

# **Master Thesis**

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## **Work Design as Antecedent of Knowledge Sharing Behavior**

**Philip Schmidt**

mrphilipschmidt@gmail.com

Universiteit Twente: s1232037

Technische Universität Berlin: 335219

**Supervisors:**

Dr. Anna Bos-Nehles

Prof. Dr. Dodo zu Knyphausen-Aufseß

Universiteit Twente

Technische Universität Berlin

*Abstract*

This study examines work design as an antecedent for employees' Knowledge Sharing Behavior (KSB). As intraorganizational knowledge sharing has a positive impact on organizational performance and innovativeness (Wijk, Jansen & Lyles, 2008), managers must find ways to encourage voluntary knowledge sharing of employees. Work design as HR practice can encourage KSB (Cabrera & Cabrera, 2005). The dimensions task, knowledge and social characteristics are hypothesized to have a positive influence on KSB in this study. Organizational context is theorized to interact with work design as additional antecedent. 384 employed students of the Berlin School of Economics and 184 company data sets of partnering companies could be obtained. Using multiple regression analysis, a model of work characteristics as antecedent of KSB was built. It accounts for 24 % of observed variance. The results indicate that employees working in jobs with enriched task and knowledge characteristics show a larger KSB. In the complex field of numerous impacting elements on individual, team, organizational and contextual factors, the findings underline the importance of work design as antecedent of KSB. High job autonomy and task variety, next to others, must thus be ensured in the design of work. Further implications for theory and practice are discussed.

## 1. Introduction

Knowledge sharing between employees appears to be insufficiently promotable through directives. Because of their intangibility behaviors of knowledge sharing cannot be explicitly or directly rewarded (Desouza, 2003; Jarvenpaa & Staples, 2001). Therefore, HR managers face the challenge of encouraging voluntary knowledge sharing. As knowledge is agreeably seen as the most important resource of a firm (Osterloh & Frey, 2000; Connor & Prahalad, 1996; Kogut & Zander, 1996; Carillo & Gaimon, 2004; Grant, 1996) it must be utilized to create a sustainable competitive advantage. A shift from managing knowledge towards managing employees as the true owners of knowledge (Kelloway, 2000) shows the arising importance of HR practices in the context of knowledge sharing. Work practices, including work design, can influence employee's knowledge sharing behavior (KSB) (Cabrera & Cabrera, 2005).

According to Gurteen (1999: 3), the paradigm of "knowledge is power" has to be adapted by organizations towards "sharing knowledge is power". Rather than building knowledge stocks, organizations must promote the sharing of knowledge (Boh, 2007). A recent meta-analysis by Wijk, Jansen and Lyles (2008) encompassing 75 studies empirically supports the effect of knowledge sharing on an organization's performance and innovativeness. Their research shows that intraorganizational knowledge sharing has had a significantly larger effect on firm performance than interorganizational knowledge sharing. Stimulating the KSB of employees and in turn increasing intraorganizational knowledge sharing will thus prove to be beneficial for organizations. Wang and Noe (2010) present a thorough theoretical framework of aspects that stimulate KSB. This framework integrates environmental factors (organizational, interpersonal and cultural characteristics), individual characteristics and motivational factors. Amongst all identified factors the success of knowledge management initiatives strongly depends on the individual knowledge sharing (Yi, 2008; Wang & Noe, 2010). Effects of application of technology infrastructure, for example, have been limited if no support for knowledge sharing was given on other organizational and individual levels (De Long & Fahey, 2000). Even sophisticated electronic solutions to stimulate the dissemination of individuals' knowledge can only partially solve the problem (Cabrera, Collins & Salgado, 2006). A general shortcoming of knowledge management initiatives is the lack of contextual considerations, e.g. of interpersonal relationships or organizational circumstances (Carter & Scarbrough, 2001; Voelpel, Dous & Davenport, 2005). It is therefore necessary to further assess non-technological antecedents to knowledge sharing as it takes place at the employee level (Felin & Foss, 2006; Felin & Hesterly, 2007).

Finding HR strategies that enable the creation and appropriation of knowledge are a central challenge faced by firms (Thompson & Heron, 2002). Human resource practices – or a set thereof – influence the individual's behavior, knowledge and motivation (Huselid, 1995). Following the theory of reasoned action, propensity to engage in certain behaviors is explainable by the individuals' attitude

towards such behavior and the perception of social norms (Fishbein & Ajzen, 1975). Work design can influence the individual and shape one's perception of social norms. By overcoming social barriers and influencing individual perceptions of knowledge sharing, work design can influence the KSB of employees (Cabrera & Cabrera, 2005). This mechanism is also accounted for by Wang and Noe (2010), who depict motivational factors such as trust, beliefs of ownership of knowledge or social costs as influencing variables within the individual. A similar approach is used by Collins and Smith (2006), who use the term 'social climate'

Therefore this study will focus on how work design factors affect the knowledge sharing behavior of employees. More precisely this study will answer the question to what extent configurations of work design, moderated by organizational contexts, are especially favorable for employee's KSB.

Although the importance of the individual for knowledge sharing and the significance of work design to influence individuals behaviors and attitudes are well established, first studies that link KSB to work design (Cabrera et al., 2006; Foss, Minbaeva, Pedersen & Reinholt 2009; Kaše, Paauwe & Zuppan, 2009) use only a few dimensions of work design and a relatively small sample size. Additionally, a differentiated view on modes of KSB is not yet applied in current studies. It is necessary to include all aspects of work design into a comprehensive model to receive a holistic picture of work design as antecedent to KSB. Deepened insights in specific employees' KSB provide additional value for practitioners and researchers likewise.

Through this study, a clearer understanding of favorable work place designs will be built. By identifying which factors stimulate employees to engage in knowledge sharing, organizations ultimately increase the shared knowledge. HR managers will be able to effectively choose practices in work (re-)design to acknowledge the importance of knowledge and its transfer. Researchers profit from the insights in the research of work design related outcomes and the understanding of antecedents of KSB.

## 2. Literature Review

### *Knowledge*

Knowledge and information are, although sometimes used interchangeably, two different concepts (Wang & Noe, 2010). Knowledge is dynamic and may be changed through information passed in communication. Information therefore might add, restructure or change existing knowledge (Machlup, 1983). Bhatt (2001) and Davenport and Prusak (2000) further introduce the term data as being raw facts. They see information as an organized set of data and in knowledge the essence of meaningful information. Knowledge is the mind-made meaning of data and information (Marakas, 1999). As scholars have not agreed on a clear definition, I will use the definition given by Wang and Noe (2010:117) as it is based on an extensive review of the knowledge sharing literature. They see knowledge as “information processed by individuals including ideas, facts expertise and judgments relevant for individual, team and organizational performance.” The relevance of the individual for all organizational levels highlights the importance to share knowledge within the organization.

