

Information Technology Self-Leadership

Dr. U. Yeliz Eseryel, University of Groningen

u.y.eseryel@rug.nl

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ABSTRACT

Despite the high level of information technology (IT) investments, IT is underutilized. This paper focuses on how IT can be utilized to innovate task processes, therefore contributing to performance. This paper conceptualizes and theorizes about 'information technology (IT) self-leadership'. I define IT self-leadership as the behaviors of an individual that bring about a process innovation in the accomplishment of a task by incorporating information technologies, where the task definition does not explicitly refer to a need to use any information technologies. This paper concludes with the research model and the accompanying propositions. I expect that the characteristics of the individuals (such as their general self-leadership and computer self-efficacy) as well as the organizational climate (including formal leadership and the IT-related social norms) contribute to IT self-leadership. IT self-leadership, in turn, contributes to performance. I also expect that task motivation moderates the influence of general self-leadership on IT self-leadership.

Keywords

Information technology self-leadership, transformational leadership, computer self-leadership, computer self-efficacy, social norms, team performance, innovation.

INTRODUCTION

The worldwide spending on information technology (IT) was \$3.6 trillion in 2012 and is expected to increase by 4.2% in 2013 according to a Gartner Group forecast (Gartner Group 2013). Yet, this remarkable spending in information technology does not always deliver the promised benefits (Jaspersen et al. 2005). IT is rarely used to its fullest potential to bring the expected return on investment (Jaspersen et al. 2005), which is attributed to underutilization of the installed information technologies (Hsieh and Wang 2007). Wang et al. (2011) suggest that one way to fully utilize installed information technologies is to innovate using these technologies. Indeed it is interesting to see how some individuals go about accomplishing their tasks using technologies or methods that they are comfortable with, while others prefer investing their time in a new technology or in using existing information technologies more innovatively in order to accomplish the same tasks faster, better or more creatively. This last behavior exemplifies self-leadership in the area of information technology use (software and hardware including hand-held devices and tablets). Individuals can innovate using existing or novel information technologies, when they identify ways to adjust, combine and use information technologies in a way that enables them to either improve their own work, or the work and coordination of their team. I call this phenomenon IT self-leadership, as these individuals are exhibiting a type of self-leadership with information technology. Self-leadership can be defined as self-imposed strategies for managing performance of tasks (Manz 1986). In the case of IT self-leadership, the self-imposed strategies are strategies about using, redesigning or recombining information technologies in novel ways to perform one's tasks rather than doing the tasks in the usually expected way. The goal of this study is to identify this IT self-leadership behavior that I observe in business settings even though the concept was not previously coined, and to determine the factors that bring about IT self-leadership so that such behavior can be reinforced, and thus teams and organizations achieve the expected return on investment from their IT spending. In line with this goal, our main research question is to answer the following research question:

What are the factors that contribute to Information Technology Self-Leadership?

LITERATURE

In this section, I first make the connection between IT self-leadership and performance. Next, I identify the individual characteristics and the aspects of the organizational climate that may contribute to IT self-leadership. The individual

characteristics are those that reside within the individual who provides the IT self-leadership. These two types of factors are expected to increase the likelihood that the individual will provide self-leadership in the area of information technology use.

IT Self-Leadership and Performance

Here, I will further clarify what is meant by IT self-leadership. This term specifically refers to the behavior of innovating task process by using information technologies, where such technologies are not part of the original task definition. The process innovation may include (1) using new or novel information technologies, (2) combining one or more common technologies into the process where these technologies were not used, or (3) exploiting an existing technology or information system at a higher level than originally accustomed. IT self-leadership can happen at the individual level or at the group level. At the individual level, the person uses information technologies in order to improve the efficiency or effectiveness of his or her tasks. At the team level, the person improves the process that his or her team uses by incorporating information technologies in the team's communication, collaboration or work processes. Therefore, the team performance is improved. Wang and Li (2011) suggest that users can innovate using technologies by "applying IT in novel ways to support their own task performance, a high-level usage behavior that surpasses routine and simple ways of use" (p. 1), therefore addressing the IT self-leadership behavior regarding one's own tasks. However, I have not, to date found any literature that refers to the IT self-leadership behavior that facilitates and innovates a team's task.

