KNOWLEDGE TRANSFER AMONG CULTURE-DRIVEN CO-WORKERS – A MULTI-DIMENSIONAL ANALYSIS OF CORPORATE CULTURE AS A CRITICAL FACTOR FOR SUCCESSFUL KNOWLEDGE TRANSFER WITHIN ENTERPRISES[1]

Keywords

Knowledge Transfer Behaviour, Corporate Culture, Structural Equation Modelling, AMOS, Practical Implications

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Abstract

This paper analyses the impact of corporate culture on knowledge transfer. A structural equation model is developed to test to what extent corporate culture influences knowledge transfer behaviour and how this leads to successful knowledge transfer. Based on a sample of 168 German firms the results reflect a highly significant impact of corporate culture on successful knowledge transfer within the firm. The study was accomplished in cooperation with the German Chamber of Commerce and Industry (GCCI) and identifies three fields of activity in order to enable successful knowledge transfer with respect to corporate culture in particular.

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1. INTRODUCTION

Although the number of empirical studies on different facettes of knowledge transfer has highly increased, previous finding do not give sufficient information about the influence of corporate culture on the successful knowledge transfer within enterprises. So far, only inadequate solutions for the problems resulting from business culture and its effect on knowledge transfer behaviour exist. A holistic model of successful knowledge transfer considering business culture as a crucial driver is missing.

The discussion in literature states that the two fields knowledge transfer and corporate culture are of great interest. In this discussion, it is obvious that the impact of culture on knowledge as well as its generation and transformation is not considered adequately. Solely, Chase (1998), Skyrme/Amidon (1997), Holden (2001), Bhagat/Kedia (2002), Moffet et al. (2002), Glisby/Holden (2003) and Holden/Von Kortzfleisch (2004) gives first approaches concerning this focused topic. In particular, Moffet et al. (2002) describes corporate culture as one key factor for the transfer of knowledge (Moffett et al. 2002, p. 237). Holden (2001), Glisby/Holden (2003) and Holden/Von Kortzfleisch (2004) discuss variations of knowledge transformation which are based on the cultural background (Holden 2001, p. 155; Glisby/Holden 2003, p. 29; Holden/Von Kortzfleisch 2004, p. 127). Bhagat/Kedia (2002) present a theoretic model which considers culture and corporate strategy as determinants of effective knowledge management. Gupta/Govindarajan (2000) describe knowledge flows within multinational companies, but clues on a dertermining function of cultural differences are still missing.

Literature on knowledge transfer is highly focusing on the process on knowledge transfer. Nevertheless, corporate culture as a crucial factor of successful knowledge transfer is considered inadequately (Buckley/Carter 1999, p. 80; Gupta/Govidarajan 1991, p. 768; Teigland et al. 2000, p. 49). Standard literature on corporate culture is very limited to its deterministic function on knowledge transfer and only gives insufficient approaches on operationalising this construct. Only a very limited number of articles analyses the influence of corporate culture on knowledge transfer with this special focus on particular fragments of issues. Existing concepts on culture typologies do not go that far in order to evaluate the influence of corporate culture on successful knowledge transfer and to identify corporate culture as a crucial factor of knowledge transfer on a high quality level.

In sum, we state that there is an enormous lack of research on knowledge transfer among culture-driven co-workers. A valid and empirical tested model concerning corporate culture as the driver of the co-workers' knowledge transfer behavior and with special respect to successful knowledge transfer is still missing. This is what the research program is prepared for. This leads to the central research question of this paper: In which way does corporate culture influence the transfer of knowledge in enterprises business on an individual level and how does knowledge oriented corporate culture have to be designed in order to support a successful knowledge transfer?

Therefore, the purpose of the paper is to analyse the impact of corporate culture on successful knowledge transfer. The study aims to fill the gap in literature by formulating hypothesis on the cause-and-effect between corporate culture and successful knowledge transfer as well as testing these hypotheses in an empirical study in order to validate the theoretical-conceptual model.