Knowledge can be divided into tacit and explicit knowledge. Tacit knowledge is specific and context bound. It can neither be expressed in words or sentences, nor in numbers or formulas. Its subjective and experience-based nature consists mostly of cognitive skills, such as beliefs, images, intuition and mental models as well as technical skills, such as craft and know-how (Nonaka, 1991; Smith, 2001). Explicit knowledge is context free and expressible in written form. It consists of objective and rational knowledge that can be expressed in words, sentences, numbers or formulas. It includes theoretical approaches, problem solving, manuals and databases (Nonaka, 1991). Knowledge in organizations is embedded in documents and repositories (*explicit*) or routines, processes, practices and norms (*tacit*) (Davenport & Prusak, 2000). Knowledge can be shared on individual, work group, organizational or interorganizational level (Ipe, 2003). Especially when sharing tacit knowledge, the individual is the key actor. However the transformation of tacit to explicit knowledge also requires action taking by the individual (Nonaka, 1991).

### *Knowledge Sharing Behavior*

By utilizing knowledge already present in the organization employees apply organizational knowledge (Cabrera & Cabrera, 2005; Davenport & Prusak, 1998). Yet, the sharing of knowledge is linked to the most beneficial organizational outcomes. Quintessential benefits of higher knowledge sharing activities are

- Knowledge application, innovation and competitive advantages (Berman, Down & Hill, 2002; Jackson, Chuang, Harden & Jiang, 2006).
- Firm innovation and performance (Arthur & Huntley, 2005; Collins & Smith, 2006; Lin, 2007)

- Lower production costs, faster product development (Lin, 2007; Hansen, 2002)
- Future competitiveness of the organization (Argote & Ingram, 2000)

Scientific literature has not yet agreed on a definition of knowledge sharing behavior (Yi, 2008), nor on a distinction between knowledge exchange, knowledge transfer and knowledge sharing (Wang & Noe, 2010). Argote and Ingram (2000:151) see knowledge transfer as “the process through which one unit [...] is affected by the experience of another”, which builds on the established source and recipient model (Ko, Kirsch & King, 2005). Ko et al. (2005) define knowledge transfer “as communication of knowledge from a source so that it is learned and applied by a recipient.” Yet, knowledge sharing is different to knowledge transfer and exchange as it excludes knowledge seeking (Wang & Noe, 2010). The willingness and action to share knowledge comes from the individual itself. Views of social exchange theory and social capital theory (Cabrera & Cabrera, 2005) are applicable and help to explain different rates of engagement if the sharing of knowledge is rewarded accordingly. Sharing personal experiences and knowledge, especially in a professional and organizational context, highly depends on the depth and width of the individuals network as well as shaped perceptions about KSB (Cabrera & Cabrera, 2005).

I align to the work of Yi (2009:68), who sees knowledge sharing behavior as “set of individual behaviors involving sharing one’s work-related knowledge and expertise with other members within one’s organization, which can contribute to the ultimate effectiveness of the organization”. This definition stems from an extensive review of current literature. Furthermore, an ambiguous picture of knowledge sharing unveils beyond definitional aspects. Out of the vast number of studies that go further than theoretic discussions, authors are focusing on the extent or frequency of knowledge sharing (Foss et al, 2009; Kaše et al., 2009; Cummings, 2004; Zboralski, 2009; Chiu, Hsu, Wang, 2006), propensity or willingness to share (Cyr & Choo, 2010; de Vries, van den Hoof, de Ridder, 2006; Teh, Chong, Yong & Yew, 2010; Bock, Zmud, Kim & Lee, 2005) or on motivation to share (Gagné, 2009). Yet, these approaches can only explain a certain portion of employees’ KSB, namely what and how much knowledge is shared. An aspect often neglected in recent studies is the question of how knowledge is actually shared (see Yang & Chen, 2007 or Lin, 2007 for an exception). For organizations seeking to stimulate KSB this is an important aspect, as organizational antecedents must be adapted to differing types of knowledge sharing activities.

To account for this, I will differentiate four modes of KSB (Yi, 2009; Bartol & Srivastava 2002), namely written contributions, organizational communications, personal interactions and communities of practice. Written contributions as possibility to create tacit knowledge repositories and organizational communications, personal interactions and communities of practice as modes of informal knowledge sharing must be made. Further, one can also distinguish between formal and informal interactions (Taminiau, Smit & de Lange, 2009). Organizational meetings (or organizational communications) are on the outmost formal side of the continuum, followed by written contributions

in the intranet or via electronic mail. As the most informal mode of knowledge sharing authors name “lunches, dinners, drinks” (Taminiau et al., 2009: 6) as forms of personal interaction.

Written contributions regard a person-to-document transfer, for example when data are entered into a company-wide database or if ideas in written form are stored accessible to the members of the organization (Yi, 2008). This mode of KSB is especially useful for sharing rather explicit knowledge. Written contributions are most often part of knowledge management initiatives, as outcomes are measurable and support through information technology can be granted. Examples from IBM (Stevens, 2000) and Xerox (Brown & Duguid, 2000) show the application of technological solutions to boost written knowledge sharing.

Formal exchange of ideas and experiences within a meeting context can be classified as organizational communications. Hereby, more tacit knowledge is shared in direct social contact to many people (Bartol & Srivastava, 2002). An exchange during team meetings or *jours fixes* is a knowledge exchange in a formal, person-to-group context.

Personal interactions are a highly individualized mode of KSB. Engaging in informal, person-to-person knowledge sharing requires a high level of social anchorage and personal affection. Again, more tacit knowledge is shared (Yi, 2008; Taminiau et al., 2009) as personal interactions might happen during lunch hours or across hallways. Topics discussed do not require a specific problem description or introduction; they might just as well be a form of work-related chatter. Yet, personal interactions are an essential part of KSB amongst employees, especially through their high frequency and boundlessness.

A phenomenon that has recently gained more attention in the field of knowledge management is the principle of ‘communities of practice’ (Zboralski, 2009). It is believed that people engage in informal groups that act outside of a specific work-context, but still have a commonly shared topic. The person-to-group sharing is similar to organizational communications. However, the informal setting and more intrinsic motivation to share require the clear distinction between organizational communications and communities of practice (Yi, 2008). Tacit knowledge, such as new trends in marketing, may be shared by a group of marketing experts from different divisions, who voluntarily meet outside of a work context. Whereas some scholars (f.e. Cabrera & Cabrera, 2002) see communities of practice as work design themselves; I follow the initial definition of a self-organized construct (Faraj & Wasko, 2001) and see them as subset of KSB.

A balanced utilization of behaviors for all described modes ensures a holistic knowledge sharing in all possible work contexts. Therefore, a combined measure of KSB has to be constituted out of these four modes to reflect a high level of an individuals’ engagement.

### *Work Design*

Attention to the design of work can yield to insights at the individual level (Morgeson & Campion, 2003). Work design includes both the job characteristics (job design) and the link between jobs and the broader environment (Parker & Wall, 1998). Job design as a fundamental HRM activity (Foss et al., 2009) focuses on the structure of work and its relevant tasks and activities. Job design is concerned with the allocation of such tasks to the individual. Due to the historic development of the work design field, 'classical' job design features are also called 'motivational job characteristics' as they had explained differences in work motivation at first. The observable motivational outcomes of an enriched job design (Lawler et al., 1973; Morgeson & Humphrey, 2006) has generated a high interest of researchers in this primary field of work design studies. Campion and McClelland (1993) further distinguish the motivational job characteristics into those associated with the knowledge and task requirements.

