

Examining the Role of Organizational Citizenship Behaviour in Information System Departments

Abstract

IS staff interact with their non-IS colleagues for many reasons, such as investigating their IT needs, confirming system specifications, and during testing and training. These interactions build relationships that are relied upon when non-IS employees face challenges with using IT, manifested in the informal interaction between these two groups of employees. The IS literature has argued for the importance of better linkages between IS and business employees to build shared understanding and cross-domain knowledge, so as to enhance the level of business-IS alignment in an organization. However, most research has focused on improving the quality and frequency of communications. Very few studies have discussed the specific informal activities IS staff carry out to aid their non-IS colleagues. This limited attention on the behaviours of IS employees restricts our understanding of how positive interaction between IS and non-IS employees can be encouraged and how it affects the IS department's performance. Drawing on the concept of organizational citizenship behaviour (OCB), we derive a set of IS-specific OCB by reviewing the literature and relate them to characteristics of IS departments and IS employees. Our research questions are: a) when is IS-specific OCB more likely to occur? How does IS-specific OCB affect the performance and reputation of the IS department or unit?

Keywords

IS Departments, Organizational Citizenship Behaviour, IS Performance, IS Reputation.

1. Introduction

The increased pervasiveness of information technology (IT) in organizations has been accompanied by a steady rate of improvement in its capabilities. One consequence of this is that employees often face stress from having to use as well as adopt new technologies at an almost unceasing pace. Information systems (IS) employees themselves struggle to keep up with this rate of change, and often end up helping their colleagues in the business departments when they face uncooperative, unclear or otherwise difficult-to-use technology. The use of IT in all aspects of an organization's work means that business and IS employees often interact more with each other than in previous decades, when IS staff used to handle back-end systems and databases. Today, IS staff frequently meet their peers from across their organization for a host of reasons, such as discovering their IT needs, confirming their specifications when developing the requirements for new applications, and conducting system testing and training. These interactions build personal relationships that are relied upon when non-IS employees face challenges with using IT, leading to a parallel growth in the level of informal interaction between these two groups of employees.

Ideally, IS departments are valuable sources of IS-related knowledge and resourceful providers of IS expertise that business units use to meet their IS requirements (Sambamurthy & Zmud, 2012). Thus, IS professionals working at different levels of IS departments are in a mutually supportive relationship with non-IS employees and provide them with IS services, such as IT remote support, troubleshooting, training, and voluntary handholding (Beaudry & Pinsonneault, 2005; Tarafdar & Gordon, 2007; Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2011). The need for formal frequent communications and knowledge-sharing between IS professionals and business employees at different levels, such as the managerial level (e.g. between CIOs and CEOs) (Feeny, Edwards, & Simpson, 1992; Rau, 2004; Reich & Benbasat, 1996, 2000), the individual level (between IS professionals and their business clients) (Bassellier & Benbasat, 2004), and the group level (between IS and business groups) (Nelson & Coopridge, 1996; Tarafdar & Gordon, 2007), has been widely studied. The quality and extent of formal interactions are related to the quality of outcomes relevant to the IS department, such as IS/IT project success (Ewusi-Mensah, 1997; Powell & Yager, 2004; Ramakrishna & Lin, 2004; Roberts, Cheney, Sweeney, & Hightower, 2004) and mutual understanding and closer relationships between IS and business professionals (Bassellier & Benbasat, 2004).

The IS literature has long argued for the importance of better linkages between IS and business employees to build shared understanding and cross-domain knowledge, so as to ultimately enhance the social aspect of business-IS alignment in an organization (Benbya & McKelvey, 2006; Campbell, Kay, & Avison, 2005; Chan & Reich, 2007; Reich & Benbasat, 2000). However, in examining the social aspects of these relationships, most research has focused on improving the quality and frequency of communications, and little work has discussed the informal activities IS staff carry out to aid their non-IS colleagues (Jaspersen, Carter, & Zmud, 2005; Ross, Beath, & Goodhue, 1996; Tarafdar & Qrunfleh, 2009). Informal communications and interaction between IS and

non-IS professionals occur through specific positive behaviours, such as a willingness to share workarounds with peers in a non-mandatory context. These informal activities have been found to enhance IS professionals' self-development and job performance (Constant, Kiesler, & Sproull, 1994; Messersmith, 2007; Sykes & Venkatesh, 2009).