This paper comprises of six parts. After explaining the set of problems and pointing out the most important works on the topics of knowledge transfer and of corporate culture as well as bringing out the need for research in the field of knowledge transfer among culture-driven co-workers. The second chapter pays attention to the discussion of the conceptual background in order to develop a model of knowledge transfer among culture-driven co-workers. The third chapter includes the construction of a model of this group in the context of communication and individual learning theory by a set of hypotheses. In the following chapter the model of knowledge transfer among culture-driven co-workers is empirical verified through a structural equation modeling approach using AMOS. Chapter number five brings the model (chapter 3) and its empirical verification (chapter 4) together and highlights practical options of configuring a successful knowledge transfer in consideration of corporate culture. Objective targets of the concept and its implementation in a corporation are the identification of fields of activity and ascertained methods for management practice in order to enable successful knowledge transfer in consideration of the specific corporate culture. The sixth part concludes the work with a discussion on the research results and explains the limitations of this study. Furthermore, developments prospects, implications for future research as well as recommendations for science and management practice are presented.

2. KNOWLEDGE TRANSFER AND CORPORATE CULTURE

The objective of knowledge transfer is to prepare the existing knowledge relevant to the company in the right quality and on time (Davenport/Prusak 1998). Bresman et al. (1999) state that the process of knowledge transfers is the crucial aspect of knowledge management. King (2007) and Janz/Prasamphanich (2003) affirm corporate culture the most significant factor of successful knowledge management (King 2007, p. 226; Janz/Prasamphanich 2003, p. 351).

Only some authors refer to different effects of corporate culture. For example, Jacobsen (1996) differentiates between primary and secondary effects of corporate culture. Primary effects result from direct causes from corporate culture. Secondary effects results from the primary effects. In analyzing corporate culture, we focus a value oriented approach, which defines attitudes and behaviours in terms of what is relevant to the co-workers within the enterprise. With special respect to O'Reilly et al. (1991) this approach allows us to describe the enterprises by seven dimensions "innovative", "stable", "respecting of people", "outcome oriented", "detail oriented", "team oriented" and "aggressive" on an individual level. Based on individual characteristics of the seven dimensions different types of corporate culture can be derived. This allows a discussion about the behavior of co-workers in general and should allow analyzing knowledge transfer behavior in detail as well.

With special reference to the seven dimensions "innovative", "stable", "respecting of people", "outcome oriented", "detail oriented", "team oriented" und "aggressive" from O'Reilly et al. (1991) the dominating values in the enterprise may lead to a particular knowledge transfer behaviour. This is supported by King (2007) coming to the conclusion that "[...] culture is believed to influence the knowledge related behaviors of individuals […] and overall organizations because it importantly influences the determination of which knowledge is appropriate to share, with whom and when." (King 2007, S. 226). Every enterprise has a unique set of values which causes different priorities of cultural dimensions and lead to an individual corporate culture.

Consequently, the behavior of the culture-driven co-workers which are involved in the knowledge transfer process can be characterized differently. For characterizing the knowledge transfer behavior we refer to different types of decision making and to the extent of involvement. With reference to Kroeber-Riel/Weinberg (2003) and Zaichowsky (1985) involvement means "[…] a person's perceived relevance of the object based on inherent […] values […]" (Zaichowsky 1985, p. 341). This may lead to a different choice of knowledge transfer strategies and defines whether the co-worker chooses individual or general approaches of knowledge transfer and determines the choice of push or pull principles, respectively.

Doz/Santos (1997) try to define successful knowledge transfer by "[…] effective transfer of knowledge is a dialogue between the sender and the receiver about their own contexts and the object of knowledge [...]" (Doz/Santos 1997, p. 23). Watson/Hewett (2006) argue in a similar way that successful knowledge transfer is depending on using and reusing existing knowledge. Using and reusing existing knowledge itself depend on two factors. Firstly, using existing knowledge is determined by the willingness of co-workers how much knowledge they want to share. Secondly, reusing follows the frequence of how often co-workers take and apply existing knowledge (Watson/Hewett 2006, p. 141; Un/Cuervo-Cazurra 2004, p. 29).

