# The Role of Sense of Coherence in Knowledge Sharing

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**Abstract.** Knowledge sharing is a key competence in a work context. In this study we address knowledge sharing from an individual difference perspective, exploring whether an employee's sense of coherence influences knowledge sharing. Additionally, we investigate whether dedication to diversified learning mediates the relationship between Sense of Coherence (SOC) and knowledge sharing. A survey was conducted in a multinational organization. We received 403 responses. Partial least square structural equation modeling was used to analyze the data. The results show that SOC significantly influences the respondents' self-perceived knowledge sharing activities. However, the relationship is partially mediated by dedication to diversified learning. Results suggest that an employee's knowledge sharing partly arise from personal characteristics. How much is shared in actuality, however, depends on motivation and contextual factors.

**Keywords:** Sense of coherence · Information mastering · Information literacy
Knowledge sharing

## 1 Introduction

Workplaces are collaborative spaces where success depends on mutual collaboration between employees. Particularly, exchange of task-related information and personal know-how is critical not only for developing new products and services, but also for execution of daily tasks at work. This act of mutual collaboration is known as knowledge sharing. More specifically, it refers to exchange of advice and expertise to help others carry out daily tasks and solve problems [1]. A plethora of research has been done on knowledge sharing, and its importance for organizational as well as individual performance is well established [2–4]. Although an essential activity at the workplace, knowledge sharing is a very complex behavior. An extensive review on knowledge sharing literature by Wang and Noe [5] shows that knowledge sharing is not only influenced by organizational factors such as culture, management support, reward system, diversity and social networks but also by individual characteristics such as self-efficacy, personality, trust and an individual's beliefs about knowledge ownership.

Personal characteristics make individuals predisposed to certain work behaviors and attitudes. Therefore, organizational strategies aimed at enhancing knowledge sharing between employees need to take into account individual characteristics. Previous research has explored the relationship between individuals' personal


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characteristics and knowledge sharing behavior [e.g. 6, 7]. However, sense of coherence, a salutogenic disposition, has not attracted any attention so far, even though research in psychology has clearly established its influence in working life [8].

In our study we, therefore, wanted to investigate the connection between sense of coherence (SOC) and knowledge sharing.

## 2 Literature Review

SOC describes a resilience to stress, which explains why some people cope well with stressors in situations that others find overwhelming. People with a high SOC find that their environment makes sense, and trust that they have the needed resources to cope with challenging situations [9, 10]. This mindset is also manifested in a work environment [Antonovsky 11, cited from Feldt 12]. Those with a high SOC in general cope better with stress at the workplace and experience less stress symptoms [13, 14]. A strong SOC can moderate feelings of pressure and reactions to work conditions [14].

A person's SOC is also linked to perceptions of the social environment at work. Those with a high SOC generally perceive the organizational climate favorably and believe in their own influence [15, 16]. They feel that they get help from co-workers, can collaborate with them openly and constructively, and perceived the work environment as open with solidarity and free-flowing communication [16, 17]. Those with a low SOC, again, experience more psychological distress and often believe that they lack competence [16]. A study of work-related health resources based on focus-group interviews categorized responses according to the SOC components of comprehensibility, manageability and meaningfulness through deductive content analysis. Comprehensibility was related to reflections with fellow co-workers and participation in discussion with colleagues. Comprehensibility was also linked to open-mindedness such as open discussions, listening and sharing information. Manageability included informal discussions with colleagues which was contrived as important for a positive workplace experience, and responsibility in the form of bringing problems to the attention of others. Meaningfulness at work included the social climate at the workplace and reinforcement from others [18]. Although the study did not focus on knowledge sharing per se, it does highlight the important role of social relations and the sense of influence in work places. Arguably, in workplaces where this is fostered, and for people for whom this comes naturally as part of their SOC, information sharing is more frequent.

A person's SOC is continuously influenced by life experiences and can thereby be influenced by experiences at work [14]. Antonovsky [11 cited from 15] suggested that a sense of influence at work may increase people's general notion of meaningfulness in life. Moreover, he argues that agency at work, such as taking part in collective decision-making, increases the general sense of manageability in life, while the perception of the work environment and one's role within it as making sense increases general comprehensibility. The connection between influence at work and a general sense of meaningfulness in life has, however, not been verified empirically [15]. Despite studies arguing that the work environment influences SOC [15, 19], most studies argue for a relationship the other way around, pointing to studies referring to SOC as a stable concept [17, 20].

A key factor in SOC is the individual's ability to handle stress. Previous research has found that stress and time pressure are significant barriers to knowledge sharing. Time pressure could, in turn, stem from role conflict and role ambiguity. Unclear job expectations cause preoccupation leading in turn to lack of time and resulting in less knowledge sharing [21]. Emotional factors such as burnout have also been found to diminish knowledge sharing [22]. Zhang et al. [22] found that burnout symptoms are stronger predictors of knowledge sharing than personality traits which suggest that interventions aiming at reducing stress and enhancing the workplace climate are more effective in promoting knowledge sharing than focusing only on individual factors. It seems likely that it is not only objective time pressure that influences knowledge sharing behavior but also a person's individual way of experiencing and handling stress. Our aim was to investigate this connection by linking a person's sense of coherence to his/her self-reported knowledge sharing behavior.

