrick et al., 1998; Barry & Stewart, 1997)
5	Frequent Communication	(Nelson & Coopriider, 1996)
6	Shared Knowledge	(Nahrgang & Morgeson, 2009)
7	IS Performance	(Chang and King, 2005)
8	IS Reputation	

A key feature of this study is its multi-level nature. While some constructs are measured at the individual level of analysis, such as IS managers' personality attributes and IS professionals' knowledge diversity, others, such as the extent to which IS professionals have similar personality attributes and knowledge levels, are assessed at the group level. Group-level concepts that are aggregations of individual-level constructs can be measured in different ways, such as means, distributions, and modes, depending on the definition of the construct (Klein & Kozlowski, 2000a, 2000b). For example, "group language" could be measured as the language used most frequently (mode), while "group knowledge of programming languages" could be measured as the number of different languages group members know (summation). In this study, the knowledge diversity of IS professionals, referring to IS professionals' experience, education, and functional specialties (Van Der Vegt et al., 2003), will be calculated by using Tsui, Egan, and O'Reilly's (1992) formula. Another issue relevant here is time, as it may complicate the relationships in the model (Klein & Kozlowski, 2000a, 2000b). For example, after how long do the frequent communications and the sharing knowledge between business users and IS professionals affect the performance and reputation of an IS department? When do higher-level constructs, such as group knowledge diversity, affect individual interactions between units? Or after how long do IS leaders' different personalities in leading IS professionals within IS groups impact on an IS department performance and reputation? Finally, group size will affect the extent of information exchange and communication within a group. Larger groups will be more unwilling to share IT-related knowledge or IS expertise with peers (Lee & Lee, 2010). Since the size of the IS department will affect how frequently IS employees communicate and share IS-related knowledge with their business peers, this measure will be scaled to take into account the size of the IS and business units involved. This study uses Chang and King's (2005) questionnaire to assess the performance of the IS function. Chang and King (2005) define the IS function to include all IS professionals, IS groups, IS units, or IS departments within an organization. Thus, an assessment of the quality of the IS function's outcomes will require evaluating the entire range of IS services, IS-related information, and IS systems that are being used in the organization. Schnake and Dumler (2003) discuss why using aggregated measures cannot meet within-group variances of analysis. The homogeneity and heterogeneity within IS groups must be taken into account because the extent of reliability varies with average random individual-level errors and biases (Bliese, Halverson, & Rothberg, 1994). Multilevel structural equation modelling (MSEM) is suggested as the appropriate technique to model the constructs, reduce the impacts of measurement error, and enable researchers to assess the fit of the model to data (Preacher, 2011).

## Contribution

This study offers a new perspective to the IS literature on relationships between IS and business units, and their impact on the performance and reputation of the IS department. Since the studies of Curtis and his colleagues (1990) on groups of software professionals and their differences in technical skills, there has been a need for research on the differences among IS professionals within IS groups and the effect these differences have on IS group outcomes. Also, at the individual level, there is a need for research on the recognition of IS professionals by IS managers.

This study is proposed to contribute significantly to the literature on IS groups as little work has examined group-level interaction and relationships between the IS departments and business units. Although there have been some studies of communications and shared knowledge between IS and business units through individual or interpersonal relationships, the IS literature is largely silent on how group-level differences affect the occurrence of interactions between IS and business departments. Besides, there will be a contribution to the IS literature as two aspects (IT expertise and personality) differences are considered to affect IS-business interactions.

This study further develops our understanding of the reputation of the IS department and its determinants. As IS-related knowledge can be shared within various modes of information system exchanges (e.g. blogs and message boards), the reputation of the IS department could be improved or worsened by the interactions IS professionals have with business departments. The IS department's reputation could also be a valuable resource it could deploy to counteract any reduction in resources provided by top management. Thus, this research will enable an understanding of how communications and knowledge-sharing affect the IS department's reputation. Future research will consider the relationship between the reputation of the IS department and the trust that its users have in it, based on their prior interactions. Finally, this study will engender useful discussions of the effect social aspect of IS and business alignment has on an effective IS governance in which IS departments' IS outputs match business units' requirements.

