Understanding "disengagement from knowledge sharing": engagement theory versus adaptive cost theory

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Abstract

Purpose – *The purpose of this paper is using competing hypotheses (a spillover hypothesis, based on Engagement Theory, and a provisioning hypothesis, based on Adaptive Cost Theory) to help explain why employees become disengaged from knowledge sharing.*

Design/methodology/approach – *Employed knowledge workers completed an online questionnaire regarding their job characteristics, their general health and wellness, perceived organizational support, job engagement and disengagement from knowledge sharing.*

Findings – *The findings provide empirical support for Adaptive Cost Theory and illustrate the relationship between Engagement Theory and the Disengagement from Knowledge Sharing. In particular, this research illustrates the importance of health and wellness for preventing disengagement from knowledge sharing. In addition, the findings introduce a new finding of tensions between job engagement and knowledge sharing, which supports knowledge workers' complaints of "being too busy" to share.*

Research limitations/implications – *This study uses cross-sectional methodology; however, the participants are employed and in the field. Given the theoretical arguments that disengagement from knowledge sharing should be either short term or transient, future research should follow-up with diary methods to capture this to confirm the study's conclusions.*

Practical implications – *The findings of this study provide some insight for practitioners on how to prevent disengagement from knowledge sharing. New predictors and an interesting tension between job engagement and knowledge sharing are identified.*

Originality/value – *This study examines an alternative explanation for the lack of knowledge sharing in organizations, and uses competing theories to identify the reasons for the disengagement from knowledge sharing.*

Keywords *Knowledge sharing, Adaptive cost theory, Disengagement, Engagement theory, Knowledge hoarding*

Paper type *Research paper*

1. Introduction

Knowledge sharing is critical for organizational success (Alavi and Leidner, 2001; Birkinshaw and Sheehan, 2002), yet there have been a variety of reasons why employees fail to share their knowledge. For example, employees' desire to protect their knowledge or an employee responding to organizational expectations to protect their knowledge are two reasons why employees hide or hoard their knowledge (Webster *et al.*, 2008; Connelly *et al.*, 2012; Ford, 2008). However, in more cases, knowledge sharing fails to occur even when employees feel no need to protect their knowledge (Ford, 2008).

There have been a variety of approaches taken to address this problem:

- understand and eliminate reasons for hoarding or hiding knowledge (Connelly *et al.*, 2012);
- understand the complexities associated with sharing knowledge due to its nature (e.g. tacit knowledge; Swap, Leonard, Shields and Abrams, 2001); and

"The findings here suggest that as one's resources are depleted from being engaged in the job, there are fewer resources available for knowledge sharing."

- understand and remove interpersonal barriers (like access to experts, reach and availability of the knowledge shared; Szulanski, 2000).

Despite these research efforts, organizations still face challenges with employees' resistance to knowledge sharing. It is possible that these approaches are falling short because they are not addressing all of the reasons for the lack of knowledge sharing.

One study by Ford and Staples (2008) suggested an alternative reason for a lack of sharing, disengagement from knowledge sharing, which was defined as a lack of protection of the knowledge but also *a lack of communication* of the knowledge. Ford (2008), subsequently, examined this construct in interviews and found that this behavior (disengagement from knowledge sharing) helped to explain a gap in the literature. Furthermore, she argued it was the more common problem than hoarding or incomplete sharing of knowledge. Therefore, understanding why employees are disengaged from knowledge sharing is the focus of this research.

We examine two competing explanations for employee disengagement from knowledge sharing. The first explanation (*the spillover hypothesis*), grounded in Engagement Theory, is that their job is (dis)engaging, so they are also (dis)engaged from any tasks related to their job (e.g. knowledge sharing). Engagement Theory has been used to explain why individuals are (dis)engaged from their job or organization (Christian and Slaughter, 2007; Kahn, 1990, 1992). An "engaged employee" is one who is fully absorbed by and enthusiastic about their job and, consequently, takes positive action, such as knowledge sharing, to further the organization's reputation and interests (Rich *et al.*, 2010; Schaufeli *et al.*, 2002). The second explanation (*the provisioning hypothesis*), grounded in Adoptive Cost Theory, is that employees are so engaged with their job and its focal behaviors that they have no additional resources to spend on knowledge-sharing activities. In other words, they make provisions by focusing on what they believe are the most focal tasks of the job. Adaptive Cost Theory argues that individuals adapt to their environments and environmental demands by allocating resources (e.g. attention, effort and capacity) to prioritize tasks/behaviors (Cohen, 1978).

Answering the *spillover – provisioning* debate will make a number of contributions to both theory and practice. If *spillover* is the answer, then we can identify knowledge sharing as another positive outcome of efforts to engage the workforce. Managers can turn to the findings of research in this area to institute new programs that will increase employee engagement with a corresponding increase in the important task of knowledge sharing. If *provisioning* is the answer, managers have an important work to do in the organization. This implies that knowledge sharing is seen as a non-focal behavior in the workplace and managers will need to make efforts to promote this as an important, job-related task. In addition, a *provisioning* answer would highlight one of the potential costs of job engagement. Job engagement may come at the expense of some discretionary (i.e. non-focal) job behaviors such as knowledge sharing or possibly some types of organizational citizenship behaviors. In other words, depending on the answer, managers either need to generally promote job engagement and reap the benefits in knowledge sharing or they need to address the resource tension between job engagement and knowledge-sharing behaviors.

In the remainder of the paper, we populate both explanations and competing models; then we present the method and results of our study which tests the competing models. The results of our study support the *provisioning hypothesis* more so than the *spillover hypothesis.* Thus, we identify a new predictor associated with disengagement from knowledge sharing, while, at the same time, highlighting the importance of health and wellness as it relates to knowledge sharing. Finally, we discuss the implications for research and practitioners.

2. Literature review

2.1 Disengagement from knowledge sharing

Disengagement from knowledge sharing was first introduced by Ford and Staples (2008) as a by-product of seeking to define different knowledge-sharing behaviors. Disengagement from knowledge sharing was defined as *individuals who are neither actively sharing (communicating) their knowledge*, *nor motivated to protect their knowledge* (Ford and Staples, 2008). In other words, they are silent and withdrawn within the workplace when it comes to knowledge sharing. Disengagement from knowledge sharing is characterized by a low motivation to protect one's knowledge, alongside low levels of interpersonal communication (Ford and Staples, 2008). The end result is that knowledge is simply not shared, not because it is being protected, but simply because it is not being communicated. However, Ford and Staples (2008) did not empirically examine this proposed construct.

However, in an interview-based study, Ford (2008) found that disengagement from knowledge sharing was the more prominent concern for lack of knowledge sharing than incomplete knowledge sharing or protecting knowledge behaviors, as it constituted more than twice the number of incidents of partial sharing or hiding combined (disengagement from knowledge sharing constituted 69 per cent of the incidents versus 17 per cent for partial sharing and 14 per cent for hiding), and needed more research to understand it better. The reasons for disengagement from knowledge sharing identified by the participants tended to describe moments of being too busy, too ill, too tired or just not "being into" the job or the organization as a whole (Ford, 2008).

Based on these findings, there are two possible explanations for the prominence of disengagement from knowledge sharing. One is based on Engagement Theory, such that there is a *spillover* from engagement, or lack thereof, in the job to engagement in knowledge sharing. The other is based on Adaptive Cost Theory, where there is a *provisioning* of one's efforts away from knowledge sharing when there are too many demands on the individual (including engagement in the job). Next, we discuss each of these two possible explanations.

2.2 Engagement theory

Engagement Theory (Kahn, 1990) stipulates that given the right conditions, individuals will be engaged in their in-role job performances. Engagement is considered to be a motivational construct and is defined as "the simultaneous employment and expression of a person's "preferred self in task behaviors that promote connections to work and to others, personal presence (physical, cognitive, and emotional), and active, full role performances" (Kahn, 1990, p. 700). In this sense, the individual is energetically, emotionally and psychologically present when performing his/her role. In contrast, disengagement is seen

"Wellness factors have been seriously overlooked within the knowledge management literature to date."