The lack of research on the informal activities of IS professionals in their organizations means that there has been little attention on what IS employees are actually doing, preventing researchers from understanding how such positive behaviours can be encouraged and how they affect the performance of the IS department. Drawing on the concept of organizational citizenship behaviour (OCB), we derive a set of IS-specific OCBs by reviewing the IS literature and relate them to characteristics of IS departments and IS employees.

2. Literature Review

The primary task of the IS department, unit or group in an organization is to meet the needs and demands of its peer business units by providing the skills and support they need to improve or maintain their performance (Agarwal & Sambamurthy, 2002; Salmela, 1997). IS professionals need good social and interpersonal skills, usually referred to as "soft skills", to communicate with their IS and non-IS colleagues and gather relevant knowledge (Joseph, Ang, Chang, & Slaughter, 2010; Teo & Ang, 2001). IS designers or developers with technical skills are often required to improve their social skills to communicate with their project members, so that they can reach out to them and help resolve conflicts to arrive at a consensus.

Besides good communication skills, social ties can also be enhanced by group members performing specific behaviours to increase group productivity and morale (Blanchard, Carew, & Parisi-Carew, 1996). The quality of social liaisons and communications between IS professionals and their peers in business units encourage IS-specific positive behaviours to occur, such as providing technical advice or voluntary handholding between IS groups and business units (Tarafdar & Gordon, 2007; Zhang & Jones, 2011). Examples of such behaviours include IS professionals sharing software or data in a non-mandatory context, and in the process enhancing their reputation as team-players (Constant et al., 1994). Another example could be IS professionals answering queries in their local intranet, with no regard for who posted the queries or might read their replies (Constant, Sproull, & Kiesler, 1996).

Such behaviours can be classified into these categories: i) IS helping behaviours (Jaspersen et al., 2005; Rice, Collins-Jarvis, & Zydney-Walker, 1999; Sykes & Venkatesh, 2009) ii) voluntary sharing of IT-related knowledge (Bock, Zmud, Kim, & Lee, 2005; Constant et al., 1994; Kettinger, Zhang, & Chang, 2013; Nelson & Coopridge, 1996), iii) voluntary assumption of responsibilities (leading, scheduling, and attending meetings) (Curtis, Krasner, & Iscoe, 1988; Walz, Elam, & Curtis, 1993), and iv) provision of informal training (Davis, Kettinger, & Kunev, 2009; Teo & Ang, 2001). Helping behaviours have been found to reduce the intent of IT professionals to leave their organisation (Paré, Tremblay, & Montréal, 2007), improve software design productivity, and enhance software development success (Messersmith, 2007; Walz et al., 1993). Differences in the level of such behaviours across groups have a negative curvilinear effect on group performance (Barry & Stewart, 1997; Ng & Van Dyne, 2005) and sometimes, a negative relationship with group performance, effectiveness, and group task accomplishment (Barrick, Stewart, Neubert, & Mount, 1998).

In IS departments, IS staff may be motivated to share their knowledge and provide IT-related assistance to their peer business units because of an interest in improving the IS unit's performance and/or reputation (Constant et al., 1994; Powell & Yager, 2004). Staff in the non-IS units would appreciate such actions (Ramakrishna & Lin, 2004), encouraging top management or business unit leaders to allocate more resources to the IS department to demonstrate their appreciation. The provision of additional resources, such as advanced IT infrastructure and the ability to hire more developers, designers and programmers, will, in turn, enhance the performance of the IS department (Porra, Hirschheim, & Parks, 2005, 2006).