The current discussion only gives insufficient insights on successful knowledge transfer characterised by a lack of detail which makes an empirical study impossible. The articles from Gold et al. (2001) and Becerra-Fernandez/Sabherwal (2001) are exceptions. A bunch of articles use the term "successful knowledge transfer" as a depending variable. In contrast, the articles from Kogut/Zander (1995), Ingram/Baum (1997), and Tsai (2001) analyse the effects of knowledge transfer on advantages in competition, future capabilities or profitability. Some of these articles try to consider determinants when defining successful knowledge transfer (see for example Doz/Santos 1997; Jensen/Meckling 1995). In contrast, some articles can be identified, which demonstrate the effectiveness of knowledge transfer in relation to the perceived benefit (Foss/Pedersen 2002, p. 49) or focusing the rudimentary satisfaction with knowledge transfer practice in the enterprise (Becerra-Fernandez/Sabherwal 2001, p. 23). In current research, measuring successful knowledge transfer is an unsolved problem which needs effort to be put in (Hoopes/Postrel 1999, p. 837; Schlegelmilch/Chini 2003, p. 215).

This is just what theory on knowledge transfer tries to do: explaining these factors of interest which may hinder or support knowledge transfer. The majority of empirical articles rather uses the term "successful knowledge knowledge transfer" (von Hippel 1994, p.429; Darr et al. 1995, p. 1750; Szulanski 1996, p. 27) than product quality or even performance effects. Successful knowledge transfer was measured in different ways so far. Some studies focus an evaluation on individuals based on a survey (for example Szulanski 1996, p. 27). Other studies measure successful knowledge transfer by extent of improvement in terms of knowledge routines within the enterprise with special aspects of time, cost and output (Epple et al. 1991, p. 58).

Depending on the individual extent of the seven dimensions "innovative", "stable", "respecting of people", "outcome oriented", "detail oriented", "team oriented" und "aggressive" from O'Reilly et al. (1991) the existing values and attitudes may impact the actions of co-workers in terms of a successful knowledge transfer. The needed integration of knowledge in the organizational knowledge base can lead to differences in interactions among co-workers. Thus, within the knowledge transfer a dynamic

process is needed. We define successful knowledge transfer with special respect to cultural conditions as

- a dialogue between sender and receiver by
- using and reusing existing knowledge
- in accordance with the extent of the seven dimensions“innovative“, “stable“, “respecting of people“, “outcome oriented“, ”detail oriented“, “team oriented“ und “aggressive“ and considers its cognitive and post-cognitive effects on the co-workers behavior and
- leads to exploiting the full potential of action and to an appropriate selection transformation processes to
- to prepare the existing knowledge relevant to the company in the right quality and on time.

3. MODEL AND HYPOTHESIS

This section focuses on hypotheses on components of corporate culture, knowledge transfer behaviour and successful knowledge transfer. The coherence of cause and effect several tendency hypothesis are formulated. The hypotheses were developed from aspects of learning and communication theory. Table 1 shows the deviated hypotheses in order to allow a detailed testing.