## References

- Ang, S., & Slaughter, S. A. (2001). Work Outcomes and Job Design for Contract versus Permanent Information Systems Professionals on Software Development Teams. *MIS Quarterly*, 25(3), 321-350.
- Atwater, L., & Carmeli, A. (2009). Leader-member exchange, feelings of energy, and involvement in creative work. *The Leadership Quarterly*, 20(3), 264-275. doi:10.1016/j.leaqua.2007.07.009
- Banks, G. C., Batchelor, J. H., Seers, A., O'Boyle, E. H., Pollack, J. M., & Gower, K. (2013). What does team-member exchange bring to the party? A meta-analytic review of team and leader social exchange. *Journal of Organizational Behavior*, 35(2), 273-295. doi:10.1002/job.1885
- Barrick, M. R., Stewart, G. L., Neubert, M. J., & Mount, M. K. (1998). Relating Member Ability and Personality to Work-Team Processes and Team Effectiveness. *Journal of Applied Psychology*, 83(3), 377-391. doi:10.1037/0021-9010.83.3.377
- Barry, B., & Stewart, G. L. (1997). Composition, Process, and Performance in Self-Managed Groups: The Role of Personality. *Journal of Applied Psychology*, 82(1), 62-78. doi:10.1037/0021-9010.82.1.62
- Bassellier, & Benbasat, I. (2004). Business Competence of Information Technology Professionals: Conceptual Development and Influence on IT-Business Partnerships. *MIS Quarterly*, 28(4), 673-694.
- Bassellier, Reich, B. H., & Benbasat, I. (2001). Information technology competence of business managers: A definition and research model. *Journal of Management Information Systems*, 17(4), 159.
- Benbya, H., & McKelvey, B. (2006). Using coevolutionary and complexity theories to improve IS alignment: A multi-level approach. *Journal of Information Technology*, 21(4), 284-298. doi:10.1057/palgrave.jit.2000080
- Bharadwaj, A. S. (2000). A Resource-Based Perspective on Information Technology Capability and Firm Performance: An Empirical Investigation. *MIS Quarterly*, 24(1), 169-196.
- Bliese, P., Halverson, R., & Rothberg, J. (1994). Within-Group Agreement Scores: Using Resampling Procedures to Estimate Expected Variance. *1994 Academy of Management Meeting Best Papers Proceedings*, 303-307. doi:10.5465/AMBPP.1994.10344875
- Brown, C. V. (1999). Horizontal Mechanisms under Differing IS Organization Contexts. *MIS Quarterly*, 23(3), 421-454.
- Campbell, B., Kay, R., & Avison, D. (2005). Strategic alignment: a practitioner's perspective. *Journal of Enterprise Information Management*, 18(6), 653-664. doi:10.1108/17410390510628364
- Carter, M. Z., Armenakis, A. A., Feild, H. S., & Mossholder, K. W. (2013). Transformational leadership, relationship quality, and employee performance during continuous incremental organizational change. *Journal of Organizational Behavior*, 34(7), 942-958, doi:10.1002/job.1824
- Chan, Y. E., & Reich, B. H. (2007). IT alignment: what have we learned? *Journal of Information Technology*, 22(4), 297-315. doi:10.1057/palgrave.jit.2000109
- Clark, C. E., Cavanaugh, N. C., Brown, C. V., & Sambamurthy, V. (1997). Building Change-Readiness Capabilities in the IS Organization: Insights from the Bell Atlantic Experience. *MIS Quarterly*, 21(4), 425-455.
- Cogliser, C. C., & Schriesheim, C. A. (2000). Exploring Work Unit Context and Leader-Member Exchange: A Multi-Level Perspective. *Journal of Organizational Behavior*, 21(5), 487-511. doi:10.1002/1099-1379(200008)21:5<487::AID-JOB57>3.0.CO;2-P