"Managers might be undermining knowledge sharing/ knowledge management initiatives with other HR practices."

as a lack of energy, emotion and thought. It is characterized by passive, incomplete role-performances (Kahn, 1990), formally defined as, "the simultaneous withdrawal and defense of a person's preferred self in behaviors that promote a lack of connections, physical, cognitive and emotional absence and passive, incomplete role performances [. . .]. To defend the self is to hide true identity thoughts, and feelings during role performances" (Kahn, 1990, p. 701) or the removal of the essence of the person from his/her role, perhaps appearing robotic and impersonal; they become role custodians rather than role innovators (van Maanen and Schein, 1979; c.f. Kahn, 1990).

Although there have been many suggested definitions of engagement, common to all is the notion that employee engagement "is a desirable condition, has an organizational purpose, and connotes involvement, commitment, passion, enthusiasm, focused effort, and energy, so it has both attitudinal and behavioral components" (Macey and Schneider, 2008). One of the most widely known conceptualizations of engagement, and most rigorously tested, was presented by Schaufeli *et al.* (2002, p. 74), and it was defined as a "positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption".

Vigor is characterized by high levels of energy and mental resilience while working, reflecting a readiness to devote effort in one's work and persistence even in the face of difficulties. It represents activation and energy. Dedication (or being committed, persistent and the endeavor to strive for success) is characterized by a sense of significance, enthusiasm, inspiration, pride and challenge, and it represents a particularly strong identification with one's work. Finally, absorption is characterized by being fully concentrated and immersed in one's work, whereby time passes quickly and one has difficulty disengaging oneself from work. When employees are intrinsically motivated by their work, there is a stronger likelihood that they will immerse themselves to the point of complete absorption.

2.2.1 Predictors of job engagement. Kahn (1990) argued there were three predictors of (dis)engagement at work: meaningfulness, safety and availability. According to Kahn (1990, p. 705), meaningfulness is "the sense of return on investments of the self-in-role performances", safety is "the sense of being able to show and employ the self without fear of negative consequences" and availability is "possessing physical, emotional, and psychological resources for investing the self in role performances". People feel their role is meaningful when they perceive they gain value from undertaking the work, feel a sense of return from investing themselves in the role, and being involved in challenging work contributes to this sense of meaningfulness. With respect to safety, he suggested that people feel safe when they could present their real selves in their role without fear of negative consequences. Finally, individuals feel available to engage in their roles if they have the appropriate level of resources to meet the demands of the role.

May *et al.* (2004) tested Engagement Theory and the potential antecedents to meaningfulness, safety and availability in a field study in a US Midwestern insurance company. In particular, job enrichment (measured by job characteristics, Hackman and Oldham, 1980) and work role fit were found to be antecedents for meaningfulness; coworker and supervisor relations along with coworker norms and self-consciousness were found to be antecedents for safety; and resources (emotional, cognitive and health) and outside activities were found to be antecedents for availability.

Other researchers have not measured these constructs directly (i.e. meaningfulness, safety, and availability); instead they have opted to use proxies for the predictors of job engagement. In a meta-analysis, Saks (2006) found that the most common proxies, job characteristics (Hackman and Oldham, 1980), perceived organization support (Rhoades *et al.*, 2001) and procedural justice (Colquitt, 2001) were positively associated with engagement (i.e. organization engagement and job engagement) as antecedents.

Similarly, in this study, we use job characteristics as a proxy for meaningfulness. The job is proposed to be more meaningful if the characteristics can be described as:

- completing whole tasks;
- having a wide variety of tasks, which are significant and important;
- having decision autonomy from others; and
- receiving feedback (Hackman and Oldham, 1980).

When these characteristics are not present (e.g. the tasks become piecemeal or irrelevant, or there is a lack of decision autonomy, variety or feedback), then performing the job tasks become less interesting and less personally meaningful. Therefore, the more meaningful the job is perceived to be, the more engaged the employee would be.

As proposed by Kahn (1990), if individuals are going to express their true self cognitively, physically and emotionally, then this requires that they perceive that it is safe and that no harm will come to them for doing so. Consistent with past studies (Saks, 2006), safety has been operationalized as perceived organizational support (Saks, 2006). Perceived organizational support is characterized by the individual feeling that his/her organization cares about his/her well-being and values his/her contributions (Rhoades *et al.*, 2001). Saks (2006) argued that supportive supervisor relations are associated with psychological safety (May *et al.*, 2004). To the extent that this is the case, employees should feel safe in terms of their physical well-being, but also safe to contribute to the organization as they feel that the organization would recognize their contributions and not take advantage. Similarly, Dollard and Bakker (2010) found psychological safety climate (which includes perceived organizational support) to be related to job engagement.

Finally, according to Engagement Theory, people need to have the availability of physical, emotional and psychological resources to be able to engage in their role (Kahn, 1992). If they are sick or worried about other matters, they will not have the resources available to be present and engaged (Kahn, 1992). To the extent that employees have physical resources (i.e. health) and cognitive resources (e.g. lack of stress and distraction) available to them, they should feel more engaged in their job. Thus, according to Engagement Theory, meaningfulness, safety and availability should all be predictors of job engagement:

H1a. Meaningfulness is positively related to job engagement.

H1b. Safety is positively related to job engagement.

H1c. Availability is positively related to job engagement.

2.2.2 The spillover hypothesis. To date, research on Engagement Theory has primarily focused on individuals' roles within the organization. Rothbard (2001) suggests that

"The more practitioners want their employees engaged in their jobs and to be actively involved in knowledge sharing, then the importance of reducing workplace stress, improving the workplace conditions for the health and wellness of the employees becomes critical."

individuals play multiple roles within an organization, and Saks (2006, p. 604) argues that "research should examine engagement in multiple roles within the organization". While engagement has not been examined with respect to knowledge sharing *per se*, it is possible that individuals may play the role of informer, educator, mentor, catalyst for problem solving or knowledge broker within the organization, in which knowledge sharing is critical for role-performance (Street and Gallupe, 2003; Swap *et al.*, 2001). Therefore, the extent to which an individual has one of these roles within the organization (formally or informally) makes engagement directly relevant for knowledge sharing.

We argue that there may be a spillover effect from job engagement to knowledge sharing (such that the more engaged the individual is in his/her job, the more engaged and less disengaged from knowledge sharing) based on the following logic. First, job engagement is a motivational construct (i.e. an attitude), which impacts behavior (Rich *et al.*, 2010; Schaufeli *et al.*, 2002; Sonnentag, 2003; Salanova and Schaufeli, 2008), and disengagement from knowledge sharing was argued to be one of the possible knowledge transfer behaviors (Ford and Staples, 2008). Second, job engagement is most relevant for discretionary behaviors (Erickson, 2005), which knowledge sharing is deemed to be (Kelloway and Barling, 2000). Therefore, the more engaged an individual is, the more discretionary and citizenship behaviors (like knowledge sharing) would occur. Thus, individuals who are fully engaged in their job would then (as a spillover effect) share their knowledge and would likely exhibit a lot of full knowledge sharing (i.e. sharing all relevant knowledge) and benevolent partial knowledge sharing (i.e. withholding some knowledge while sharing some with the intentions of helping like prevent overload or promote learning) (Bigley and Roberts, 2001). Conversely, disengaged individuals would have the converse spillover effect and share less knowledge. Thus, Engagement Theory should explain disengagement from knowledge sharing through the spillover effect caused by job engagement, where job engagement is negatively related to disengagement from knowledge sharing, and it acts as a full mediator between the predictors of job engagement and disengagement from knowledge sharing. To that end, the following hypotheses are made (see Figure 1 for a summary illustration):