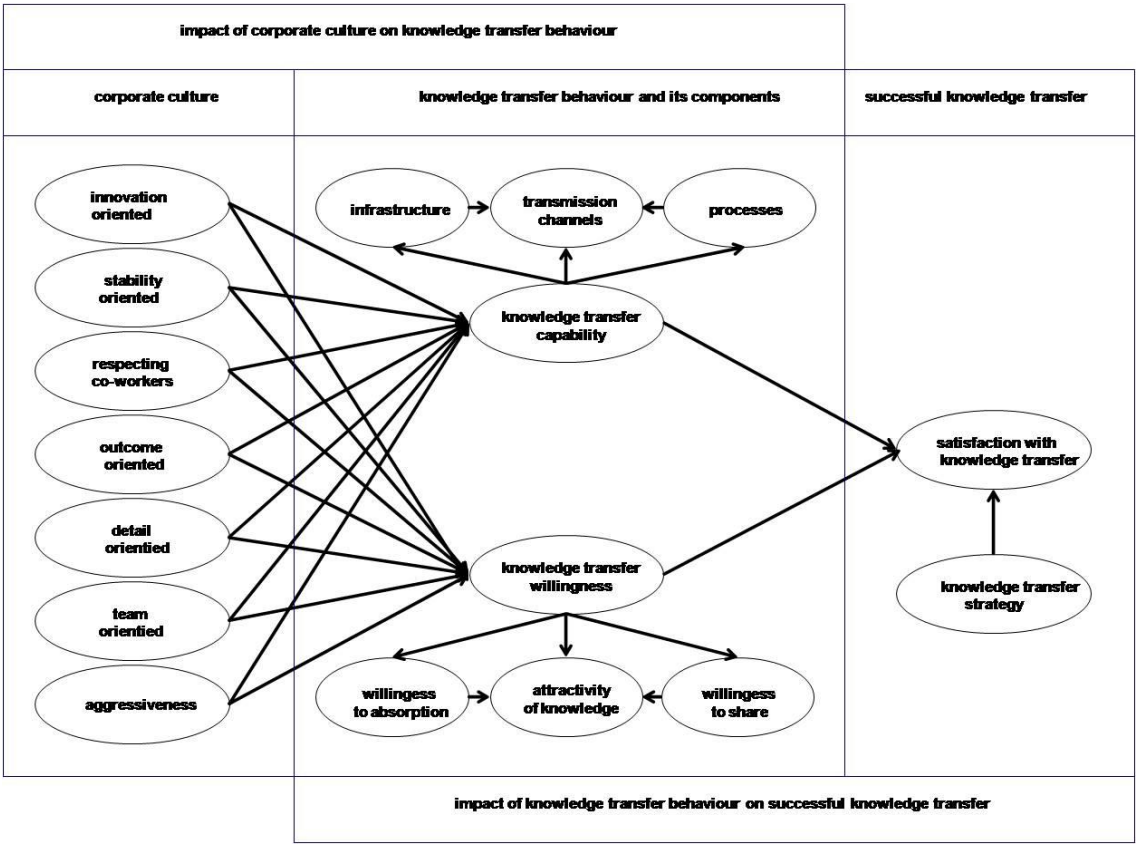
Table 1: Hypotheses on corporate culture, knowledge transfer behavior and successful knowledge transfer

	The global underlying hypothesis is that successful knowledge integration is driven by the predominant corporate culture.	
Components of knowledge transfer and corporate culture	Hypothesis 1	Corporate culture consists of seven dimensions “innovative“, “stable“, “respecting of people“, “outcome oriented“, ”detail oriented“, “team oriented“ und “aggressive“.
	Hypothesis 2	Knowledge transfer capabitlity contains of the three components infrastructure, processes and transmission channels.
	Hypothesis 3	Knowledge transfer willingness results from willingness of absorption as well as of sharing and also results from the attractivity of the knowledge.
Culture-driven co-workers and knowledge transfer behavior	Hypothesis 4	**a:** The more distinctive the innovation orientation, the higher is the knowledge transfer willingness. **b:** The more distinctive the innovation orientation, the higher is the knowledge transfer capability.
	Hypothesis 5	**a:** The more distinctive the stability orientation, the lower is the knowledge transfer willingness. **b:** The more distinctive the stability orientation, the higher is the knowledge transfer capability.
	Hypothesis 6	**a:** The more distinctive the orientation on respecting people, the higher is the knowledge transfer willingness. **b:** The more distinctive orientation on respecting people, the higher is the knowledge transfer capability