This section has shown that the IS literature has often discussed the various ways in which IS professionals help their non-IS colleagues. However, these behaviours have rarely been integrated so that a holistic analysis of their impact and value can be undertaken. This is unlike research on the level of communication, connections, and shared understanding between IS and non-IS employees, which has been well-studied (Bassellier & Benbasat, 2004; Reich & Benbasat, 1996, 2000). As IT use increases in organizations, IS and non-IS employees interact more frequently and across all levels of the organizational hierarchy so as to use their IT resources more effectively, and hence improve the organization's level of business-IS alignment (Chan & Reich, 2007). There is thus a need to examine the different behaviours that IS staff carry out to assist in this process.

3. Conceptual Development

This study draws on the concept of organizational citizenship behaviour (OCB) from the management literature to build its arguments. OCB refers to individual behaviours that are discretionary, not directly or explicitly recognized by formal reward systems, and not specified by role prescriptions, such as assisting or supporting employees, or avoiding unethical behaviours in organizations (Brief & Motowidlo, 1986; Organ, 1989; Van Dyne & LePine, 1998). Such prosocial behaviours promote the effective functioning of an organization, because they improve employee performance, free organizational resources, improve coordination, and enhance the work climate (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). For example, helping behaviours make it possible for a group to perform better than those groups in which members are working on tasks alone (Porter., 2005).

OCBs are usually classified into seven types: helping behaviours, sportsmanship, organizational loyalty, organizational compliance, individual initiative, civic virtue and self-development (Podsakoff et al., 2000). *Individual-targeted* behaviours, such as helping, cooperating behaviours (altruism and courtesy) and interpersonal facilitation, are directly beneficial to individuals and indirectly beneficial to organizations. In comparison, *organization-targeted* behaviours, such as organizational loyalty, civic virtue, organizational compliance and conscientiousness, benefit the organization directly (Ilies, Nahrgang, & Morgeson, 2007; Podsakoff et al., 2000).

Recently, researchers have extended their understanding of OCB so that it encompasses group-level behaviour. Chen, Lam, Naumann, and Schaubroeck (2005) term this group citizenship behaviour (GCB) and conceptualize it as group-level behaviours that work groups engage in to support their group's performance and their organization's effectiveness. Group-level OCB has a positive impact on group performance, as well as group effectiveness (Nielsen, Hrivnak, & Shaw, 2009; Podsakoff & MacKenzie, 1997; Podsakoff, Ahearne, & MacKenzie, 1997). Group-level OCBs, such as helping behaviours, are known to positively affect group performance beyond the impact of other group process variables, such as group cohesion, conflict, and leader effectiveness (Ehrhart, Bliese, & Thomas, 2006). In this study, we focus on individual-level OCB, i.e. behaviours directed by IS professionals at their non-IS colleagues, and not on the level of OCB within the IS group itself, which is what group-level OCB refers to. We hope to explore the latter topic in future research, as there may possibly be a relationship between the two concepts.

3.1 Why Do Such Positive Behaviours Take place?

The incidence of OCB is affected by the extent to which group members differ in attributes such as knowledge, background, experiences, and personality traits (e.g., level of extraversion, organizational commitment, and conscientiousness) (Barrick et al., 1998; Barry & Stewart, 1997; Curtis, Walz, & Elam, 1990; Porter et al., 2003; Van Der Vegt & Bunderson, 2005). These differences in individual characteristics influence the quality of interactions and exchanges that occur within a group, and consequently group-level outcomes (Porter et al., 2003; Wei, Crowston, Li, & Heckman, 2014). For example, the presence of such positive behaviours can vary within groups because of the differences in the level of expertise among group members. At the group level, knowledge diversity negatively affects the extent of helping and loyal behaviours (Van Der Vegt, Van De Vliert, & Oosterhof, 2003) and group performance (Van Der Vegt & Bunderson, 2005). Besides individual characteristics, other factors that influence the occurrence of OCB include task characteristics (e.g., frequency of task feedback), organizational characteristics (e.g., reward systems), and presence of leadership behaviours (e.g., transformational leadership) (Bergeron, 2007; Carter, Armenakis, Feild, & Mossholder, 2013; Lavelle, McMahan, & Harris, 2009).