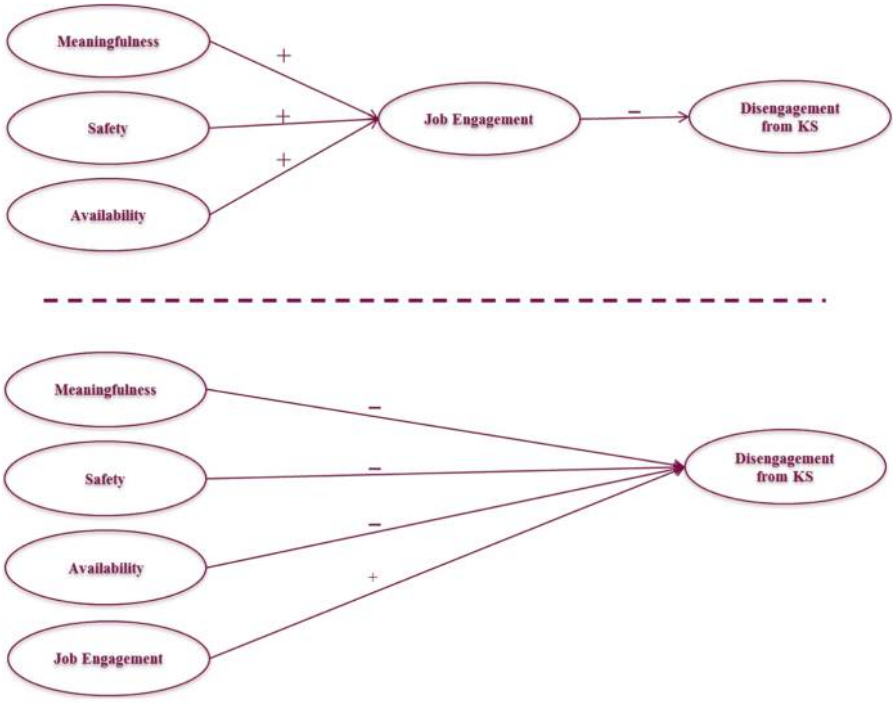
H2. Job engagement will be negatively related to disengagement from knowledge sharing.

H3. Job engagement will mediate the relationships between the antecedents (meaningfulness, safety and availability) and disengagement from knowledge sharing.

2.3 Adaptive cost theory

Adaptive Cost Theory seeks to explain the performance consequences of stressors and/or environmental demands (Cohen, 1978, 1980). With its roots in the stress literature, the theory suggests that humans can and do adapt to their environment (Cohen, 1980); however, adapting to these stressors is accompanied by costs, such as fatigue, injury or illness (Seyle, 1956). Instead of focusing solely on traditional stressors, though, Adaptive Cost Theory has been expanded to include more subtle stressors and environmental demands. Research originally investigated external physical demands (e.g. noise, increased task complexity) on performance. However, this line of research continued to examine less physical demands, and included additional stressors, like bureaucracy (Glass and Singer, 1972), harassment (Glass and Singer, 1972), task load (Cohen and Spacapan, 1978), actual and perceived time pressure (Connelly *et al.*, 2013, Cohen and Spacapan, 1978) and even enacting transformational leadership (Connelly and Arnold, 2011). The resulting costs to individual behavior have also been examined in terms of task performance (Cohen and Spacapan, 1978) and task motivation (Boman and Hygge, 2000). Thus, Adaptive Cost Theory focuses on individual performance and the effects of demands (environmental and stressors).

Figure 1 Competing theoretical models



Notes: Model 1: engagement theory (*spillover hypothesis*); Model 2: adaptive cost theory (*provisioning hypothesis*)

In summary, Adaptive Cost Theory has four fundamental assumptions:

1. "Humans have limited attentional capacities [. . .].
2. When the demands of the environment exceed capacity, a set of priorities is developed. The usual strategy is to *focus available effort on inputs most relevant to the task at hand at the cost of those that are less relevant* or *irrelevant to task performance* [. . .].
3. *The occurrence, or anticipated occurrence, of an environmental stimulus possibly requiring an adaptive response will activate a monitoring process that evaluates the significances of the stimulus and/or decides on appropriate coping responses* [. . .]. It follows that a person who is exposed to intense, unpredictable environmental stimulation has less attentional capacity available for task performance than he or she would under normal environmental conditions.
4. *Prolonged demands for effort cause a temporary depletion in capacity* [. . .]. Recovery of capacity occurs with rest [emphases in original]" (Cohen, 1978, p. 3).

In other words, as demands are placed on the individual, he/she must adapt. This is enacted through a monitoring and triaging effect (i.e. provisioning) on the demands and tasks, which, in turn, depletes the available resources and ability to perform at the same level as in a situation without the additional demands. For example, individuals who are exposed to noisy environments have poorer performance on the same task as individuals who are in a quiet environment (Cohen, 1980).

Adaptive Cost Theory also explains why there is a decrease in interpersonal helping. For example, when individuals were exposed to stressors (e.g. unpredictable and uncontrollable stress), it was accompanied by a decrease in helping (i.e. helping someone who has lost a contact lens, Cohen and Spacapan, 1978; volunteering to participate in

another study, Sherrod and Downs, 1974). Cohen (1980, p. 95) argued that "exposure to unpredictable and uncontrollable stress is followed by a decreased sensitivity to others". In other words, the cost of adapting to the stressors left the individual with fewer available resources to attend to the other individual's needs or available effort to assist.

2.3.1 Provisioning hypothesis. We argue that Adaptive Cost Theory explains disengagement from knowledge sharing, such that it is not that the individual is seeking to protect and withhold his/her knowledge, but that the individual is simply unable to share the knowledge. In this regard, knowledge sharing is often seen as interpersonal helping, as it has been described as an interpersonal organizational citizenship behavior (Kelloway and Barling, 2000). Thus, when there are taxes on the individual's attentional capacities (efforts) from environmental or physical demands/stressors, there is a decrease in interpersonal helping. Similarly, the theory stipulates that when taxed, individuals go through a reprioritization and focus their efforts onto the tasks that are perceived as more relevant. Given that knowledge sharing is often seen as a citizenship behavior, which, by definition, is going "above and beyond the job performance"; this non-essential behavior would become lower in priority than other essential job tasks. Even when it is an in-role task, there can be other in-role tasks that rank higher in priority in the employee's opinion.

A key component of Adaptive Cost Theory is the presence of stressors/demands on the individual, to which the individual must adapt. In this study, we examine four possible stressors/demands on the individual:

1. perceptions of a lack of meaningfulness;
2. feelings of a lack of safety;
3. poor health and worries; and
4. job engagement.

2.3.2 Predictors to disengagement from knowledge sharing. Task demands have been well studied and have been shown to act as stressors for individuals (Fox *et al.*, 1993). To counter task demands, it has been theorized that by designing jobs in a specific way to include variety, autonomy and meaning, task demands become more predictable and controlled, thus less taxing on the individual (Karasek, 1979, 1990). Thus, meaningfulness, operationalized as job characteristics, should mitigate stressors and, as there would be fewer adaptations required, there would be fewer adaptive costs. This should minimize the risk of disengagement from knowledge sharing. In other words, the more meaningful a job is to an individual, the less disengaged from knowledge sharing he/she would be due to fewer adaptive demands.

We argue that safety, operationalized as perceived organizational support, is the antithesis to feeling used or expendable by the organization. While bureaucracy has been found to be a stressor that leads to performance costs (Glass and Singer, 1972), we argue that, like bureaucracy, the feeling of not being valued or feeling expendable by the organization would act as a similar environmental stressor, to which individuals would have to adapt and expend effort on protecting their best interests. Thus, the more individuals feels valued or cared for by the organization, the less they need to expend effort on protecting their best interests, demanding fewer adaptive costs. In other words, the safer one feels, the less effort one needs to expend on protecting oneself, and, subsequently, the safer an individual feels, the more effort and resources the individual has, thus less disengagement from knowledge sharing should be expected.

Adaptive Cost Theory notes that individuals have limited adaptability and effort. In accordance, if individuals are worried or are being taxed with other cognitive demands (i.e. "have a lot on my mind"), then there would be fewer available resources for noticing or responding to cues for interpersonal helping. Conversely, if an individual has few worries/psychological stressors, then that individual would be better able to attend to requests for knowledge sharing, and be less disengaged from knowledge sharing. However, if an

individual is taxed with worry, they would be more likely to exhibit disengagement from knowledge sharing.

Poor health requires attention for healing to occur. Poor health is associated with: worry, medical appointments and likely additional research for more information. Thus, while illness not only comes with limitations of diminished physical effort, it can also come with an attentional cost for the individual. When health is hindered, the individual will reprioritize their efforts to address the more relevant task of managing pain, illness or even the basic tasks that their job requires. This would then result in an increase in disengagement from knowledge sharing. Once healed or rested, the individual would then be able to re-focus on knowledge sharing. When the individual is feeling good, he/she does not have to expend attention to that domain and will be less disengaged from knowledge sharing. Thus, availability (e.g. health and cognitive resources) should only be a demand and require adaptation when it is depleted.