- Cogliser, C. C., Schriesheim, C. A., Scandura, T. A., & Gardner, W. L. (2009). Balance in leader and follower perceptions of leader-member exchange: relationships with performance and work attitudes. *The leadership quarterly*, 20(3), 452-465. doi:10.1016/j.leaqua.2009.03.010
- Constant, D., Kiesler, S., & Sproull, L. (1994). What's Mine Is Ours, or Is It? A Study of Attitudes about Information Sharing. *Information Systems Research*, 5(4), 400-421. doi:10.1287/isre.5.4.400
- Crowston, K., & Kammerer, E. E. (1998). Coordination and collective mind in software requirements development. *IBM Systems Journal*, 37(2), 227-245. doi:10.1147/sj.372.0227
- De Haes, S., & Van Grembergen, W. (2009). An Exploratory Study into IT Governance Implementations and its Impact on Business/IT Alignment. *Information Systems Management*, 26(2), 123-137. doi:10.1080/10580530902794786
- Ewusi-Mensah, K. (1997). Critical issues in abandoned information systems development projects. *Communications of the ACM*, 40(9), 74-80.
- Feeny, Edwards, & Simpson. (1992). Understanding the CEO/CIO Relationship. *MIS Quarterly*(4), 435-448
- Gasson, S. (2006). A genealogical study of boundary-spanning IS design. *European Journal of Information Systems*, 15(1), 26-41. doi:10.1057/palgrave.ejis.3000594
- Graen, G. B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The leadership quarterly*, 6(2), 219-247. doi:10.1016/1048-9843(95)90036-5
- Guillemette, M. G., & Paré, G. (2012). Transformation of the Information Technology Function in Organizations: A Case Study in the Manufacturing Sector. *Canadian Journal of Administrative Sciences / Revue Canadienne des Sciences de l'Administration*, 29(2), 177-190. doi:10.1002/cjas.224
- Henderson, D. J., Wayne, S. J., Shore, L. M., Bommer, W. H., & Tetrick, L. E. (2008). Leader-member exchange, differentiation, and psychological contract fulfillment: a multilevel examination. *The Journal of Applied Psychology*, 93(6), 1208-1219. doi:10.1037/a0012678
- Henderson, J. C., & Venkatraman, N. (1993). Strategic alignment: Leveraging information technology for transforming organizations. *IBM Systems Journal*, 32(1), 4.
- Ilgen, D. R., Hollenbeck, J. R., Johnson, M., & Jundt, D. (2005). Teams in organizations: from input-process-output models to IMOI models. *Annu Rev Psychol*, 56, 517-543. doi:10.1146/annurev.psych.56.091103.070250
- Ilies, R., Nahrgang, J. D., & Morgeson, F. P. (2007). Leader-member exchange and citizenship behaviors: a meta-analysis. *The Journal of Applied Psychology*, 92(1), 269-277. doi:10.1037/0021-9010.92.1.269
- Kettinger, W. J., Zhang, C., & Chang, K.-C. (2013). Research Note—A View from the Top: Integrated Information Delivery and Effective Information Use from the Senior Executive's Perspective. *Information Systems Research*, 24(3), 842-860. doi:10.1287/isre.1120.0473
- Klein, K. J., & Kozlowski, S. W. J. (2000a). From Micro to Meso: Critical Steps in Conceptualizing and Conducting Multilevel Research. *Organizational Research Methods*, 3(3), 211-236. doi:10.1177/109442810033001
- Klein, K. J., & Kozlowski, S. W. J. (2000b). Multilevel Theory, Research, and Methods in Organizations Foundations, Extensions, and New Directions.
- Ko, D.-G., Kirsch, L. J., & King, W. R. (2005). Antecedents of Knowledge Transfer from Consultants to Clients in Enterprise System Implementations. *MIS Quarterly*, 29(1), 59-85.
- Lavelle, J. J., Rupp, D. E., & Brockner, J. (2007). Taking a Multifoci Approach to the Study of Justice, Social Exchange, and Citizenship Behavior: The Target Similarity Model *Journal of Management*, 33(6), 841-866. doi:10.1177/0149206307307635
- Lee, G., & Lee, W. J. (2010). Altruistic traits and organizational conditions in helping online. *Computers in Human Behavior*, 26(6), 1574-1580. doi:10.1016/j.chb.2010.06.003
- Love, M. S., & Dustin, S. L. (2013). An investigation of coworker relationships and psychological collectivism on employee propensity to take charge. *The international journal of human resource management*, 1-19. doi:10.1080/09585192.2013.826712