## 3 Methodology

The data for this study was collected from a multinational organization that operates in the energy industry with operation in 70 countries around the world. The survey was distributed through the organization's intranet resulting in 403 responses.

We included three constructs in the study; knowledge sharing, sense of coherence and dedication to diversified learning. All these constructs were measured with multiple items on a seven point Likert scale. Knowledge sharing was measured using a 5-item scale adapted from Yang and Chen [23]. This instrument measures self-reported knowledge sharing, that is, how active in knowledge sharing activities a person experience him/herself to be. Sense of Coherence was measured using a standardized scale developed by Antonovsky [24]. As SOC is a general individual characteristic, manifested in multiple contexts, we also wanted to include a more specific measure of attitude towards work in our study. We, therefore, developed a scale for measuring motivation for workplace learning with a specific focus on openness and dedication to learning in a workplace context. The scale consisted of items that were part of a larger measure of meta-gaming [for conceptual background see [25]].

We named this scale *dedication to diversified learning*. Dedication to diversified learning consisted of four statements: *It is important to critically reflect on what is important for success in my work, and to be open to new approaches, I am learning a lot of things on my free time that are useful for success in my work, I am communicating with different types of people [e.g. with diverse positions, nationalities, characters, education, social class] in my work,* and *It is important for success in my work to be knowledgeable about the people who are not from my own department [e.g. customers, colleagues, competitors].*

### 3.1 Data Analysis

Partial least square structural equation modeling [PLS-SEM] was used to analyze the data and to explore both direct and indirect influence of SOC on knowledge sharing. Partial least square structural equation modeling is a second-generation statistical

technique that allows the measurement of reliability and validity of constructs and estimation of the relationship between them simultaneously [26]. Moreover, this technique is useful for theoretical development, small sample size and non-normally distributed data [27].

### 3.2 Results

In PLS modeling, the reflective measurement model is assessed before the structural model. Consequently, the measurement model is analyzed for reliability [i.e., the construct measures indicator reliability and internal consistency reliability] and validity [i.e., convergent validity and discriminant validity] [28].

### 3.3 Measurement Model

Table 1 provides the measurement statistics. According to our analysis, loadings of all reflective indicators is above the threshold value of 0.60 [29]. Moreover, Cronbach alpha and internal consistency values are also above the recommended value of 0.70 [ibid]. Both of these tests show that the measurement model meets the satisfactory reliability.

**Table 1.** Measurement statistics of construct scales based on reflective indicators

| Construct/indicators | Mean | Standard deviation | Indicator loadings | Composite reliability | Cronbach α | AVE |
|---|---|---|---|---|---|---|
| Knowledge sharing | 5.71 | 0.89 | | 0.85 | 0.79 | 0.54 |
| KS1 | | | 0.72 | | | |
| KS2 | | | 0.81 | | | |
| KS3 | | | 0.70 | | | |
| KS4 | | | 0.81 | | | |
| Sense of coherence | 5.08 | 0.83 | | 0.82 | 0.85 | 0.49 |
| SOC 1 | | | 0.67 | | | |
| SOC 2 | | | 0.71 | | | |
| SOC 3 | | | 0.72 | | | |
| SOC 4 | | | 0.79 | | | |
| SOC 5 | | | 0.72 | | | |
| SOC 6 | | | 0.63 | | | |
| SOC 7 | | | 0.66 | | | |
| SOC 8 | | | 0.70 | | | |
| Dedication to diversified learning | 5.60 | 0.93 | | 0.88 | 0.71 | 0.54 |
| DDL 1 | | | 0.72 | | | |
| DDL 2 | | | 0.83 | | | |
| DDL 3 | | | 0.68 | | | |
| DDL 4 | | | 0.67 | | | |

**Table 2.** Discriminant validity of the constructs - correlations between constructs

| | 1 | 2 | 3 |
|---|---|---|---|
| Knowledge sharing | **0.77** | | |
| Sense of coherence | 0.22 | **0.70** | |
| Dedication to diversified learning | 0.30 | 0.38 | **0.73** |

Bold numbers represent the square roots of the AVEs.

To assess the convergent validity, AVE value of each construct was calculated. As shown in Table 1, AVE value of each construct is above 0.50 [30]. The only exception is SOC that has a very close AVE value of 0.49, and therefore, should not be a matter of concern. Discriminant validity was assessed by using the Fornell and Larcker criterion [31]. According to this criterion, the average variance extracted of each construct should be higher than correlation with other constructs [32]. The results are shown in the Table 2 that confirms the discriminant validity of all constructs.

The measurement model assessment shows that all constructs are reliable and valid, and therefore, we now proceed to the structural model.