Job engagement is not explicitly discussed in the research of Adaptive Cost Theory; however, we contend that job engagement could serve as a demand on the individual. As noted earlier, job engagement tends to be task specific; thus, it is possible that an individual becomes engaged in one aspect of his/her job at the cost of another aspect. As individuals adapt to task demands, other extra-role tasks (i.e. knowledge sharing) become deprioritized. In other words, as individuals become more engaged in their job, they allocate more of their attention to specific job tasks. Due to this allocation of attention to in-role task performance, there would be a cost to knowledge sharing performance. Thus, based on Adaptive Cost Theory, we hypothesize that job engagement would come at the cost of knowledge sharing.

In summary, Adaptive Cost Theory argues that individuals adapt to their environment and environmental demands by allocating resources (e.g. attention, effort, capacity) to priority tasks/behaviors. Therefore, we argue that there are four possible demands on individuals which would deter them from knowledge sharing:

H4a. Meaningfulness is negatively related to disengagement from knowledge sharing.

H4b. Safety is negatively related to disengagement from knowledge sharing.

H4c. Availability is negatively related to disengagement from knowledge sharing.

H4b. Job engagement is positively related to disengagement from knowledge sharing.

Thus, we propose two competing models based on Engagement Theory and Adaptive Cost Theory (see Figure 1 for an illustration of the two competing models).

3. Methodology

3.1 Participants and procedure

To test the hypotheses, a questionnaire survey method was chosen. Participants were informed of the purpose of this study, and directed to an online questionnaire. Participants were randomly assigned to one of two versions of the questionnaire (order of questions were randomized to help prevent priming or order effects). Participation was anonymous and clear instructions were given that there were no "right or wrong" answers (Podsakoff *et al.*, 2003).

Respondents were employed adults in a range of industries. These participants were randomly recruited using Syracuse University's StudyResponse participant pool, which is a large participant pool that has been similarly used by other management and psychology researchers (Inness *et al.*, 2008; Piccolo and Colquitt, 2006; Ortiz de Guinea and Webster, 2011) (selection criteria: participants were required to be adults and currently employed). A total of 275 individuals were sent an invitation to participate, and 265 participants (96.4 per cent) fully completed this study. Participants were paid a small honorarium (US$5.00) to thank them for their participation in the study.

The sample consisted of 53 per cent females and 47 per cent males, whose age varied widely (20 per cent were between the ages of 21 and 30 years; 43 per cent were between 31 and 40 years; 22 per cent were between 41 and 50 years; 15 per cent were 51 years or older), and they were predominantly well educated (undergraduate degree, 36 per cent; graduate degree, 24 per cent). Less than half of the sample had been with their current company for 5 or fewer years (34 per cent), with most having been with their employer between 6-10 years (42 per cent), while some had been with their company for over 30 years (3 per cent). Many levels within the organizations were represented from front-line employees (6 per cent) to top administration (Presidents, VP, and Directors: 15 per cent). Knowledge sharing was considered an integral part of the participant's job for 86.2 per cent of the sample regardless of whether it was included in the job description (74.3 per cent of the sample had knowledge sharing explicitly included in their list of job duties).

Many industries were represented, with construction/mining (11 per cent), education services (9 per cent), insurance (9 per cent), manufacturing – non-durables (9 per cent) and wholesale/retail (8 per cent) being the most represented. There was 61 per cent of the sample from the private sector, 33 per cent from the public sector and 6 per cent were from non-profit, and organizational size varied from under 50 employees (17 per cent) to over 1,000 employees (27 per cent).

3.2 Study measures

The questionnaire consisted primarily of existing measures. Disengagement from knowledge sharing was measured using the four-item scale developed by Ford and Staples (2008). Job engagement was measured using items from Salanova *et al.*'s (2005) 17-item measure for in-role performances. For meaningfulness, we used items from Hackman and Oldham's scale for job characteristics, and for safety, we selected items from Rhoades *et al.*'s (2001) 8-item perceived organizational support measure. Only one measure was developed for the purpose of this study, availability, with the items capturing: cognitive resources (e.g. "During the past four weeks, I have been worried about things," reverse coded) and health (e.g. "During the past four weeks, I have had a minor health problem," reverse coded). Items were pulled from the themes from a qualitative pilot study. All measures were a seven-point Likert scale from "1 – Disagree Strongly" to "7 – Agree Strongly", with the exception of Disengagement from Knowledge Sharing, which was a seven-point frequency scale ("1 – Never" to "7 – Very Frequently (At least once a day)"). All questions had a "Not Applicable" option to avoid potential confounding. (See Appendix A for sample questions, Cronbach's alpha scores and scale anchors.) Finally, participants were asked basic demographic questions.

4. Results

The data analysis for this study proceeded as follows. First, we assessed the psychometric properties of each construct. Second, the relationships between the independent variables (job engagement, meaningfulness, safety, availability) and disengagement from knowledge sharing were examined through a series of structural equation models. Our research objective was to test hypotheses and compare two competing models (Figure 1). *H1-H4* were tested by examining the significance of the paths between the constructs. We further examined the relationship between independent variables and disengagement from knowledge sharing by using a nested-models approach (Anderson and Gerbing, 1988) and report the parameter values, chi-square, Bentler's comparative fit index (CFI), the Tucker Lewis Index (TLI or NNFI) and the standardized root mean square residual (SRMR) for the series of structural models.

4.1 Measurement model

We used separate common factor analyses to verify that measurement items for each construct loaded on one factor only, thus providing evidence of unidimensionality (Gerbing and Anderson, 1988). We removed items with poor loadings (< 0.50) from each scale's measurement battery and to reduce the number of distinct parameters to be estimated in the forthcoming structural models (Appendix A for a full listing of items). After purification, the measurement scales showed adequate reliability (all α's > 0.7) and unidimensionality (all λ's > 0.5 and on one factor only). CFI were conducted to estimate the fit of measurement models representing all combinations of models (i.e. 1 factor through to 5 factors) to determine discriminant validity. The five-factor model fit the data adequately (NNFI = 0.91, SRMR = 0.07) and provided a significantly better fit over the four-factor solution (χ^2 difference = 8.05 (1), $p < 0.05$) or any of the other solutions. To further assess discriminant validity, we created factor scores and confirmed that the square root of the average variance extracted of each variable exceeded the correlations between the others (Table I).

4.2 Structural models

To examine *H1-H4*, we estimated the two competing structural models, depicted in Figure 1, plus a combined model (Model 3) as follows. In Model 1, we estimate a model with safety, meaningfulness and availability as predictors of job engagement which, in turn, is a predictor of disengagement from knowledge sharing. This model, a full mediation model, is a representation of Engagement Theory and a test of the *spillover hypothesis*. In Model 2, we estimate a model with safety, meaningfulness, availability and job engagement as predictors of disengagement from knowledge sharing. This model, a direct effects model, is a representation of Adaptive Cost Theory and a test of the *provisioning hypothesis*. In Model 3, we combine both models examining safety, meaningfulness and availability as predictors of both job engagement and disengagement from knowledge sharing. This model, a partial mediation model, is an integration of both theories. We test this model because job engagement and disengagement from knowledge sharing share predictors (i.e. safety, meaningfulness and availability). Analyzing this integrated model would allow us to understand how these two theories act together in regards to disengagement of knowledge sharing. We estimated all three models using covariance-based structural equation modeling using the covariance matrix as input. We present the results of all three models in Table II.