One determinant of individual-level OCB is the quality of exchange activities between group members, or what is called team-member exchange (TMX). TMX refers to the level of group members' engagement in reciprocal behavior. 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). Group members' interest in exchanging trust, recognition, and help is positively correlated with their job performance, job satisfaction, and organizational commitment (Banks et al., 2013; Wech, 2003). Members in groups with high-quality TMX manifest high levels of OCB, with members providing each other instrumental and socio-emotional resources (Anand, Vidarthi, Liden, & Rousseau, 2010). The type of within-group interactions depends on differences in personality traits and knowledge diversity among group members (Barrick et al., 1998; Barry & Stewart, 1997; Nahrgang & Morgeson, 2009; Podsakoff & MacKenzie, 1997; Podsakoff et al., 1997; Van Der Vegt et al., 2003). Organizational and individual-targeted citizenship behaviours or the enhancement of group-level OCBs, such as cooperation, helping or loyal behaviours, courtesy and altruism, can be predicted from exchanges between group members in the group (Barry & Stewart, 1997; Ilies et al., 2007; Kidwell, Mossholder, & Bennett, 1997; Podsakoff & MacKenzie, 1997; Podsakoff et al., 1997; Porter et al., 2003; Van Der Vegt et al., 2003). Differences in the level of OCBs can have

a negative curvilinear (Barry & Stewart, 1997; Ng & Van Dyne, 2005) or linear effect on group performance (Barrick et al., 1998).

3.2 What May Restrict the Occurrence of Such Positive Behaviours?

The nature of the IS profession may restrict IS staff from engaging in prosocial behaviours (Moore & Love, 2005). Work exhaustion or job burnout is higher in IT departments than other departments (Tarafdar et al., 2011). Exhaustion or burnout is a state of physical, emotional, and mental exhaustion that results from long-term working relationships with people and a long-term involvement in demanding situations. The effects of work exhaustion are reflected as costs to the organization, in terms of diminished organizational commitment, reduced job satisfaction, and higher turnover and absenteeism (Andrews & Dziegielewski, 2005; Leiter & Maslach, 2009; Lu, Barriball, Zhang, & While, 2012; Lu, While, & Barriball, 2005; Zhang et al., 2014).

The high level of exhaustion can be attributed to some well-known features of the IS profession, such as a high workload, a relatively high incidence of work-life conflict, a lack of autonomy and management recognition, role ambiguity, role conflicts, and having to operate with limited resources (Joseph, Ng, Koh, & Ang, 2007; Mary C. Lacity, Iyer, & Rudramuniyaiah, 2008; Messersmith, 2007; Moore, 2000; Tarafdar et al., 2011). A lack of resources, work overload, limited autonomy and recognition of management are known to affect the performance of IS professionals (Moore & Love, 2005; Porra et al., 2005).

Figure 1 depicts the research model that will be tested in this study. Integrating prior research on the determinants and consequences of OCB, along with the literature on IS professionals, this study argues that the incidence of individual-level IS-specific OCB is affected by: a) the level of work exhaustion perceived by individual IS professionals, and b) the attributes of their work-group. Consequently, the frequency and extent of IS-specific OCB influences the performance and reputation of the IS department. Business units appreciate receiving assistance from their IS peers outside official channels and roles, and the more often such behaviour takes place, the better the reputation of the IS department will be. Similarly, IS departments which help and guide their clients from their business units above and beyond their formal responsibilities will perform better because they would have acquired the trust of their peers and have better insight into their IT requirements, and thus be in a better position to fulfil them appropriately.