Research on the task characteristics of a job is to a large extent based on Hackman and Oldham's (1975, 1976) model and corresponding measurement tool, the Job Diagnostic Survey. The authors introduce *task variety*, *task identity*, *task significance*, *autonomy* and *feedback from job* as major scales through which a job can be described. While these scales were initially regarded to sufficiently describe work design, they reflect only a portion of current understanding of work design (Morgeson & Campion, 2003; Morgeson & Humphrey, 2006; Morgeson, Nahrgang & Humphrey, 2007). Feedback from the job – opposed to feedback from others – is only concerned with the clearness of information that comes from the work itself regarding the quality of performance. Autonomy – split in scheduling, decision-making and work method autonomy – reflects the level of freedom the employee is granted to perform in. A significant task influences people's life or work inside or outside of the firm. If the job description allows for a closed task (production of a product, delivery of a service) to be completed by one employee, the degree of task identity is high. Lastly, task variety describes the range of tasks that need to be performed by a single employee.

Knowledge, skills and abilities, which are requested by an individual to fulfill the work, are clustered as knowledge characteristics of a job. *Job complexity*, *information processing*, *problem solving*, *skill variety* and *specialization* as subparts of the knowledge characteristics appear in work design literature (Morgeson & Humphrey, 2006). The level of complexity and task demands a job exerts is reflected in the job complexity, whereas the amount of information needed to be processed in the job is mirrored by the information processing category. Problem solving accounts for the amount of unique ideas or diagnosis required in the daily work (Jackson, Wall, Martin & Davids, 1993). Skill variety shows the amount of different talents being used as a necessity in order to complete the work (Hackman & Oldham, 1980). Very specialized tasks demand an in-depth knowledge of the area in combination with fitting, i.e. specialized skills (Edwards, Scully & Brtek, 1999; Morgeson & Humphrey, 2006).



As job design only covers the specific context of one's own work, it is necessary to introduce a social component. By including social characteristics of the job, the broader environment of the work is accounted for. Since KSB is exerted in a social environment, corresponding work design practices cannot neglect the social affiliation of work. Interpersonal aspects have gained attention and need more consideration in the work design research (Morgeson & Campion, 2003). *Social support, interdependence (both received and initiated), interaction outside the organization and feedback from others* constitute the social characteristics of a job. Social support can shield negative work related experiences (Morgeson & Campion, 2003) and further describes friendship possibilities arising in the job (Sims, Szilagyi & Keller, 1976). If the completion of one's own task is dependent on earlier work by colleagues (received interdependence) or the work of colleagues depends on own efforts (initiated interdependence) a high level of job connectedness can be observed. The degree of communication with suppliers, customers and other persons outside the organization's boundaries is reflected in the amount of interactions outside of the organization. Opposing feedback from the job (see task characteristics), information about the performance can also come from coworkers or managers, constituting the feedback from others.

A third category voiced in recent work design literature (Morgeson & Campion, 2003; Morgeson & Humphrey, 2006; Parker, Wall & Cordery, 2001) includes contextual or physical characteristics. As basic evidence of the outcomes of the physical properties of work design is scarce and research on motivational and social characteristics is well advanced, only the latter two will be extensively regarded in this study about work design and KSB.

### *Organizational context*

The organizational context builds the stage for the KSB of employees (Ipe, 2008). As organizations of any kind are cultural entities (Cook & Yanow, 1993), their cultural influence on individuals is prevalent (McDermott & O'Dell, 2001). The underlying values, norms and practices existing within an organization are projected on the attitudes and actions associated with knowledge sharing behavior. As the KSB in this study is defined an organizational action that results in higher organizational effectiveness (Yi, 2009), the role of organizational context cannot be neglected. Concerning work design, Morgeson and Campion (2003) elaborate different structural and social influences augmenting employees' reception of work design. Job satisfaction was linked through job characteristics to the organizational structure (Rousseau, 1978), whereas a formalized and centralized organizational structure is negatively linked to perceptions of the job (Pierce & Dunham, 1978). Therefore similar mechanisms must be thought of when linking work design to knowledge sharing behavior. Context for knowledge sharing consists of a favorable and stimulating organizational culture, organizational structure and information technology (Kim & Lee, 2006). Culture is reflected in the values, norms, and

practices of an organization (De Long & Fahey, 2000). Organizational structure describes the coordination and division of labor and tasks in an organization (Child, 1977; Mintzberg, 1979). In knowledge sharing context, organizational structure must be regarded especially when looking at incentive and rewards systems on the one hand and political directives on the other (Yang & Chen, 2005). Lastly, information technology in this study is understood as electronic support that extends individual's reach beyond formalized forms of communication (Alavi & Leidner, 2001).

### **3. Hypotheses Building**

The influences of work design on knowledge sharing are currently evaluated in literature (Cabrera et al., 2006; Foss et al., 2009; Kaše et al., 2009). To my knowledge, only a partial examination has been done and featured differing research contexts. Therefore, and as illuminated in the literature review, I propose task characteristics, knowledge characteristics and social characteristics as essential parts of work design to be linked to the KSB of employees. Furthermore, a moderating organizational context is hypothesized as it may influence individuals' perceptions of KSB and work design. Illustration 1 at the end of this chapter summarizes the resulting theoretical model.

#### *Task Characteristics and KSB*

Autonomy as such is related to the felt responsibility in the job (Hackman & Oldham, 1976) and might lead employees to rely more on the idea-sharing and experiences in order to increase job performance. Additionally, the general level of freedom associated with high job autonomy (work scheduling, decision making and work methods) may entail employees' engagement in a regular knowledge exchange with their peers. The freedom of planning as well as work independence were amongst the most popular and most effective HR strategies for motivating knowledge sharing as found by Horwitz, Heng and Quazi (2003). Job autonomy was also significantly linked to KSB in the study by Cabrera and Cabrera (2005). Further motivational job characteristics are used in the study by Foss et al. (2009). Their research looked at autonomy, task identity and the respective influence on employee's knowledge sharing motivation, mediated by three types of motivation. Their sample of 186 employees showed a relation from job autonomy towards intrinsic motivation (.39,  $p < 0.01$ ), which in turn was strongly and positively (.57,  $p < 0.01$ ) related to the sending of knowledge. Although weaker, task identity could as well be linked to knowledge sending mediated by introjected motivation. Similarly, a high level of task variety enables individuals to gain knowledge that is important to each of the miscellaneous tasks (Graydon & Griffin 1996; Paas & Van Merriënboer 1994). As a high task variety also implies a higher frequency of unexpected challenges (Daft & Lengel, 1986), employees in such working conditions are required to communicate more. Therefore it seems feasible to engage people in different work activities, increasing the possibility and rewards of active knowledge sharing. Both the meaningfulness associated with high task significance and the higher level of interest related to a high

task identity (Hackman & Oldham, 1980) might attract knowledge seekers to consult those employees with interesting jobs, thus stimulating their KSB. Following the case examples of Earl (2001), experts in consulting firms should be visible to the organization and then approached by knowledge-seekers. The performance evaluation coming from a work design that offers a high degree of feedback from the job can also stimulate the KSB of employees as they gather more information to share. Moreover, as commitment to the organization is related to interesting work, an emotional attachment to the organization results in a higher degree of knowledge sharing (Hall, 2001; Van den Hooff & Van Weenen, 2004). In general, the more enriched the task characteristics of a certain job are, the more interesting the job appears to the employee himself and to colleagues, who again can stimulate the KSB. Therefore I propose:

*H1: Employees working in jobs that are characterized by a high level of task characteristics are more likely to show higher levels of KSB.*

#### *Knowledge characteristics and KSB*

The positive motivational outcomes of challenging work (job complexity) (Parker et al., 2001) might as well be transferable to the KSB of employees. Learning through the engagement in different tasks stimulates creativity and in-group exchange (Paulus & Yang, 2000). Perceived enjoyment of acting in a certain behavior is closely linked to intrinsic motivation (Teo, Lim & Lai, 1999; Deci & Ryan, 1987), which in turn is essential in particular for voluntary knowledge sharing (Hsu & Lin, 2008). Therefore, an enjoyable and enriched work place helps to motivate people to share knowledge. Organizational methods that enhance this role breadth self-efficacy, as for example challenging and knowledge intensive work, will lead to an increased use of knowledge in the workplace (Kelloway, 2000). The use of manifold and complex skills and competencies to complete a job requires a regular knowledge exchange with coworkers. The same holds true for information and problem solving demands posted by an enriched job. HR professionals mentioned challenging work as highly effective and very popular strategy to motivate KSB (Horwitz et al., 2003). Here as well, the increased complexity and mental demands might pose a stimulus for KSB. The aspect of job specialization leaves room for argumentation. On the one hand, an employee performing very specialized, at all extremes accomplishing unique tasks might be approached by knowledge seeking coworkers. On the other hand, the KSB of employees in very specialized areas of work could be very low since they have no person to share their knowledge with. All in all, the more augmented the knowledge characteristics of a certain job are, the more knowledge is available to be shared. This is in line with Haldin-Herrgard (2000) who states that before knowledge sharing can occur the possessor must first be aware of the knowledge he or she has. Thus, I hypothesize:

*H2: Employees working in jobs that are characterized by a high level of knowledge characteristics are more likely to show higher levels of KSB.*

### Social characteristics and KSB

Social exchange theory is often applied to explain the social mechanisms in knowledge sharing between individuals (Cabrera & Cabrera, 2005). In short, social exchange theory is based on the assumption that situations in which the actions of one person provide the rewards or punishments for the actions of another person and vice versa (Emerson, 1976). More specifically, social exchange theory sees rewards and the avoidance of punishments as basic motivating incentives for interaction between people – based on reciprocity. Essentially, trust and commitment govern the social exchange view on relations and result in mutual dependence (Griffith, Harvey & Lusch, 2006). Interactions create reliance between people depending on the depth of relation of that particular dyad. These interactions are understood as interdependent and contingent on the actions of the other person and vice versa (Blau, 1964).

Generally, social characteristics of a job give a hint to the interaction possibilities that a particular employee has. Through shared understanding and a degree of acquaintance based on a social link between two individuals, knowledge sharing is more likely to occur (Yang & Chen, 2007). Social support e.g. is linked to well-being in the job (Ryan & Deci, 2000) and shows the embeddedness in the social environment at the work place. Top management support is used as effective method to motivate knowledge workers, meaning employees in knowledge-intensive jobs (Horwitz et al., 2003). Following the social capital theory, Chiu et al. (2006) explore the quantity of knowledge sharing in a virtual community to be significantly (.21,  $p < 0.001$ ) related to the social interaction ties of community members. This is in line with earlier findings according to which a strong community feeling and a shared social identity augment the probability of active participation in virtual communities (Hars & Ou, 2002; Yoo, Suh, Lee, 2002; Dholakia, Bagozzi & Pearo, 2004). Other empirical support for the effect of social characteristics on knowledge sharing is given in a study on “coopetition” (Tsai, 2002) that examines knowledge sharing between rivaling groups, which nevertheless are socially connected. The application of social exchange theory led to the comprehension of trust as factor that received the highest attention by scholars (Wang & Noe, 2010), in the research of knowledge sharing antecedents. The emergence of trust between coworkers can only occur in regular interactions and interconnected work processes (Argote, Reagan & McEvily, 2003). It overcomes the negative association of the economic risk of knowledge sharing (Kankanhalli, Tan, Wei, 2005) and partially explains individual knowledge sharing (Chiu et al., 2006; Lin, 2007). The underlying social contract, being the center piece of social exchange and the resulting anticipation of reciprocal action influences the attitude towards knowledge sharing (Bock et al., 2005). Dense friendship networks, as result of enriched social job characteristics, might promote knowledge transfer and lead to higher organizational performance (Argote et al., 2003; Ingram & Roberts, 2000). The closeness and social anchorage associated with high social job characteristics seem beneficial for knowledge sharing activities, resulting in:

*H3: Employees working in jobs that are characterized by a high level of social characteristics are more likely to show higher levels of KSB.*

#### Organizational context and KSB

Knowledge management initiatives are deeply rooted in the organizational context. Organizational context for knowledge sharing consists of a favorable and stimulating organizational culture, organizational structure and information technology (Kim & Lee, 2006). The organizational culture influences how knowledge is perceived within the organization (De Long & Fahey, 2000). A culture that promotes sharing, cooperation and collaboration (Goh, 2002), but also learning and knowledge exchange (Janz & Prasarnphanich, 2003; Cummings & Teng, 2003) within the organization is favorable for knowledge sharing. Numerous other scholars agree that individuals' knowledge sharing is supplemented in an open and trusting organizational culture (Cabrera & Cabrera, 2005). Empirical evidence supports a direct effect of open culture on KSB (Yu, Lu & Liu, 2010), whereas Kim and Lee (2006) present findings that depict a significant link between perceived social networks and knowledge sharing, but none with organizational vision or organizational trust. Supporting the ambiguity prevalent in current research are further findings by Yang and Chen (2007), which could not uncover a significant influence of cultural capabilities on knowledge sharing. Chaudhuri (2009) and the review by Wang and Noe (2010) propose an indirect effect of organizational culture. Culture as social context for knowledge sharing activities (De Long & Fahey, 2000; Ipe, 2003) can moderate the effect of social job characteristics and KSB. I therefore propose a moderating effect of organizational culture as follows:

*H4a: Organizational culture will moderate the effect of task characteristics on KSB.*

*H4b: Organizational culture will moderate the effect of knowledge characteristics on KSB.*

*H4c: Organizational culture will moderate the effect of sharing characteristics on KSB.*

Organizational structure is found to be positively linked to KSB (Yang & Chen, 2007). When organizational structure is less centralized and performance-based reward systems are installed, knowledge-sharing activities are more frequent (Kim & Lee, 2006). Ipe (2003) sees organizational structure as basic framework for knowledge sharing. Political directives have been found to have a positive effect on employees' knowledge sharing motivation (Syed-Ikhsan & Rowland, 2004). The combination of soft and hard rewards for knowledge sharing as introduced by Hall (2001) reflects the importance of organizational measures, which give employees a feeling of appreciation. Structural knowledge characteristics consisting of organizational structures and reward systems are significantly linked to KSB (Yang & Chen, 2007). Based on the assumptions of organizational structure as basic framework for knowledge sharing, I will test for a moderating effect. Especially the contextual influences of organizational structure on all dimensions of work design (Morgeson & Campion, 2003; Parker et al., 2001) support the proposed indirect effects of organizational structures and KSB.