4.3 Model 1 – engagement theory model

Model 1, a representation of Engagement Theory, was an adequate fit to the data (NNFI = 0.89, SRMR = 0.08). The predictors of job engagement (safety, meaningfulness and availability) were all positive and significant (all $\beta > 0$, $p < 0.04$), explained 64 per cent of the variance in job engagement, and were consistent with Engagement Theory (Kahn,

Table I Correlation matrix (N = 265)[a, b]

Variables		*I.C.*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
1	Age		N/A								
2	Sex		−0.02	N/A							
3	Education		−0.14	0.15	N/A						
4	Tenure		0.50	0.05	0.04	N/A					
5	Safety	0.91	0.01	0.07	0.17	0.11	0.82				
6	Meaningfulness	0.77	0.22	0.03	0.11	0.26	0.60	0.63			
7	Availability	0.86	0.15	−0.07	−0.19	0.02	0.00	−0.04	0.72		
8	Job engagement	0.94	0.03	0.12	0.16	0.10	0.68	0.64	0.09	0.87	
9	Disengagement from KS	0.90	−0.27	0.23	0.09	−0.05	0.22	0.12	−0.46	0.26	0.83

Notes: [a]Values on the diagonal are the square root of the average variance extracted; [b]I.C. = internal consistency

Table II Model results

Independent variables	Model 1 – engagement theory Job engagement Total effects	Model 1 – engagement theory Disengagement from KS Total effects	Model 2 – adaptive cost theory Disengagement from KS Total effects	Model 3 – combined model Job engagement Total effects	Model 3 – combined model Disengagement from KS Indirect effects	Model 3 – combined model Disengagement from KS Direct effects	Model 3 – combined model Disengagement from KS Total effects
Safety	0.32*	0.03*	0.13	0.33*	0.14*	0.11	0.26*
Meaning	0.52*	0.13*	−0.21*	0.52*	0.21*	−0.21	−0.00
Availability	0.10*	0.08*	−0.61*	0.11*	0.05*	−0.61*	−0.56*
Job engagement		0.26*	0.42*				0.42*
R^2	0.64	0.07	0.45	0.64			0.45
χ^2 (df)		739.79 (290)	648.94 (287)				648.94 (287)
NNFI (TLI)		0.89	0.91				0.91
CFI		0.90	0.92				0.92
SRMR		0.08	0.07				0.07
RMSEA		0.08	0.07				0.07

Note: *$p < 0.05$

1990). *H1a*, *H1b* and *H1c* are supported. Consistent with Model 1, job engagement was a significant and positive predictor of disengagement from knowledge sharing ($\beta = 0.26$, $p < 0.05$). This, however, was inconsistent with *H2* (Figure 2).

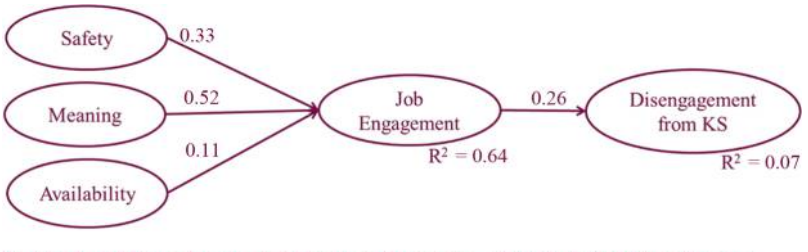
4.4 Model 2 – Adaptive Cost Theory

Model 2, a representation of Adaptive Cost Theory, fit the data well (NNFI = 0.91, SRMR = 0.07). The four predictors of safety, meaningfulness, availability and job engagement explained 45 per cent of the variance in disengagement from knowledge sharing. With the exception of safety, all predictors were significant predictors of disengagement from knowledge sharing, and the results were as hypothesized. Job meaningfulness ($\beta = -0.32$, $p < 0.05$) and availability ($\beta = -0.61$, $p < 0.05$), operationalized as job characteristics and health, respectively, were negatively related to disengagement from knowledge sharing (i.e. the more meaningful a job was to the respondent, the less they were disengaged from knowledge sharing). Thus, *H4a* and *H4c* were supported, while *H4b* was not supported. Job engagement was a positive predictor of disengagement from knowledge sharing ($\beta = 0.42$, $p < 0.05$) in support of *H4d* (Figure 3).

4.5 Model 3 – combined model

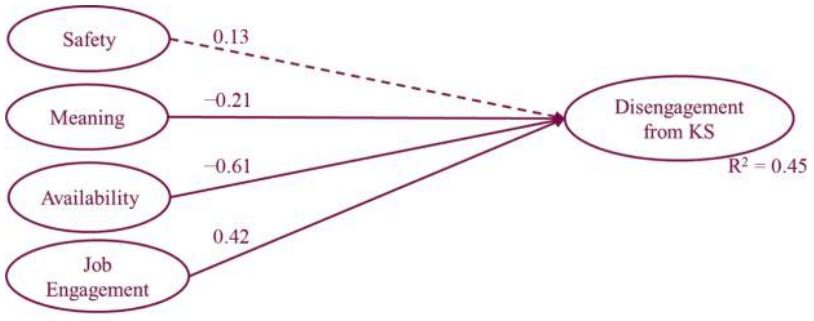
Model 3, an integrative model, was a good fit to the data (NNFI = 0.91, SRMR = 0.07). For this model, we estimated the direct and indirect effects of each of the independent

Figure 2 Model 1: engagement theory results



Notes: Solid lines denote significant pathways ($p < 0.05$); dotted lines denote non-significant pathways ($p \geq 0.05$)

Figure 3 Model 2: adaptive cost theory results



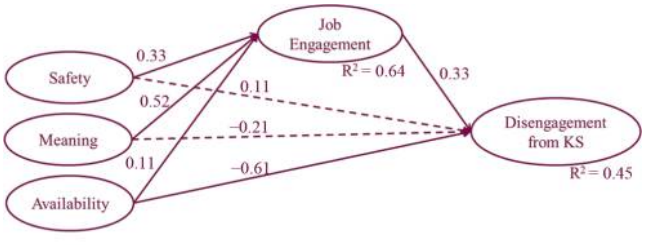
Notes: Solid lines denote significant pathways ($p < 0.05$); dotted lines denote non-significant pathways ($p \geq 0.05$)

variables using bootstrapping with 200 subsamples. Both safety and meaningfulness were significant and positive predictors of job engagement, with significant indirect effects on disengagement from knowledge sharing only. The effects of safety and meaningfulness on disengagement from knowledge sharing were fully mediated by job engagement. Availability was a significant and positive predictor of job engagement; however, the total and direct effects of availability on disengagement from knowledge sharing were significant and negative. Job engagement, consistent with Adaptive Cost Theory, was a significant and positive predictor of disengagement from knowledge sharing ($\beta = 0.42$, $p < 0.05$). Job engagement is a full mediator of the effect of safety and meaningfulness on disengagement from knowledge sharing, and a partial mediator of the effect of availability on disengagement from knowledge sharing. Therefore, *H3* is partially supported (Figure 4).

5. Discussion

This paper sought to address the question of why people do not share their knowledge with others at work; why do they become disengaged from knowledge sharing. First, it should be noted to what extent disengagement from knowledge sharing occurred within this sample. On average, participants reported being disengaged from knowledge sharing one to two times in the previous four weeks. Of all the participants, 74.6 per cent reported having been disengaged from knowledge sharing *at least once* in the past month, of which 7 per cent reported being disengaged from knowledge sharing *at least once a week*. In comparison to the other "lack of sharing" behaviors, like knowledge hoarding where the individual actively protects the knowledge and does not share it, this appears to be more frequent as other research has identified knowledge hiding (i.e. protecting requested

Figure 4 Model 3: combination model



Notes: Solid lines denote significant pathways ($p < 0.05$); dotted lines denote non-significant pathways ($p \geq 0.05$)

knowledge) and hoarding to be low-base rate behaviors (Connelly *et al.*, 2012; Zweig and Trougakos, 2008). Thus, it is relevant to examine the causes of disengagement from knowledge sharing as opposed to confounding this behavior with knowledge hoarding or hiding.

Further, it should be noted that the results replicated previous research on job engagement (Saks, 2006), such that job characteristics (proxy for meaningfulness), perceived organizational support (proxy for safety) and health (proxy for availability) were positively related to job engagement and accounted for 64 per cent of the variance of job engagement (*H1a-H1c* were supported). Thus, the more meaningful the job, the safer the individual felt due to perceived organizational support, and the healthier the individual was, the more job engagement was reported.

Returning to the research question, this study compared two hypotheses: the *spillover hypothesis* (based on Engagement Theory) and the *provisioning hypothesis* (based on Adaptive Cost Theory) to solve the dilemma of lack of knowledge sharing within organizations, with the supposition that this lack of sharing does not include intentional protecting of the knowledge.