### 3.4 Structural Model

We conducted a step-by-step analysis of the structural model to test the effect of SOC on knowledge sharing, and mediation between them by dedication to diversified learning. First, we focused only on the relationship between SOC and knowledge sharing. Then, we introduced the mediator, dedication to diversified learning, to reassess the relationship between SOC and knowledge sharing. As suggested by Klarner et al. [28], we followed both general guidelines given, for example, by Preacher and Hayes [33] and PLS specific mediation suggestions given, for instance, by Hair et al. [34] and Helm et al. [35] for mediation analysis.

Figure 1 shows the results of step 1. As we can see the direct effect of sense of coherence on knowledge sharing in the absence of the mediator is statistically significant [$\beta = 0.23$]. It shows that SOC positively influences knowledge sharing behaviour. Whether dedication to diversified learning mediates between these two was examined in the second step. As shown in Fig. 2, after introducing the mediator, dedication to diversified learning, we find that SOC has a strong and significant effect on dedication to diversified learning, which in turn has a strong and significant relationship with knowledge sharing. The indirect effect of SOC [i.e. 0.09] via the mediator construct dedication to diversified learning is also significant [$p < 0.01$]. Although the relationship between SOC and knowledge sharing remains significant, the strength of

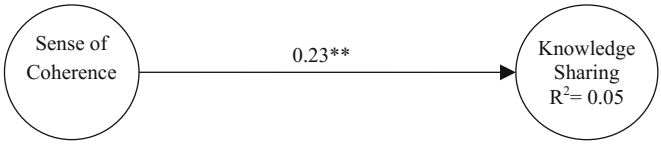


**Fig. 1.** Structural model without mediator Notes **p < 0.01, [two-sided test]

the relationship as well as the level of significance are lower than when dedication to diversified learning was not present. This means that dedication to diversified learning partially mediates the relationship between SOC and knowledge sharing. Overall, we can say that sense of coherence influences knowledge sharing directly and also indirectly through dedication to diversified learning.

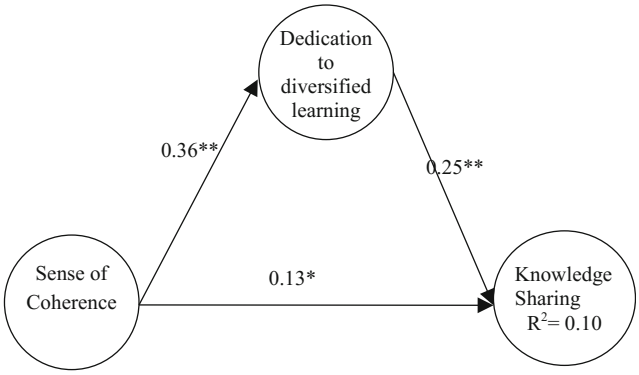


**Fig. 2.** Structural model with mediator Notes: * $p < 0.05$, ** $p < 0.01$, [two-sided test]

## 4 Discussion

Our results show that sense of coherence increases knowledge sharing, particularly if mediated by dedication and openness. This confirms that knowledge sharing is influenced by emotional aspects, as well as by cognitive and behavioral aspects [21, 22]. We thereby argue that knowledge sharing can be seen as part of information mastering in a work context.

*Information mastering,* as coined by Stefan Ek, is a broader concept of information literacy, which manifests in the use of information in managing daily life at work and leisure [36, 37]. Information mastering builds on the concept of sense of coherence. As Ek points out, Antonovsky [10] highlights the role of information in a person's SOC [36, 37]. The stronger your SOC is, the more connected you feel to your environment and the more equipped you are to interpret information you receive. A strong SOC also makes your communication with others flow, so that you not only understand the messages you get, but also feel heard [36, 37]. Here we can see a link to knowledge sharing, which was confirmed in our study.

The relation between dedication to diversified learning and knowledge sharing suggests that the more engaged, open and willing to learn the employee is, the more he/she shares information. Conscientiousness and openness to experience have previously been found to increase knowledge sharing [6, 38]. Sense of coherence creates a sense of being related to your environment, also in the workplace. The stronger you feel this relatedness and the more engaged and invested you are in your work, the more likely you are to share knowledge with your colleagues. This notion underlines the

importance of including emotional and attitudinal elements in our understanding of workplace information literacy, as well. This in turn speaks for the relevance of the concept of information mastering [36, 37], also in a work context.

Our study does come with limitations. We used a standardized measure for knowledge sharing as we collected data by a survey. We, however, recognize several challenges in measuring knowledge sharing by self-report. Arguably there is a high risk that respondents would over-estimate their willingness to share as social norms encourage knowledge sharing. Knowledge sharing in itself is also an abstract expression, which lends itself to various interpretations. Nevertheless, the relations we found could be related to previous empirical findings [6, 38] and theoretical concepts [11] and hence appear reliable.

Our results show that a personal characteristic, such as sense of coherence, influences willingness to share information in a work context. This relation is, however, particularly strong if combined with a dedication to work and openness to learning. This motivation, in turn, may be influenced by work tasks and organizational environment. This suggests that a person's knowledge sharing partly arises from personal characteristics, but the degree in which it will be expressed depends on motivation and contextual factors.

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