*H5a: Organizational structure will moderate the effect of task characteristics on KSB.*

*H5b: Organizational structure will moderate the effect of knowledge characteristics on KSB.*

*H5c: Organizational structure will moderate the effect of sharing characteristics on KSB.*

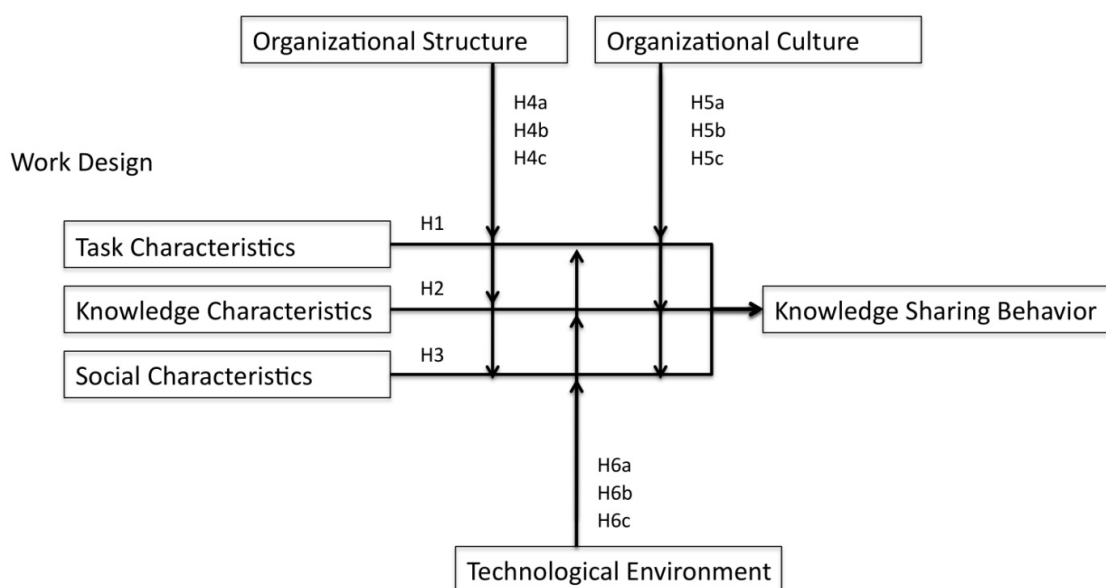
Information technology as critical enabler in knowledge management initiatives is the center of analysis of numerous studies (Kim & Lee, 2006). Through the use of modern electronic communication the individuals' reach is significantly increased, which, in turn facilitates knowledge sharing across boundaries (Alavi & Leidner, 2001; Lee & Suliman, 2001; Hendriks, 1999). Empirical support for the effect of IT infrastructure is given f.e. in Syed-Ikhsan and Rowland (2004) and Kim and Lee (2006). Yang and Chen (2007:104) see technical knowledge capabilities of an organization as "fundamental necessary skill, not a fundamental condition, in a knowledge organization." Besides other organizational contextual factors, the organizations knowledge capabilities did not significantly differ between firms with implemented knowledge management initiatives and those without. Yet, the mean score in their study showed a higher degree of technical capabilities in firms, supporting the assumption that IT is the fundament for other knowledge-sharing enablers. Therefore, I state:

*H6a: Technological environment will moderate the effect of task characteristics on KSB.*

*H6b: Technological environment will moderate the effect of knowledge characteristics on KSB.*

*H6c: Technological environment will moderate the effect of sharing characteristics on KSB.*

Figure 1 illustrates the hypotheses in a research model. To test the proposed hypotheses, a quantitative questionnaire was administered. Further details will be explained in the succeeding section, followed by a presentation of the statistical results and a discussion.



**Figure 1: Research Model**

## 4. Method

### Sample

For this study, students and partnering companies of the faculty of company-linked programs of the Berlin School of Economics and Law were approached. This non-probability sample is particularly favorable for the intended research. The study branches of the faculty include a wide variety of management disciplines ranging from business administration and respective specializations (i.e. banking, tourisms, logistics, facility management) to technical topics such as mechanical engineering, informatics or civil engineering. This variety of topics is also found within the associated companies, not only with regards to fields of industry but also in size.

Therefore, the limitations of the purposive sample are relatively small since a variety in the sample is existent, so that a high validity and representation could be ensured. The education model of the faculty is based on a regular change between theory (university classes) and practice (internships in employing companies). The students have set 3-year contracts with their companies. Companies are required to provide suitable internships to recently studied subjects. Both employees (students) and employers (companies) are also obliged to engage in a project transferring university knowledge into a practical context. Although employees are the main actor in this project both employee and employer need to be willing to engage in the knowledge transfer. To assess organizational context, HR managers or CEOs responsible for the practical education of students in the companies were contacted.

Out of the 923 contacted employees 384 valid responses

could be obtained. Hence the response rate amounts to 41,6 %. Table 1 summarizes the demographics of the participants with reference to gender, age and tenure. The young age and little tenure are explainable by the nature of the sample of young professionals and students. The distribution of gender shows a small tendency towards female respondents.

Further, 188 valid responses of HR managers could be retrieved. The response rate is 49,1 % with 383 contacts initially targeted. Employee numbers, industry branches and functions of the managers are listed in table 2. A comparison of answers about employee numbers and branches of questionnaires collected from managers and employees can also be taken from table 2. Differences occur in the

**Table 1**

*Demographics of employees*

	N	Percentage
Gender		
Male	169	44,0
Female	214	55,7
Missing	1	0,3
Age		
22 or younger	162	42,2
23	100	26,0
24	40	10,4
25	33	8,6
26 or older	49	12,8
Tenure		
1 year or less	196	51,0
1 – 2 years	56	14,6
2 – 3 years	97	25,3
3 – 4 years	13	3,4
4 years or more	20	5,2
Missing	2	0,5
Overall	384	100

**Table 2***Demographics of companies*

	N	Percentage	N	Percentage
Position		36		
CEO	36	19,1		
Head of Department	59	26,6		
Head of HR	25	13,3		
Head of Training	105	55,9		
			Managers	Employees
Number of employees				
up to 10	19	10,1	14	3,7
up to 50	29	15,4	22	5,8
up to 500	41	21,8	55	14,6
up to 1000	6	3,2	32	8,5
more than 1000	84	44,7	254	66,1
missing	9	9	7	1,8
Industry				
Mining	1	0,5	3	0,8
Manufacturing	24	12,8	31	8,1
Energy and Watersupply	12	6,4	17	4,4
Construction	14	7,4	13	3,4
Wholesale and Retail Trade	13	6,9	19	4,9
Accommodation	15	8,0	2	0,5
Transportation & Warehousing	19	10,1	27	7,0
Finance and Insurance	16	8,5	120	31,3
Real Estate Renting & Leasing	23	12,2	17	4,4
Public Administration	2	1,1	1	0,3
Education Services	7	3,7	1	0,3
Health Care & Social Work	4	2,1	36	9,4
Other Services	28	14,9	75	19,5
Missing	10	5,3	22	5,7
Overall	188	100	384	100

distribution of firms' industries: 31,3 % of employees stated that their company is active in finance and insurance, however only 8,5 % of the collected questionnaires from HR managers fall in this category. Distributions of firm sizes are similar between responses of managers and employees. Especially large firms with more than 1000 employees are included in the data set.