- Martinaityte, I., & Sacramento, C. A. (2012). When creativity enhances sales effectiveness: The moderating role of leader-member exchange. *Journal of Organizational Behavior*, n/a-n/a. doi:10.1002/job.1835
- Moore, J. E., & Love, M. S. (2005). IT professionals as organizational citizens. *Communications of the ACM*, 48(6), 88-93. doi:10.1145/1064830.1064832
- Nadler, A. (2002). Inter-Group Helping Relations as Power Relations: Maintaining or Challenging Social Dominance Between Groups Through Helping. *Journal of Social Issues*, 58(3), 487-502. doi:10.1111/1540-4560.00272
- Nahrgang, J. D., & Morgeson, F. P. (2009). The development of leader-member exchanges: exploring how personality and performance influence leader and member relationships over time. *Organizational Behavior and Human Decision Processes*, 108(2), 256-266. doi:10.1016/j.obhdp.2008.09.002
- Nelson, K. M., & Coopriider, J. G. (1996). The Contribution of Shared Knowledge to IS Group Performance. *MIS Quarterly*, 20(4), 409-432.
- Paré, G., Tremblay, M., & Montréal, H. (2007). The Influence of High-Involvement Human Resources Practices, Procedural Justice, Organizational Commitment, and Citizenship Behaviors on Information Technology Professionals' Turnover Intentions. *Group & Organization Management*, 32(3), 326-357. doi:10.1177/1059601106286875
- Piccoli, G., & Ives, B. (2005). Review: IT-Dependent Strategic Initiatives and Sustained Competitive Advantage: A Review and Synthesis of the Literature. *MIS Quarterly*, 29(4), 747-776.
- Pitt, L. F., Watson, R. T., & Kavan, C. B. (1995). Service Quality: A Measure of Information Systems Effectiveness. *MIS Quarterly*, 19(2), 173-187.
- Porra, J., Hirschheim, R., & Parks, M. S. (2005). The History of Texaco's Corporate Information Technology Function: A General Systems Theoretical Interpretation. *MIS Quarterly*, 29(4), 721-746.
- Porra, J., Hirschheim, R., & Parks, M. S. (2006). Forty years of the corporate information technology function at Texaco Inc. – A history. *Information and Organization*, 16(1), 82-107. doi:10.1016/j.infoandorg.2005.06.001
- Powell, A., & Yager, S., E. . (2004). Exploring Reputation Differences In Information Systems Groups. *Journal of Information Technology Cases and Applications*, 6(2), 5.
- Ramakrishna, H. V., & Lin, X. (2004). Perception of the Role of Information Technology Function in Organizations: Toward the Development of a Measure.
- Rau, K. G. (2004). Effective Governance of It: Design Objectives, Roles, and Relationships. *Information Systems Management*, 21(4), 35-42. doi:10.1201/1078/44705.21.4.20040901/84185.4
- Ray, G., Muhanna, W. A., & Barney, J. B. (2005). Information Technology and the Performance of the Customer Service Process: A Resource-Based Analysis. *MIS Quarterly*, 29(4), 625-652.
- Reich, B. H., & Benbasat, I. (1996). Measuring the Linkage between Business and Information Technology Objectives. *MIS Quarterly*, 20(1), 55-81.
- Reich, B. H., & Benbasat, I. (2000). Factors That Influence the Social Dimension of Alignment between Business and Information Technology Objectives. *MIS Quarterly*, 24(1), 81-113.
- Reid, Allen, Riemenschneider, & Armstrong. (2008). The Role of Mentoring and Supervisor Support for State IT Employees' Affective Organizational Commitment. *Review of Public Personnel Administration*, 28(1), 60-78. doi:10.1177/0734371X07311703
- Roberts, T. L., Cheney, P. H., Sweeney, P. D., & Hightower, R. T. (2004). The Effects of Information Technology Project Complexity on Group Interaction. *Journal of Management Information Systems*, 21(3), 223-247.
- Robey, D., & Newman, M. (1996). Sequential patterns in information systems development: an application of a social process model. *ACM Transactions on Information Systems (TOIS)*, 14(1), 30-63. doi:10.1145/214174.214178
- Ross, J. W., Beath, C. M., & Goodhue, D. L. (1996). Develop Long-Term Competitiveness Through IT Assets. *Sloan Management Review*, 38(1), 31.
- Rousseau, Ho, & Greenberg. (2006). I-DEALS: IDIOSYNCRATIC TERMS IN EMPLOYMENT RELATIONSHIPS. *Academy of Management Review*, 31(4), 977-994.