The results suggest that the *provisioning hypothesis* (Adaptive Costs Theory) is the best explanation for disengagement from knowledge sharing, although integrating Engagement Theory helps us understand the tensions between job engagement and disengagement from knowledge sharing, *given the shared antecedent variables*. Remarkably, 45 per cent of the variance of disengagement from knowledge sharing was explained by applying Adaptive Cost Theory to this context (i.e. meaningfulness, availability and job engagement). All but safety were significant antecedents to disengagement from knowledge sharing (thus, *H4a*, *H4c* and *H4d* were supported).

There was more support for the *provisioning hypothesis* than the *spillover hypothesis* when job engagement was found to be positively related to disengagement from knowledge sharing, supporting *H4d* but not *H2*. Thus, job engagement can and should be viewed as a demand. It takes energy and focus from other activities, specifically, knowledge sharing. In other words, the more engaged an individual becomes in his/her job, the more he/she also becomes disengaged from knowledge sharing!

As noted by Kahn (1990, 1992), personal resources are required for an individual to become engaged in their job. The findings here suggest that as one's resources are depleted from being engaged in the job, there are fewer resources available for knowledge sharing. An interesting tension is that for the majority of participants (86.2 per cent), knowledge sharing was considered to be part of the job (74.3 per cent had knowledge sharing explicitly listed as a job task). Thus, it is clear that even within one's job tasks, when resources are limited, knowledge sharing receives lower priority than other job-related tasks. In other words, it appears as though job engagement pulls the resources towards job tasks, leaving knowledge sharing ignored or sidelined for "later".

While job engagement has been found to be associated with organizational citizenship behaviors (OCB; Rich *et al.*, 2010), which knowledge sharing can be considered a discretionary citizenship behavior (Kelloway and Barling, 2000), job engagement does not appear to promote this form of OCB. Job engagement may promote organizational citizenship behaviors that target the organization (OCBO, Williams and Anderson, 1991), which includes behaviors like conscientiousness, civic virtue (Organ, 1988), organizational loyalty (Graham, 1991) and individual initiative (Morrison and Phelps, 1999), more than organizational citizenship behaviors that target individuals (OCBI, Williams and Anderson, 1991), which includes behaviors like helping (e.g. interpersonal helping, courtesy, peacekeeping, helping coworkers; Fahr *et al.*, 1997; Podsakoff *et al.*, 1997). Future research should examine the relationship between job engagement and the separate dimensions of OCB. Similarly, the fit between knowledge sharing and organizational citizenship behaviors (OCBO versus OCBI) should be empirically tested.

As noted above, *H4a* and *H4c* were supported, such that meaningfulness and availability were negatively related to disengagement from knowledge sharing, which also supported the *provisioning hypothesis*. Meaningfulness appears to help mitigate demands that detract from knowledge sharing (Model 2). Future research should include task demands and examine if Karasek's (1979, 1990) moderation applies here too, or if meaningfulness engages knowledge sharing through other means. However, when integrated with Engagement Theory (Model 3), meaningfulness became fully mediated by job engagement, and the mitigating effects were lost. Thus, considering the big picture, meaningfulness does not help reduce disengagement from knowledge sharing; rather it helps promote job engagement, which promotes disengagement from knowledge sharing.

Availability (a.k.a. health and cognitive resources), when poor, represents a demand. Wellness appears to be a requirement for knowledge sharing as poor health and worries are associated with more disengagement from knowledge sharing. To date, health and wellness has not received much, if any, weight in the knowledge management literature, yet it was the strongest predictor for disengagement from knowledge sharing. As such, this study suggests that people need the physical and cognitive energy to be able to share their knowledge. This finding replicates the findings from the interview-based study by Ford (2008), wherein the health of the participant was a major factor explaining why he/she disengaged from knowledge sharing. This has strong implications for employee health and wellness programs, implications for workplace stress, and appropriate use of sick leaves to encourage knowledge sharing.

Wellness factors have been seriously overlooked within the knowledge management literature to date. This research illustrates clearly that employee physical health impacts not only job engagement but also disengagement from knowledge sharing. Related to this, future research should examine the impact of workplace stress on disengagement from knowledge sharing as well. Given the increase of workplace stress and illness (Danna and Griffin, 1999; Anonymous, 2003, 2006), this research behooves researchers and practitioners to examine how to improve employee health (and reduce disengagement from knowledge sharing) through stress management initiatives.

Safety (as operationalized as perceived organizational support) helps job engagement, but it does not appear to play a role in mitigating demands, as they relate to knowledge sharing and as *H4b* was not supported. A question that begs to be answered, though, is what would the effect be if there was no perceived or actual safety at all? Would this instance then become a demand on the employee and lead to disengagement from knowledge sharing? Another possible alternative is that the lack of safety (while being a demand) does not affect disengagement from knowledge sharing, but instead leads to knowledge hiding or hoarding (i.e. the active protection of the knowledge), as it could lead to a triage effect of putting protection as a high priority task. Interpersonal distrust of colleagues (which is another way to view safety or the lack thereof) has been found to predict knowledge hiding behaviors and partial knowledge sharing, both of which are characterized as being high in protection of knowledge (Connelly *et al.*, 2012). Future research should examine if safety relates to the protection behaviors of knowledge hiding.

5.1 Limitations

A discussion of the limitations associated with the study is pertinent. This research design was cross-sectional and used self-reports. Thus, causality cannot be claimed; however, there is a strong theoretical argument for the order of constructs. Regardless, this line of research would benefit from longitudinal or experimental research. Similarly, we caution that it would be very challenging to use observation to measure disengagement from knowledge sharing as others cannot accurately measure someone's intentions. Thus, this research question necessitated the use of self-reports to capture the pertinent behaviors.

Another approach which would be beneficial would be to use a diary approach. An interesting aspect of both Engagement Theory and Adaptive Cost Theory is that the notion

of disengagement or adaptive costs is deemed transient or short-term (Kahn, 1990; Sonnentag, 2003; Xanthopoulou *et al.*, 2009). We believe that disengagement from knowledge sharing is also a transient or short-term effect, with ebbs and flows over time. Similarly, an individual can ebb and flow among the knowledge transfer behaviors, such that in a single day, an individual could exhibit full knowledge sharing, partial knowledge hiding/sharing, knowledge hoarding and disengagement from knowledge sharing (Ford and Staples, 2008). We did not measure or examine the ebb and flow, which would require a diary approach across time; rather we captured an overview picture of a four-week time period. Future research could examine whether disengagement from knowledge sharing is a permanent behavior, or if it too ebbs and flows (and if individuals "recover" into full or partial knowledge sharing once resources become available again).

As with any single questionnaire study, there is a potential for common method bias. Procedural remedies used to minimize this bias were: counterbalancing question order, protecting respondent anonymity and reducing evaluation apprehension by informing participants that there was no right or wrong answers (Podsakoff *et al.*, 2003). In addition, Harman's single factor test was conducted to assess the extent to which common method bias may have accounted for the results. Each factor explained between 2.6 and 32.1 per cent of the variance, indicating no substantial common method bias (Podsakoff and Organ, 1986). The correlation matrix and VIF test show little evidence of mono-method bias. Thus, common method bias is not a likely significant threat to this study's validity.

5.2 Implications for practitioners

So why has hoarding been assumed to be so prevalent within the workforce? The results from this research suggest a number of possible reasons as to why it has been assumed that knowledge hoarding is a problem within the workplace. First, it is possible that practitioners and researchers are mislabeling disengagement as hoarding. Because 74.6 per cent of the participants had been disengaged at least once in the past four weeks, it is likely that, if mislabeled as hoarding, the vast majority hoards knowledge at one point or another.

A related reason why it has been assumed that hoarding is a problem within the workplace has to do with how people attribute the underlying causes and motives of other people versus themselves. The fundamental attribution error, where people tend to blame the individual rather than take into consideration contextual/external factors (Gilbert and Malone, 1995), could explain why the lack of sharing might be labeled as hoarding.

Aside from the problems of mislabeling or attribution errors, managers might be undermining knowledge sharing/knowledge management initiatives with other human resource practices, such as insufficient emphasis on employee health and wellness, job design (lack of meaningfulness), and encouraging job engagement as these variables were related to disengagement from knowledge sharing. It would be irresponsible for us to discourage job engagement, as it is very motivational and impacts individual and organizational performance (Bakker and Bal, 2010; Hackman *et al.*, 1978). However, it is important to recognize that organizations are faced with a paradox of issues, which have been overlooked with respect to knowledge sharing. While management wants their employees engaged in their jobs, they also want them sharing their knowledge. Thus, while there is a paradox, there is a remedy by focusing on the health and meaningfulness to counter the impact of job engagement.