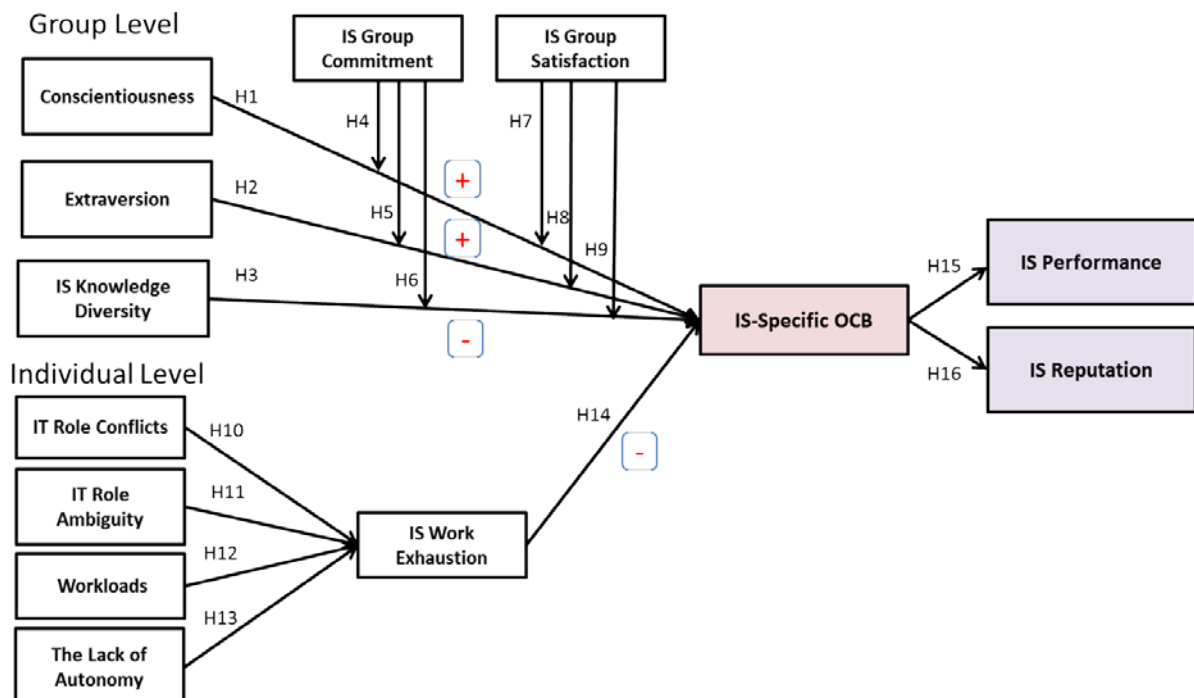


Figure 1: Research Model

4. Methodology

A survey questionnaire will be used to gather data from for this study. Members of the IS function will be asked to answer questions about the characteristics of their departments and jobs, while non-IS employees from other

business units will be asked to rate the IS function's performance and reputation. The IS function consists of all IS professionals, IS groups, and IS departments within the organization, that interact regularly with business employees from different departments (Chang & King, 2005; Nelson & Coopride, 1996). The measures for the survey will be from existing studies (Table 1). Large and medium-sized New Zealand organizations will be targeted, as they will have frequent and intensive interaction between their IS and non-IS staff, 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

	Construct	Source
1	Within-group personality differences	(Barrick, Stewart, Neubert, & Mount, 1998)
2	Within-group knowledge diversity	(Van Der Vegt & Bunderson, 2005; Van Der Vegt, Van De Vliert, & Oosterhof, 2003)
3	Commitment	(Allen, 1990; Ellemers, Kortekaas, & Ouwerkerk, 1999)
4	Satisfaction	(Chou, Jiang, Klein, & Chou, 2011; Hackman & Oldham, 1975)
5	IT Role Ambiguity	(Moore, 2000)
6	IT Workloads	
7	IT Conflicts	
8	IT Autonomy	
9	Work Exhaustion	
10	IS-Specific OCB	(Williams & Anderson, 1991)
11	IS Performance	(Chang & King, 2005; Nelson & Coopride, 1996)
12	IS Reputation	