Thus, I suggest that;

Proposition 1: *Information self-leadership of individuals improve the individual's or group's task performance by innovating individual or group processes through the use of information technologies.*

The concept of self-leadership is significant in that it spans organizational levels and ties together research at individual and group levels of analysis (Stewart et al. 2011). Thus, I expect this concept to be crucial to individuals' performance at the team level. Yet, findings show conflicting results about the influence of individuals' self-leadership on the team outcomes. Hauschildt and Konradt (2012) suggest that higher levels of self-leadership leads to increased efforts towards the team. Yet, others suggest that self-leadership does not appear to be so universally beneficial at the team level (Stewart et al. 2011). It is hoped that this study can contribute to the resolution of this conflict in the literature.

Next, I discuss the individual level antecedents of the IT self-leadership.

Individual Characteristics: (1) Self-Leadership

Self-leadership is a comprehensive self-influence perspective that concerns leading oneself toward performance of both (1) naturally motivating tasks and (2) the tasks that must be done but are not naturally motivating (Manz 1986). The concept of self-leadership (Manz 1983; Manz 1986) emerged in the mid-1980s as an expansion of self-management (Manz and Sims Jr 1980). Self-leadership is more focused on the phenomenon self-influence whereas self-management is influencing on other aspects (Furtner et al. 2011). Self-management was grounded in clinical self-control theory (Cautela 1969) and was inspired by Kerr and Jermier's (1978) concept of substitutes for leadership.

Individuals who exhibit self-leadership use three strategies to influence their performance outcomes. These are; behavior-focused strategies, natural reward strategies and constructive thought pattern strategies.

Behavior-focused strategies make behavior management easier. Examples of these strategies include self-goal setting (setting a goal and identifying how to achieve it), self-rewarding (producing one's own reward), self-punishment (the act or an instance of punishing oneself) and self-observation (examination of one's own thoughts or emotions) (Neck and Houghton 2006).

Natural reward strategies help people build pleasant and enjoyable features into their activities so that the tasks themselves become naturally rewarding (Manz and Neck 1998). These strategies increase intrinsic motivation, self-determination, and feelings of competence (Deci and Ryan 1985; Neck and Houghton 2006). They reinforce positive experiences and perceptions during the execution of tasks.

Constructive thought pattern strategies create positive habits of thinking and replace negative destructive self-talk with optimistic self-talk (Neck and Houghton 2006; Seligman 2011). Examples of constructive thought pattern strategies include

the evaluation and challenging of irrational beliefs and assumptions, mental imagery of successful future performance, and positive self-talk.

Through the use of these three motivational strategies, self-leaders exhibit higher task-behaviors than others (Hauschildt and Konradt 2012). Self-leadership at the individual level is consistently related to improvement in both work attitudes and performance according to researchers (Stewart et al. 2011). People scoring higher on self-leadership could be characterized as open-minded, intellectual, creative, energetic, dynamic, and controlled. They pursue plans and goals in the long run with perseverance, while not neglecting to self-motivate and self-reward themselves. Self-leadership holds potential for explaining motivated and goal-oriented behaviors, and is also important in more applied fields (Furtner et al. 2011).

While the connection of self-leadership to team outcomes is crucial, in this study, I connect self-leadership to team outcomes at an indirect level. One may argue that individuals who exhibit self-leadership in one area may be more likely to exhibit self-leadership in another area. However, I argue that when it comes to information technology self-leadership, the relationship between the two types of self-leadership is moderated by the task motivation. I expect that when the individuals with high self-leadership have an intrinsically motivating task at hand, they will tend to focus on the task and complete the task without having to innovate the process by which they would do the task, therefore not showing a high level of IT self-leadership. However, when these individuals have a task that is not intrinsically motivating, the self-leaders would still do their best to get the tasks completed even though these tasks would be cumbersome or time-consuming, or otherwise unpleasant tasks. Therefore, I expect that individuals who have high levels of self-leadership will try to find innovative ways of using the information technologies in order to automate, simplify or otherwise reduce the emotional and physical burden of the unwanted tasks. Therefore I suggest that:

Proposition 2: *Task motivation moderates the relationship between an individual's general self-leadership and IT self-leadership.*

Proposition 2a: *When a task is intrinsically motivating, individuals with high self-leadership are less likely to exhibit IT self-leadership behaviors.*

Proposition 2b: *When a task is intrinsically un-motivating, individuals with high self-leadership are more likely to exhibit IT self-leadership behaviors.*

Individual Characteristics: (2) Computer Self-Efficacy

Self-efficacy can be defined as people's judgment of their capabilities to organize and execute courses of action required to attain designated types of performances. It is not concerned with the skills one has but with judgments of what one can do with whatever skills one possesses (Bandura 1986).

Similarly, computer self-efficacy refers to one's own judgment of his or her capability to use computers. Computer self-efficacy is future-oriented in that it focuses on what an individual is capable to do in the future with computer technologies. Thus, it concerns judging the ability to apply one's computer skills to broader tasks (Compeau and Higgins 1995). The magnitude of computer self-efficacy reflects the degree of the expected capability. Individuals with a high magnitude of computer self-efficacy assume that they are able to complete challenging computer-based tasks without needing support from others. Antecedents of general computer self-efficacy include computer knowledge, computing experience and age (He and Freeman 2010). Computer anxiety influences computer self-efficacy negatively. He and Freeman (2010) found that computer self-efficacy positively contributes to individuals' intention to use management information systems both directly and indirectly. Indirectly, individuals with higher computer self-efficacy then have a positive attitude toward computers, which in turn contributes to their intention to use management information systems (He and Freeman 2010). While He and Freeman's (2010) research focuses on the connection between computer self-efficacy and intention to use information technologies, I would like to build on their work to hypothesize one step further to innovating with information technologies. I expect that individuals who possess more knowledge and experience about computers would have higher computer self-efficacy, and therefore they would be more likely to exhibit information technology self-leadership to introduce new information technologies, or innovative use of existing information technologies in order to improve their own task performance or the performance of the group that they are a part of. To sum up, I suggest that;

Proposition 3: *Self-efficacy of an individual in the area of information technologies contributes to IT self-leadership of that*

individual at individual or group levels.

So far, I discussed the individual characteristics that influence the IT self-leadership. Next, I discuss the elements of organizational climate that contributes to IT self-leadership.

Organizational Climate: (1) Transformational Leadership

Transformational leadership is a very powerful type of leadership where the leaders not only create acceptance among followers toward group goals, but also move their followers to go beyond their self-interests to achieve these goals for the good of the group (Burns 1978). Transformational leadership is strategically important for information systems development. Transformational leaders increase organizational performance (Chan and Reich 2007; Leidner et al. 2010) by creating an innovative IS-climate (Leidner et al. 2010; Watts and Henderson 2006).

Purvanova & Bono (2009) found that the most effective virtual team leaders were those that increased their transformational leadership. They also revealed that the effect of transformational leadership on team performance is stronger in virtual teams than in face-to-face teams (Purvanova and Bono 2009).

Transformational Leadership refers to the leader influencing the follower to act beyond immediate self-interests through idealized influence, inspiration, intellectual stimulation or individualized consideration (Bass 1985). This type of leadership elevates the follower's level of maturity and ideals as well as concerns for achievement, for self-actualization, and for the well being of others. Idealized influence and inspirational leadership are displayed when the leader envisions a desirable future, articulates how it can be reached, sets an example to be followed, sets high standards for performance, and exhibits determination and confidence (Bass 1985).