In other words, the more practitioners want their employees engaged in their jobs and to be actively involved in knowledge sharing, then the importance of reducing workplace stress, improving the workplace conditions (environmental, physical, and psychological) for the health and wellness of the employees becomes critical. To the extent organizations ignore the health of their employees will not only reduce some job engagement, but will have even more detrimental effects for knowledge-sharing initiatives.

6. Conclusion

Currently, there is an assumption within the knowledge management literature, that when individuals do not share their knowledge, they are intentionally withholding and protecting it. However, this study illustrates that it is more likely that individuals are simply disengaging from the sharing process (i.e. not communicating their knowledge but also not protecting it). Furthermore, the results from the study presented indicate that Adaptive Cost Theory, infused with Engagement Theory, explains the lack of sharing within organizations and that disengagement from knowledge sharing is likely a common problem instead of the malevolent, opportunistic behavior of knowledge hoarding. The key predictors of disengagement from knowledge sharing are availability (i.e. health), job engagement (as a demand) and meaningfulness (which becomes fully mediated by job engagement).

References

Alavi, M. and Leidner, D.E. (2001), "Review: knowledge management and knowledge management systems: conceptual foundations and research issues", *MIS Quarterly*, Vol. 25 No. 1, pp. 107-136.

Anderson, J.C. and Gerbing, D.W. (1988), "Structural equation modeling in practice: a review and recommended two-step approach", *Psychological Bulletin*, Vol. 103, pp. 411-423.

Anonymous (2003), "HSC figures show sickness absence rates are on the rise", *Occupational Health*, Vol. 55, pp. 2-3.

Anonymous (2006), "Employers unaware of mental ill health rates", *Occupational Health*, Vol. 58, p. 4.

Bakker, A.B. and Bal, P.M. (2010), "Weekly work engagement and performance: a study among starting teachers", *Journal of Occupational and Organizational Psychology*, Vol. 83 No. 1, pp. 189-206.

Bigley, G.A. and Roberts, K.H. (2001), "The incident command system: high-reliability organizing for complex and volatile task environments", *Academy of Management Journal*, Vol. 44 No. 6, pp. 1281-1299.

Birkinshaw, J. and Sheehan, T. (2002), "Managing the knowledge life cycle", *MIT Sloan Management Review*, Vol. 44 No. 1, pp. 75-83.

Boman, E. and Hygge, S. (2000), "Aftereffects of noise predictability and task load on motivation", *INTER-NOISE and NOISE-CON Congress and Conference Proceedings*, *Institute of Noise Control Engineering*, pp. 914-919.

Christian, M.S. and Slaughter, J.E. (2007), "Work engagement: a meta-analytic review and directions for research in an emerging area", *Academy of Management Annual Meeting*, Philadelphia, PA.

Cohen, S. (1978), "Environmental load and allocation of attention", in Baum, A., Singer, J.E. and Valins, S. (Eds), *Advances in Environmental Psychology*, Lawrence Erlbaum Associate, Hillsdale, NJ.

Cohen, S. (1980), "Aftereffects of stress on human performance and social behavior: a review of research and theory", *Psychological Bulletin*, Vol. 88 No. 1, pp. 82-108.

Cohen, S. and Spacapan, S. (1978), "The aftereffects of stress: an attentional interpretation", *Environmental Psychology and Nonverbal Behavior*, Vol. 3 No. 1, pp. 41-57.

Colquitt, J.A. (2001), "On the dimensionality of organizational justice: a construct validation of a measure", *Journal of Applied Psychology*, Vol. 86 No. 3, pp. 386-400.

Connelly, C.E. and Arnold, K.A. (2011), "Transformational leadership and leader stress: a model of reciprocal effects", *Academy of Management Best Paper Proceedings*, San Antonio, TX, 12-15 August.

Connelly, C.E., Ford, D.P., Turel, O., Gallupe, B. and Zweig, D. (2013), "'I'm too busy (and competitive)!' antecedents of knowledge sharing under pressure", *Knowledge Management Research-and Practice*, Vol. 12, pp. 74-85.

Connelly, C.E., Zweig, D., Webster, J. and Trougakos, J. (2012), "Knowledge hiding in organizations", *Journal of Organizational Behavior*, Vol. 33 No. 1, pp. 64-88.

Danna, K. and Griffin, R.W. (1999), "Health and well-being in the workplace: a review and synthesis of the literature", *Journal of Management*, Vol. 25 No. 3, pp. 357-384.

Dollard, M.F. and Bakker, A.B. (2010), "Psychosocial safety climate as a precursor to conducive work environments, psychological health problems, and employee engagement", *Journal of Occupational and Organizational Psychology*, Vol. 83 No. 3, pp. 579-599.

Erickson, T.J. (2005), "Testimony submitted before the US senate committee on health, education, labour and pensions", 26 May.

Fahr, J.L., Earley, P.C. and Lin, S.C. (1997), "Impetus for action: a cultural analysis of justice and organizational citizenship behavior in Chinese society", *Administrative Science Quarterly*, Vol. 42 No. 3, pp. 421-444.

Ford, D.P. (2008), "Disengagement from knowledge sharing: the alternative explanation for why people are not sharing", Administrative Sciences Association of Canada Annual Conference, Halifax, NS, May.

Ford, D.P. and Staples, D.S. (2008), "What is knowledge sharing from the informer's perspective?", *International Journal of Knowledge Management*, Vol. 4 No. 4, pp. 1-20.

Fox, M.L., Dwyer, D.J. and Ganster, D.C. (1993), "Effects of stressful job demands and control on physiological and attitudinal outcomes in a hospital setting", *Academy of Management Journal*, Vol. 36 No. 2, pp. 289-318.

Gerbing, D.W. and Anderson, J.C. (1988), "An updated pardigm for scale development incorporating unidimensionality and its assessment", *Journal of Marketing Research*, Vol. 25 No. 2, pp. 186-192.

Gilbert, D.T. and Malone, P.S. (1995), "The correspondence bias", *Psychological Bulletin*, Vol. 117 No. 1, pp. 21-38.

Glass, D.C. and Singer, J.E. (1972), *Urban Stress: Experiments on Noise and Social Stressors*, Academic Press, New York, NY.

Graham, J.W. (1991), "An essay on organizational citizenship behavior", *Employee Responsibilities and Rights Journal*, Vol. 4 No. 4, pp. 249-270.

Hackman, J.R. and Oldham, G.R. (1980), *Work Redesign*, Addison-Wesley, Reading, MA.

Hackman, J.R., Pearce, J.L. and Wolfe, J.C. (1978), "Effects of changes in job characteristics on work attitudes and behaviors: a naturally occurring quasi-experiment", *Organizational Behavior and Human Performance*, Vol. 21 No. 3, pp. 289-304.

Inness, M., Leblanc, M.M. and Barling, J. (2008), "Psychosocial predictors of supervisor-, peer-, subordinate-, and service-provider-targeted aggression", *Journal of Applied Psychology*, Vol. 93 No. 6, pp. 1401-1411.

Kahn, W.A. (1990), "Psychological conditions of personal engagement and disengagement at work", *Academy of Management Journal*, Vol. 33 No. 4, pp. 692-724.

Kahn, W.A. (1992), "To be fully there: psychological presence at work", *Human Relations*, Vol. 45 No. 4, p. 321.

Karasek, R. (1979), "Job demands, job decision latitude, and mental strain: implications for job redesign", *Administrative Science Quarterly*, Vol. 24 No. 2, pp. 285-306.

Karasek, R. (1990), "Lower health risk with increased job control among white collar workers", *Journal of Organizational Behavior*, Vol. 11 No. 3, pp. 171-185.

Kelloway, K. and Barling, J. (2000), "Knowledge work as organizational behaviour", *International Journal of Management Reviews*, Vol. 2 No. 3, pp. 287-304.

Macey, W.H. and Schneider, B. (2008), "The meaning of employee engagement", *Industrial and Organizational Psychology*, Vol. 1 No. 1, pp. 3-30.