A key feature of this study is its multi-level nature. While some constructs are at the individual level of analysis, others are 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, IS knowledge diversity of IS professionals that is a matter of IS professionals' experience, education, and functional specialty (Van Der Vegt et al., 2003) will be calculated by using a formula from Tsui, Egan, and O'Reilly (1992). Another issue that is crucial for this study is time, as it may complicate relationships among variables (Klein & Kozlowski, 2000b). For example, after how long do IS-specific OCBs affect the performance and reputation of an IS department? When do higher-level constructs, such as group knowledge diversity, affect individual behaviour? Finally, group size will affect levels of exchange within a group. Larger groups will be more unwilling to help their peers (Lee & Lee, 2010). Thus, in our study, the size of the IS department will have an impact on how likely IS employees will carry out IS-specific OCBs.

As the outsourcing of IS functional areas has grown, formally assessing the performance of the IS function has become more difficult, leading to a need for more IS research on this issue (Lacity & Willcocks, 2009). In this study, a functional scorecard from Chang and King (2005), that assesses IS capabilities, IS effectiveness/success, IS service quality, IS functional and IS sub-functional evaluation, will be used to measure the IS department's performance. This study differs from others by examining the effect of the prosocial behaviours of IS professionals on the performance of the IS department (Davis, 2003).

Multilevel structural equation modelling (MSEM) will be used in this study to model the constructs, reduce the impacts of measurement error, and enable researchers to assess the fit of the model to data (Preacher, 2011). MLSEM will help to overcome the difficulty of using aggregated measures in group analysis (Schnake and Dumler, 2003), since the extent of reliability varies with average random individual-level errors and biases, homogeneity and heterogeneity within groups must be taken into account (Bliese, Halverson, & Rothberg, 1994). There is little guidance on the appropriate sample size for MSEM studies; however, MacCallum, Brown, and Sugawara (1996) recommend that the sample size depends on the complexity of the model, such as having a few acceptable measures of a construct. Thus, sample sizes should vary from 200 to 400 participants, with complex models or constructs with few satisfactory measures requiring larger sample sizes (Weston and Gore, 2006). In this study, we estimate that a sample size of 300 IS professionals and 100 business employees will be needed to test the model.

5. Contribution

This study offers a new perspective to the IS literature on IS-specific behaviours, and their impact on the performance and reputation of the IS department. Since Curtis et al.'s (1990) research on groups of software experts and their differences in technical skills, there has been great need for research on the differences among IS professionals within IS groups and the effect these differences have on IS group outcomes.

This study will contribute significantly to the literature on IS professionals as little work has examined the IS-specific behaviours they engage in with their non-IS colleagues. Although there have been some studies of IS-specific behaviours (e.g., IS helping behaviours) conducted between IS professionals or through their interpersonal networks, the IS literature is largely silent on how group-level differences affect the occurrence of such IS-specific behaviours. As both the technical and soft skills of IS professionals matter for their performance, we have chosen constructs from both these aspects (e.g. IT expertise and extraversion) to investigate how differences in them affect IS group performance.

From the perspective of the OCB literature, this study contributes by examining group-level outcomes of OCB, which have not been widely-studied. This research will also contribute by expanding the list of antecedents of OCB. The research will also extend the literature on IS work exhaustion by examining how it affects the tendency of IS professionals to engage in prosocial behaviours. Finally, this research study further develops our understanding of the reputation of the IS department and its determinants. As IS support expands beyond traditional formal channels into more informal and diffuse modes of guidance (e.g. blogs and online support forums such as Stack Exchange), the reputation of the IS department could be improved or worsened by the actions of its members outside their regular roles. 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, understanding which behaviours affect it is an important topic for research. Practically, the implications of this study are useful for managers when planning the composition of IS project groups or IS departments. They will be able to deploy the right mix of IS professionals with certain personality attributes so as encourage prosocial behaviours that influence IS project success and the performance of IS departments.

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