## **Measures Independent Variables**

### *Work Design*

Employees were asked to assess the work design in their current position. The German translation of Morgeson and Humphrey's (2006) work design questionnaire by Stegmann et al. (2010) was used. Task, knowledge and social characteristics were rated on a 5-point Likert scale ranging from 'strongly disagree' to 'strongly agree'. Overall, 63 questionnaire items were used to measure work design, as each construct is measured with 3-5 questions. English sample questions include: 'The job allows me to plan my work' and 'The job involves a great deal of task variety' for task characteristics; 'The job requires me to analyze a lot of information', 'The job requires the use of a number of skills' for knowledge characteristics; 'I have the chance in my job to get to know other people' and 'Other jobs depend directly on my job' for social characteristics.

### *Organizational Structure, Organizational Culture, Technological Environment*

Questionnaire items for organizational structure, organizational culture and technological environment have been taken from the work of Yang and Chen (2007). HR professionals rate the factors with four items in each category. Questions have been translated into German using forward/backward translation. In contrast to the proposed 7-point Likert scale, my study used the previously explained 5-point Likert scale for reasons of simplicity and ease of use. Sample items of the English version include: 'Our organization facilitates knowledge exchange across functional boundaries' for organizational structure, 'Organizational employees understand the importance of knowledge' for organizational culture and 'Organizational employees use technology to cooperate with a fellow employee' for technological environment.

## **Measures Dependent Variables**

### *Knowledge Sharing Behavior*

To assess KSB, Yi's (2009) validated self-assessment scale was used. Forward/backward translation procedure was followed to generate German questionnaire items. Differences in the translation were first discussed between the 4 translators and then confirmed by two bilingual HRM researchers. A five-point frequency response (never, rarely, sometimes, often, always) was used. Sample items from the 28 used questions include: 'I publish papers in company journals, magazines or newsletters', 'I make presentations in organizational meetings', 'I keep others updated with important organizational information through personal conversation' and 'I meet with community of practice members to share success and failure stories on specific topics with common interest'.

### Measures Control Variables

Control variables are measured at the employee level (tenure, age, sex) and at the organizational level (employee numbers, industry). Industry classification follows the North American Industry Classification System, all other questions, aside from gender, are classified in 5 options. Tenure is only measured in the range of “less than 1 year” to “4 or more years” as employees are still in their primary training in association with the faculty of company linked programs.

### Procedure

The distribution of questionnaires differed between HR Managers and students. In all cases, a strong association with the faculty itself was given through design, signatures and layout. This increased the attractiveness for all partners as the results of the research will also have advantages for their study (employees) or the education of students and use of their knowledge (companies). The questionnaire was electronically provided to a testing sample of 5 people and 1 HRM researcher, whose valued input was used for a further refinement of the questionnaire and clarification of instructions. The sampling was conducted in spring 2012. Employees were asked to participate in the electronic survey during their lectures at the university. This ensured the high response rate and an equally distributed share of different study branches. HR managers received an invitation to the survey through e-mail; a reminder and personal communication via telephone completed the sampling procedure.

## 5. Results

As I used three standardized questionnaires for this study, factor structure must be assessed in the first step. Literature indicates values smaller than 3 for  $\chi^2/df$  as being sufficient (Hair, Black, Babin, & Anderson, 2010), RMSEA values between 0.05 -0.10 as being acceptable (Hair et al., 2010), and CFI values of 0.95 as great (Hair et al., 2010). Other scholars name 0.9 or even 0.8 as still acceptable values for CFI (Morgeson & Humphrey, 2006, Yi, 2008; Hair et al., 2010). All indices show acceptable and good model fit indicating that the underlying 17-factor structure for work design, the 4-factor structure for KSB and the 3-factor structure for organizational context, as implied by the respective questionnaires are reproduced in this study.

**Table 3**

*Model fit indices*

	$\chi^2$	df	$\chi^2/df$	RMSEA	CFI
Work Design (Morgeson & Humphrey, 2006)	3697	21618	1.92	0.04	0.91
Knowledge Sharing Behavior (Yi, 2008)	770	344	2.23	0.07	0.87
Organizational Context (Yang & Chen, 2007)	84	51	1.66	0.06	0.94

As stated in the hypotheses, work design and knowledge sharing behavior will be used as grouped variables. Construct validity is assessed using Cronbach's  $\alpha$ . Table 3 shows the means, standard deviations, Cronbach's  $\alpha$ s and correlations.

Values for Cronbach's  $\alpha$  range from .74 to .93 for all multiple-item measures after deleting the organizational culture scale. By deleting item OC\_4, scale reliability could be increased to .54 which is still not within the acceptable range of  $>0.7$ . It appears as if the German translation of the questionnaire was not able to reliably assess the dimension *organizational culture*.

**Table 4**  
*Means, Standard Deviations, Scale Reliability and Correlations*

	1	2	3	4	5	6	7	8	9	10	11	12
1 Industry	-											
2 Employees	-.11*	-										
3 Tenure	-.10	-.25**	-									
4 Age	-.13*	-.23**	.25**	-								
5 Sex	-.07	.06	-.09	.06	-							
6 Task	.08	.08	-.02	.00	.11*	-						
7 Knowledge	-.01	.03	.06	.13**	.17**	.60**	-					
8 Social	.02	.14**	-.18**	-.07	.09	.41**	.35**	-				
9 Technological Environment	-.02	.23**	-.16	.00	.01	.22**	.28**	.31**	-			
10 Organizational Structure	-.51**	-.05	-.17*	.14	.03	.08	.09	.05	.22**	-		
11 Organizational Culture	.06	.18*	.17*	-.14	-.08	.03	.09	.08	.69**	.07	-	
12 KSB	.08	.19**	-.04	.01	.10**	.44**	.39**	.27**	.17*	-.11	.12	-
Mean						3.53	3.46	3.21	2.77	2.64	2.34	2.53
Std. Deviation						0.57	0.60	0.55	0.98	0.83	0.96	0.64
Cronbachs $\alpha$						.90	.91	.83	.74	.76	.28	.93

Analyzing the demographic data, employee numbers and sex show significant ( $p < .01$ ) correlations with KSB. The significant and positive correlation between employee numbers and technological environments indicates that larger companies provide better technical possibilities for knowledge sharing. All three categories of work design are significantly ( $p < .01$ ) and positively correlated with KSB. Within the independent variables, work characteristics show strong correlations with *technological environment* but none with *organizational structure*.