May, D.R., Gilson, R.L. and Hartner, L.M. (2004), "The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work", *Journal of Occupational and Organizational Psychology*, Vol. 77, pp. 11-37.

Morrison, E.W. and Phelps, C.C. (1999), "Taking charge at work: extrarole efforts to initiate workplace change", *Academy of Management Journal*, Vol. 42 No. 4, pp. 403-419.

Organ, D.W. (1988), *Organizational Citizenship Behavior: The Good Soldier Syndrome*, Lexington Books, Lexington, NA.

Ortiz de Guinea, A. and Webster, J. (2011), "Are we talking about the task or the computer? An examination of the associated domains of task-specific and computer self-efficacies", *Computers in Human Behavior*, Vol. 27 No. 2, pp. 978-987.

Piccolo, R.F. and Colquitt, J.A. (2006), "Transformational leadership and job behaviors: the mediating role of core job characteristics", *Academy of Management Journal*, Vol. 49 No. 9, pp. 327-340.

Podsakoff, P.M., Ahearne, M. and Mackenzie, S.B. (1997), "Organizational citizenship behavior and the quantity and quality of work group performance", *Journal of Applied Psychology*, Vol. 82 No. 2, pp. 262-270.

Podsakoff, P.M., Mackenzie, S.B., Lee, J.-Y. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.

Podsakoff, P.M. and Organ, D.W. (1986), "Self-reports in organizational research: problems and prospects", *Journal of Management*, Vol. 12, pp. 69-82.

Rhoades, L., Eisenberger, R. and Armeli, S. (2001), "Affective commitment to the organization: the contribution of perceived organizational support", *Journal of Applied Psychology*, Vol. 86 No. 5, pp. 825-836.

Rich, B.L., Lepine, J.A. and Crawford, E.R. (2010), "Job engagement: antecedents and effects of job performance", *Academy of Management Journal*, Vol. 53 No. 3, pp. 617-635.

Rothbard, N.P. (2001), "Enriching or depleting? The dynamics of engagement in work and family roles?", *Administrative Science Quarterly*, Vol. 46, pp. 655-684.

Saks, A.M. (2006), "Antecedents and consequences of employee engagement", *Journal of Managerial Psychology*, Vol. 21 No. 7, pp. 600-619.

Salanova, M., Agut, S. and Peiro, J.M. (2005), "Linking organizational resources and work engagement to employee performance and customer loyalty: the mediation of service climate", *Journal of Applied Psychology*, Vol. 90 No. 6, pp. 1217-1227.

Salanova, M. and Schaufeli, W.B. (2008), "A cross-national study of work engagement as a mediator between job resources and proactive behavior", *The International Journal of Human Resources Management*, Vol. 19, pp. 116-131.

Schaufeli, W.B., Salanova, M., Gonzalez-Roma, V. and Bakker, A.B. (2002), "The measurement of engagement and burnout: a two sample confirmatory factor analytic approach", *Journal of Happiness Studies*, Vol. 3 No. 1, pp. 71-92.

Seyle, H. (1956), *The Stress of Life*, McGraw-Hill, New York, NY.

Sherrod, D.R. and Downs, R. (1974), "Environmental determinants of altruism: the effects of stimulus overload and perceived control on helping", *Journal of Experimental Social Psychology*, Vol. 10, pp. 468-479.

Sonnentag, S. (2003), "Recovery, work engagement, and proactive behavior. A new look at the interface between non-work and work", *Journal of Applied Psychology*, Vol. 88, pp. 518-528.

Street, C. and Gallupe, R.B. (2003), "'Contextual crossings': a conceptual framework for knowledge brokering research in strategic alliances", *Knowledge Management Symposium*, University of Minnesota, Minneapolis, MN.

Swap, W., Leonard, D., Shields, M. and Abrams, L. (2001), "Using mentoring and storytelling to transfer knowledge in the workplace", *Journal of Management Information Systems*, Vol. 18 No. 1, pp. 95-114.

Szulanski, G. (2000), "The process of knowledge transfer: a diachronic analysis of stickiness", *Organizational Behavior and the Human Decision Processes*, Vol. 82 No. 1, pp. 9-27.

Van Maanen, J. and Schein, E.H. (1979), "Toward a theory of organizational socialization", in Staw, B.M. (Ed.), *Research in Organizational Behavior*, JAI Press, Greenwich, Vol. 1, pp. 209-264.

Webster, J., Brown, G., Zweig, D., Connelly, C.E., Brodt, S.E. and Sitkin, S.B. (2008), "Beyond knowledge sharing: withholding knowledge at work", in Matocchio, J.J. (Ed.), *Research in Personnel and Human Resources Management*, Elsevier, Oxford.

Williams, L.J. and Anderson, S.E. (1991), "Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors", *Journal of Management*, Vol. 17 No. 3, pp. 601-617.

Xanthopoulou, D., Bakker, A.B., Demerouti, E. and Schaufeli, W.B. (2009), "Work engagement and financial returns: a diary study on the role of job and personal resources", *Journal of Occupational and Organizational Psychology*, Vol. 82 No. 1, pp. 183-200.

Zweig, D. and Trougakos, J. (2008), "Dyadic knowledge transfer at work: exploring the role of emotions for requestors and request recipients", Symposium paper presented at the Academy of Management Annual Meeting, Anaheim, CA.

Appendix. Items of measures

Meaningfulness (select items from Job Characteristics: Hackman and Oldham, 1980): seven-point Likert with anchors reflective of the questions; $\alpha = 0.77$.

- How much variety is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?
- In general, how significant or important is your job? That is, are the results of your work likely to significantly affect the lives or well-being of other people?
- How much autonomy is there in your job? That is, to what extent does your job permit you to decide on your own how to go about doing the work?

Safety (select items from Perceived Organizational Support: Rhoades *et al.*, 2001): seven-point Likert to reflect agreement with statements (1 = Strongly Disagree; 4 = Neither Agree nor Disagree; 7 = Strongly Agree); $\alpha = 0.91$;

- Help is available from my organization when I have a problem.
- My organization really cares about my well-being.
- My organization is willing to help me if I need a special favor.

Availability (new): seven-point Likert to reflect agreement with statements (1 = Strongly Agree; 4 = Neither Agree nor Disagree; 7 = Strongly Disagree); $\alpha = 0.80$:

- During the past four weeks, I have had a minor health problem.
- During the past four weeks, I have been under a lot of stress.
- During the past four weeks, I have had a lot on my mind (either work related or not work related).
- During the past four weeks, I have been worried about things.
- During the past four weeks, my personal life has been challenging.
- During the past four weeks, I have been tired.

Job engagement (select items from Salanova *et al.*, 2005): 7-Point Likert to reflect agreement with statements (1 = Strongly Disagree; 4 = Neither Agree nor Disagree; 7 = Strongly Agree); $\alpha = 0.93$:

- At work, I feel full of energy.
- I am immersed in my work.
- In my job, I feel strong and vigorous.
- When I get up in the morning, I feel like going to work.
- I am enthusiastic about my job.
- My job inspires me.

Disengagement from KS (Ford and Staples, 2008): seven-point Likert to reflect general frequencies of behaviors (1 = "Never"; 2 = "Once"; 3 = "Rarely (a few times)"; 4 = "Occasionally (about 1/mo)"; 5 = "Sometimes (several times/mo)"; 6 = "Frequently (at least once/week)"; 7 = "Very frequently (at least once/day)"); $\alpha = 0.90$:

- I did not share any knowledge at the time it was needed by the participant, but I did not try to withhold it either.
- I was unable to share my knowledge at the time it was requested, not because it was confidential or should be withheld, but because I was simply unable to share.
- I don't care about sharing my expertise, and I don't care about protecting it either.
- I did not share any knowledge at the time it was needed by the participant, but I did not try to withhold it either.

About the authors

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3. Dr Lars Tummers ,Prof Stephen Teo ,Prof. Yvonne Brunetto Luu Trong Tuan School of Government, University of Economics (UEH), Ho Chi Minh City, Vietnam . 2016. How servant leadership nurtures knowledge sharing. *International Journal of Public Sector Management* **29**:1, 91-108. [Abstract] [Full Text] [PDF]