According to Bass (1985), transformational leaders help their followers become more innovative and creative (Bass 1985). Thus, I would expect the transformational leaders to contribute to the innovative IT use behavior that I call IT self-leadership. Similarly, Afshari et al. (2009) found a strong positive relationship between transformational leadership and computer use, whereas such a relationship was not found between transactional leadership and computer use. This also indicates that a transformational leadership style has a positive effect on information technology self-leadership. Therefore I posit that

Proposition 4: *Transformational leadership of the team leaders increase IT self-leadership of team members.*

Organizational Climate: (2) Social Norms

Norms are defined as social entities that hold implicit and explicit rules that guide an individual member's interpretation, contribution and behavior (Annabi 2005). Team norms are influenced by national, organizational and occupational cultures. Norms allow team members to form reliable expectations of others' actions (Rossi 2004). The importance of such norms have been documented for information systems field such as in software development domain (Raymond 1998; Stewart and Gosain 2005). Organizations and consequently the teams that reside in them may have specific social norms about information technology usage. For example in open source software development teams, there are clear norms on the use of shared information technologies that are accessed by all team members and outsiders for communication, coordination, work and decision making (Scozzi et al. 2008). These norms motivate members of open source software development teams to exhibit IT self-leadership using publically accessible information technologies. Therefore I expect that the organizational climate would affect the IT self-leadership behaviors of the team members, especially in that more innovative climates would then cause individuals to show higher levels of IT self-leadership.

Proposition 5: *In teams where social norms indicate high value for information technologies, the IT self-leadership of team members are higher than the members of the teams where social norms do not regard information technology use favorably.*

Figure 1 summarizes the research model. Next, I briefly discuss the research model and discuss potential contributions of this research.

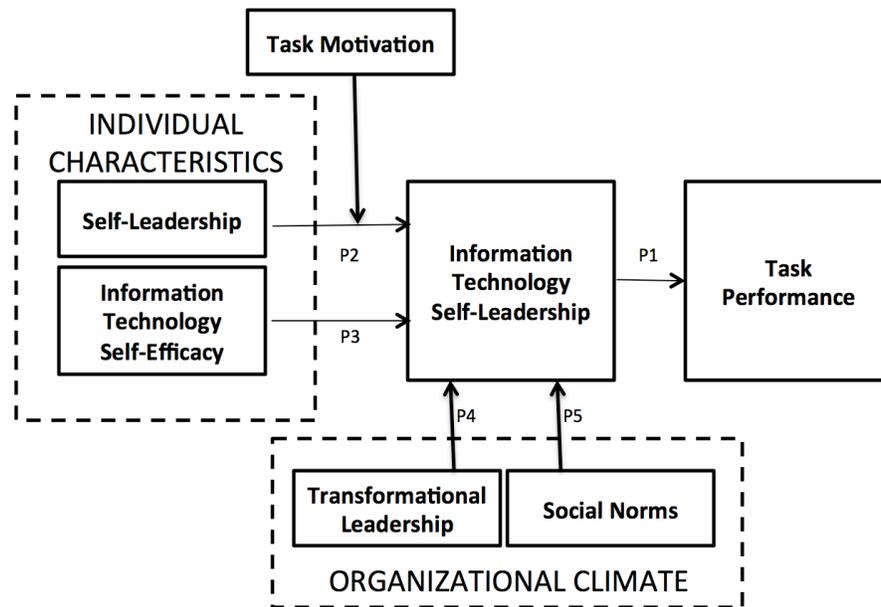


Figure 1. The Research Model

RESEARCH METHOD

This research study is currently being conducted with 220 individuals through surveys using convenience sampling. The survey is constructed using existing instruments for self-leadership (Houghton and Neck 2002), computer self-efficacy (Compeau and Higgins 1995), and transformational leadership (Podsakoff et al. 1990). The task performance, task motivation and social norms are measured based on the perceptions of the respondents.

DISCUSSION

The data collection and analysis will be completed and will be presented at the conference. The findings of this study are expected to contribute both to the literature and practice by identifying the factors that would encourage individuals to exhibit information technology self-leadership. Companies can then use this information for (1) personnel selection, and (2) to create the right organizational climate in cases where IT use is important for innovation and task performance. Furthermore, this study takes on a very different approach to IT adoption and use research by focusing on innovativeness with information technologies rather than the adoption versus rejection of certain given technologies.

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