To assess the direct effect of work design on KSB, I calculated a multiple regression in two steps. Model 1, which includes only the control variables shows a significant  $R^2 = .06$  and  $\Delta R^2 = .06$  ( $p < .01$ ). Significant improvement to the model is observable when the *task characteristics*, *knowledge characteristics* and *social characteristics* are entered into the equation ( $R^2 = .24$ ,  $\Delta R^2 = .18$  ( $p < .01$ )). The value for Durbin-Watson statistics is 1.89. Hence, there is almost no correlation of residuals with a value of 2.00 indicating completely independent errors. Assumptions of non-linearity and non-homoscedasticity are met and normality of residuals is given. Multicollinearity is within acceptable ranges as no VIF value is larger than 1.7, with 10 being the general threshold. Standardized  $\beta$  indicate a significant effect of the *number of employees* on KSB. Significant values of *sex* and *industry* diminish in model 2. *Task characteristics* significantly predicts KSB ( $\beta = .30$ ,  $p < .01$ ), so that

Hypotheses 1 can be confirmed. The same holds true for the effect of *knowledge characteristics* on KSB ( $\beta = .15$ ,  $p < .05$ ) confirming Hypotheses 2. However, no significant effect for *social characteristics* can be shown leading to the rejection of Hypotheses 3.

**Table 5**  
*Regression Analysis*

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Industry	.11*	.09	.21*	.19*	.14	.13
Number of employees	.21**	.17**	.18*	.14	.14	.14
Tenure	.02	.16	-.03	.03	.02	.03
Age	.07	.04	.09	.06	.06	.07
Sex	.11*	.05	-.10	-.12	-.12	-.12
Task Characteristics		.30**		.18	.19	.98
Knowledge Characteristics		.15*		.25*	.26*	-.35
Social Characteristics		.06		.09	.09	.06
Technological Environment					.07	-.08
Organizational Structure					-.10	.43
TE*Task						.20
TE*Knowledge						-.03
TE*Spatial						-.08
OS*Task						-2.04*
OS*Knowledge						1.33
OS*Spatial						.13
R <sup>2</sup>	.06**	.24**	.08	.29**	.29**	.32**
Adjusted R <sup>2</sup>	.05**	.22**	.05	.24**	.23**	.23**
$\Delta R^2$	.06**	.18**	.08	.21**	.01	.03
N	349	349	132	132	132	132

A second series of analysis was conducted to test for the hypothesized interaction effects. N for the second series of analysis is 132 as listwise deletion of cases was used. 132 employees' questionnaires could be matched with the corresponding company data. Again, assumptions of non-linearity and non-homoscedasticity are met and normality of residuals is given. Models 3 to 5 show acceptable VIFs (range from 1.10 to 2.5), while large correlations of interaction effects with the single variables result in high multicollinearity in Model 6. Analog to Model 2, *knowledge characteristics* remain significantly related to KSB ( $\beta = .15$ ,  $p < .05$ ) in Model 4 ( $R^2 = .29$ ,  $p < .01$ ). The variables *technological environment* and *organizational structure* are entered in Model 5 resulting in  $R^2 = .29$  ( $p < .01$ ) with no significant improvement in predictive power over Model 4. Model 6, including the interaction terms, is also a significant predictor of KSB with no improvement over Model 5 ( $R^2 = .32$ ,  $p < .01$ ). No significant effect for any of the work characteristics can be reported ( $\beta = .94$  with  $p = .051$  for *task characteristics*). Only the interaction effect of *organizational structure* and *task characteristics* shows a significant effect, yet surprisingly a strong negative one opposing the initial hypotheses ( $\beta = -2.04$ ,  $p < .05$ ). Therefore Hypotheses 4, 5 and 6 must be declined.

## 6. Discussion

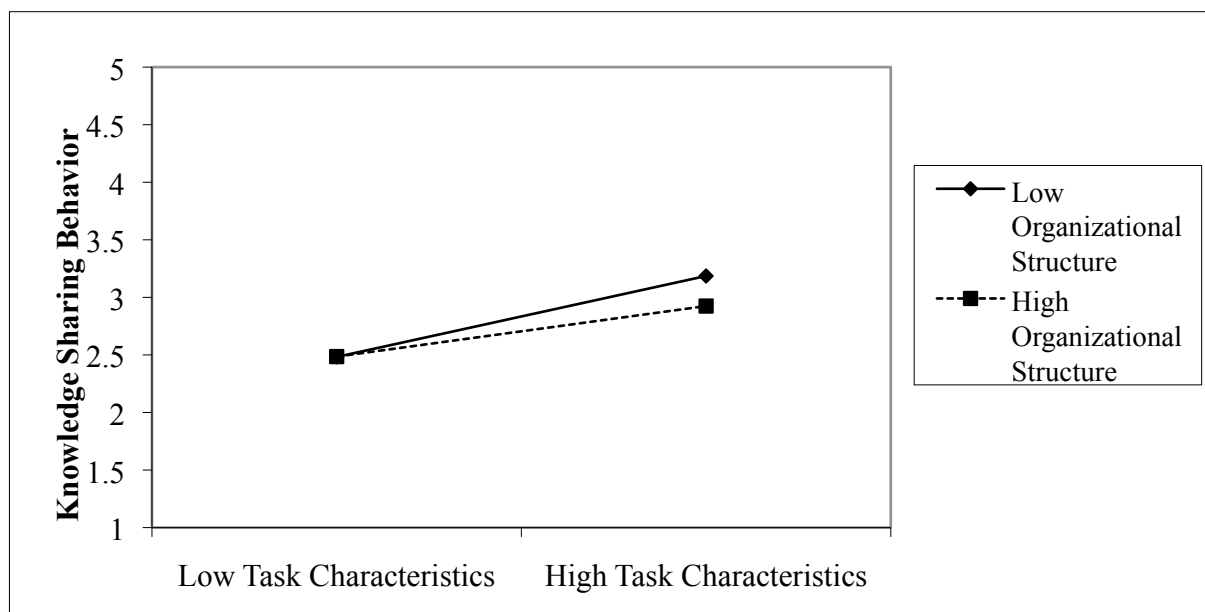
This study focused on how work design factors affect the knowledge sharing behavior of employees. The three categories of work design, namely task, knowledge and social characteristics have been hypothesized to explain variance in employees' KSB. Moreover, the interaction effects with organizational context have been tested. Following the criticism of Wang and Noe (2010) that measurements for employees' knowledge sharing in current research are based on intentions or planned actions, this study identified a quantity of actual knowledge sharing in different modes. In combination with three of the work design characteristics by Morgeson and Humphrey (2006), the effects of work design on KSB were assessed.

The results indicate that employees working in jobs with enriched task characteristics show a larger KSB. This goes in line with previous research (Horwitz et al., 2003, Cabrera & Cabrera, 2005; Foss et al., 2009; Hall, 2001; Van den Hooff & Van Weenen, 2004). It appears as if a high level of autonomy allows employees to share their knowledge with others, while knowledge acquired by rewarding jobs, closed tasks and a variety of assignments enables employees to participate in discussions and make significant contributions at their work place.