- Scandura, T. A., Graen, G. B., & Novak, M. A. (1986). When Managers Decide Not to Decide Autocratically: An Investigation of Leader-Member Exchange and Decision Influence. *Journal of Applied Psychology*, 71(4), 579-584. doi:10.1037/0021-9010.71.4.579
- Schnake, M., E., & Dumler, M., P. (2003). Levels of measurement and analysis issues in organizational citizenship behaviour research. *Journal of Occupational and Organizational Psychology*, 76, 283.
- Seers, A. (1989). Team-member exchange quality: A new construct for role-making research. *Organizational Behavior and Human Decision Processes*, 43(1), 118-135. doi:10.1016/0749-5978(89)90060-5
- Seers, A., Petty, M. M., & Cashman, J. F. (1995). Team-Member Exchange Under Team and Traditional Management: A Naturally Occurring Quasi-Experiment. *Group & Organization Management*, 20(1), 18-38. doi:10.1177/1059601195201003
- Sharp, H., Baddoo, N., Beecham, S., Hall, T., & Robinson, H. (2009). Models of motivation in software engineering. *Information and Software Technology*, 51(1), 219-233. doi:10.1016/j.infsof.2008.05.009
- Sin, H.-P., Nahrgang, J. D., & Morgeson, F. P. (2009). Understanding why they don't see eye to eye: an examination of leader-member exchange (LMX) agreement. *The Journal of Applied Psychology*, 94(4), 1048-1057. doi:10.1037/a0014827
- Sledgianowski, D., & Luftman, J. (2005). IT-Business Strategic Alignment Maturity: A Case Study. *Journal of Cases on Information Technology*, 7(2), 102-120. doi:10.4018/jcit.2005040107
- Storck, J., & Hill, P. A. (2000). Knowledge Diffusion through "Strategic Communities". *Sloan Management Review*, 41(2), 63.
- Tarafdar, M., & Qrunfleh, S. (2009). IT-Business Alignment: A Two-Level Analysis. *Information Systems Management*, 26(4), 338-349. doi:10.1080/10580530903245705
- Tsui, A. S., Egan, T. D., & O'Reilly, C. A. (1992). Being Different: Relational Demography and Organizational Attachment. *Administrative Science Quarterly*, 37(4), 549-579.
- Tzy-Yuan, C., James, J. J., Gary, K., & Seng-Cho, T. C. (2011). Organizational Citizenship Behavior of Information System Personnel: The Influence of Leader-Member Exchange. *Information Resources Management Journal*, 24(4), 77.
- Uhl-Bien, M., & Graen, G. B. (1992). Self-management and team-making in cross-functional work teams: Discovering the keys to becoming an integrated team. *Journal of High Technology Management Research*, 3(2), 225-241. doi:10.1016/1047-8310(92)90013-R
- Van Der Vegt, G. S., & Bunderson, J. S. (2005). Learning And Performance In Multidisciplinary Teams: The Importance Of Collective Team Identification. *Academy of Management Journal*, 48(3), 532-547.
- Van Der Vegt, G. S., Van De Vliert, E., & Oosterhof, A. (2003). Informational Dissimilarity and Organizational Citizenship Behavior: The Role of Intrateam Interdependence and Team Identification. *The Academy of Management Journal*, 46(6), 715-727.
- Wech, B. A. (2003). Effect of Team-Member Exchange on Individual-Level Performance, Organizational Citizenship Behavior-Individual, and Job Satisfaction Beyond the Influence of Leader-Member Exchange [Submitted to the Organizational Behavior/Organizational Theory/Organizational Development track of the Southern Management Association 2003 Meeting].
- Wei, K., Crowston, K., Li, N. L., & Heckman, B. (2014). Understanding Group Maintenance Behavior in Free/Libre Open Source Software Projects: The Case of Fire and Gaim. *Information & Management*. doi:10.1016/j.im.2014.02.001
- Yammarino, F. J. (1992). Superior-Subordinate Relationships: A Multiple Levels of Analysis Approach. *Human Relations*, 45(6), 575-600. doi:10.1177/001872679204500603