Also, enriched knowledge characteristics explain, as hypothesized, variance in KSB. Both role breadth self-efficacy (Parker, 1998; Kelloway; 2000; Cabrera et al.; 2006) and a self-awareness of possessed knowledge (Haldin-Herrgard, 2000) are antecedents of KSB, which can be linked to the level of knowledge characteristics at the job. As a result, employees must be given the opportunity to gather important knowledge before it can be shared. Enriched knowledge characteristics favor the knowledge building, e.g. by specialization, a large quantity of information or complex tasks. This knowledge can then be shared with others. Further, the obtained knowledge might reside exclusively in one employee making him attractive for knowledge seeking employees.

No significant relationship of social characteristics to KSB could be found. Opposing the initial hypotheses and former findings, there are some possible explanations for this observation. The findings contradict the proposed list of work design measures by Cabrera and Cabrera (2005), since they propose team work and interdependencies as main driver for fostering KSB. As Cyr and Choo (2010) state, knowledge sharing depends on the individuals' perception about costs and benefits. They found that knowledge sharing mostly takes place with the superior and not with colleagues. This opposes the understanding of voluntary knowledge sharing, as it is enforced through the seniority and ranking between employees. Kim and Lee (2006) identified only social network and not trust as significant antecedent in a multivariate analysis. The nature of the sample with mostly young professionals working in internships limited in time might permit the emergence of close social bonds. This could explain absence of an observable effect and depicts a need for further research.

The observed strong negative effect of the interaction between organizational context and task characteristics leaves room for interpretation, as this relation is not described in existing literature.



**Illustration 2: Interaction Graph**

Recalling the questionnaire items for both included variables, an organizational structure for a favorable knowledge environment facilitates the creation, discovery and sharing of knowledge across boundaries and features a reward system for knowledge sharing (Yang & Chen, 2007). Yang and Chen (2007) use the terminology ‘structural knowledge capabilities’, which makes an interpretation of high and low values more understandable. Task characteristics are mainly composed of autonomy or high task significance (Morgeson & Humphrey, 2006). As illustration 2 indicates, employees in jobs with high task characteristics and low organizational structure exert higher knowledge sharing behavior over those working in organizations with highly favorable organizational structures for knowledge sharing. As Disterer (2001) points out, incoherent paradigms between the individuals’ perception and the organizational goal hinder knowledge sharing. Strong enforcement of organizational structures for knowledge sharing and on the contrary a relative autonomous work design might build incoherent paradigms resulting in lower levels of KSB compared to an autonomous job design with low organizational structure (see illustration 1). This can be supported by the notion of the employee as owner of the knowledge (Kelloway, 2000). Perhaps organizations with strong orientation towards knowledge acquisition and creation do not value the individual as center of knowledge management practices and thus create an additional conflict. Overall, I find it indispensable to test this effect in another context and with different research tools. Only then a full understanding of the interaction terms can be obtained.

Concerning the other measured interaction terms the empirical findings must be regarded carefully. Model 5 depicts no direct effect of technologic environment and organizational structure, thus adding

insight into the current discussion on direct or indirect effects. The interactions presented in Model 6 also show no significant relations, yet the model is affected by strong multicollinearity. Further, no significant increase in  $R^2$  over the model with only work characteristics could be shown. An additional correlation analysis indicates the presence of a significant relationship of technological environment as moderator (*moderated task characteristics: .30, moderated knowledge characteristics .30, moderated knowledge characteristics .26, all on a 99.9% confidence level*), but these findings cannot be reproduced in the multiple regression. The short overall tenure of employees selected might mitigate the organizational influence on KSB.

The developed model of work characteristics as antecedent of KSB accounts for 24 % of observed variance and shows a significant improvement in explanatory power compared with the control variables. In the complex field of numerous impacting elements on individual, team, organizational and contextual factors (Wang & Noe, 2010), the findings underline the importance of work design as antecedent of KSB. Various implications for theory and practice can be deduced.

## **7. Implications and Limitations**

The results and methodological approach of this study add to the existing literature and have important managerial implications.

Firstly, the usage of the standardized work design questionnaire (Morgeson & Humprey, 2006; Stegmann et al., 2010) and the developed self-reporting scale for KSB (Yi, 2009) in German language indicate good model fit. Therefore, researchers should be encouraged to use questionnaire items from these questionnaires to perform similar research.

Secondly, the study adds significantly to the understanding of individual knowledge sharing. As work design is not a distinct antecedent identified in the literature review by Wang and Noe (2010), this study indicates the need for an adapted framework and understanding of antecedents for employees' KSB.

Thirdly, research by Parker et al. (2001) indicates a need to study work design as predecessor of outcomes related to the transfer of knowledge. Following the results of this study the list of tested outcomes of work design can thus be added by KSB. This ultimately increases the future need to explore work design as a human resource practice.

Fourthly, distinct managerial implications can be drawn from the findings. The proposed key work design measures of establishing higher interdependencies and increased teamwork (Cabrera and Cabrera, 2005) cannot be supported. Yet, granting employees more autonomy by reducing directives, introducing flexible working hours and deregulation of work methods will increase the KSB of employees. Allowing slack time might also be an appropriate work design measure with little barriers for implementation. Further, jobs should be designed in a way that allows information gaining,

especially via direct feedback from the job. Employees must be given tasks in a way that results of their work become apparent to them. Managers must pay attention to the feedback loops as they should be perceived as informative and not as controlling by the employees. This may be enforced either through key performance indicators or direct feedback from customers in more service-oriented contexts. An additional job specialization, for example by significantly differing job descriptions even between coworkers or challenging work, which requires the use of manifold skills is another recommendation for HR that can be based on this study.

Notwithstanding the presented implication, this study underlies some limitations. One critique may be the purposive sampling based on the shared connection through the faculty. The high interest of participants in engaging in knowledge transfer as basis of the educational model may not be representable for all business settings. The strong focus on knowledge transfer helps to clearer identify the important factors for further research. The rather explorative nature of the research profits from such above average importance of knowledge transfer. The sample of young employees limits the insights of employee groups with longer tenures and coevally minimizes the possible effects of organizational influence. Also, mostly larger companies with more than 1000 employees have been regarded, raising future research need in SMEs, especially as the findings of this study indicate a significant effect of firm size on KSB. Self-assessment of the individual factors by the employees may create a bias that can only be controlled to a certain extent by careful selection of questionnaire items as done in this study. Future research should address the impact of social relationships as well as possible interaction effects. It should aim to reproduce the findings within a larger and more disperse sample. The possibility to concentrate on one interaction effect with other measurement scales can be used by other researchers. This can also limit the effect of multicollinearity, which was present in parts of the empirical analysis.

Concluding, this study shows the importance of enriched work design on the KSB of employees. It builds and expands the notion of the employee as true owner of knowledge and center of knowledge management initiatives. The role of organizations and HR managers is to create a stimulating and knowledgeable work environment.



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