	Hypothesis 7	**a:** The more distinctive the outcome orientation, the lower is the knowledge transfer willingness. **b:** The more distinctive the outcome orientation, the higher is the knowledge transfer capability.
	Hypothesis 8	**a:** The more distinctive the detail orientation, the lower is the knowledge transfer willingness. **b:** The more distinctive the detail orientation, the higher is the knowledge transfer capability.
	Hypothesis 9	**a:** The more distinctive the team orientation, the higher is the knowledge transfer willingness. **b:** The more distinctive the team orientation, the higher is the knowledge transfer capability.
	Hypothesis 10	**a:** The more distinctive the orientation on aggressiveness, the lower is the knowledge transfer willingness. **b:** The more distinctive the orientation on aggressiveness, the lower is the knowledge transfer capability.
Knowl. transfer success	Hypothesis 11	Knowledge transfer willingness has a significant positive effect on successful knowledge transfer.
	Hypothesis 12	Knowledge transfer capability has a significant positive effect on successful knowledge integration.

The global underlying hypothesis is that successful knowledge integration is driven by the predominant corporate culture. The individual co-workers is socialised in groups, teams and sub-cultures. This also dominates the relationships with the transfer partners and is influenced the transfer behaviour. No valid standard concept on measuring corporate culture as well as knowledge transfer exists.

Figure 1: Base model for hypothesis testing



In the following, these twelve hypotheses have to be tested in the structural euation model. Taking the hypothesis as well as the operationalisation from theory into consideration the basic model of the empirical study can be defined as in figure 1. The empirical test will be applied in five steps.

4. EMPIRICAL STUDY

4.1 Method

Before conducting the survey, we discussed the questionnaire with colleagues in the scientific community as well with business representatives. We also pre-tested the questionnaire in various task force meetings. We asked managers to complete the questionnaire in our presence and commit on any ambiguities while answering the questions. The questionnaire was developed in German.

From 1980s structural equation analysis (SEA) is used for analysing the dependencies between hypothetical constructs (latent variables) to a still increasing extent (Bagozzi, 1980; Bagozzi, 1982; Foerster et al., 1984). SEA is dependence analytic approach, which analyses the extent and direction of relations among dependent and independent variables (Homburg/Pflesser, 1999). From a methodological perspective, SEA is a combination of factor analysis and regression analysis. This allows simultaneous measuring of complex constructs and analysing complex dependency structures.

SEA is divided into four steps. exploratory factor analysis, confirmatory factor analysis, check of discriminant analysis and path diagram. Preliminary stages contain analysis of reliability, item-to-total correlations and factors (exploratory) to eliminate particular indicators. In literature nearly exclusively reflective measurement models are used without checking the applicability of this sort of measurement models (cf. Eggert and Fassott, 2003; Fassott, 2006). The reason for the dominance of reflective measurement models is due to the

most frequently used software applications such as AMOS and LISREL which assume a reflective measurement model (Fassot, 2006). However, it is crucial for the selection of the approach and software, whether the latent variables are operationalised in reflective indicators or not. Fassot (2006) and Jarvis et al. (2003) suggest a particular list of questions for checking type of operationalisation. After adopting this list of question we state that this operationalisation is reflective. For software support we choose SPSS 15.0 and AMOS 16.0.

4.2 Measures

4.2.1 Operationalising the latent variable "knowledge transfer behaviour"

According to our definition of knowledge transfer behaviour this construct is divided into two dimensions: knowledge transfer capabilities and knowledge transfer willingness. The first dimension "knowledge transfer capabilities" is operationalized into three factors: "infrastructure", "processes" and "transmission channels". In the following, we name them as components of knowledge transfer behavior. The component "knowledge transfer capability and infrastructure" considers the essential set of resources the co-workers have to have to get involved in knowledge transfer. This is consistent with the approach of Gold et al. (2001). "Knowledge transfer capability and processes" contains the application of knowledge transfer on both sides: sender and receiver and is according to Becerra-Fernandez/Sabherwal (2001). The third component "knowledge transfer capability and transmission channels" includes informal and formal channels as a prerequisite of internal knowledge transfer (Gupta/Govindarajan 2000).

The second dimension knowledge transfer willingness is indicated by three factors: "willingness to absorb", "willingness to share" and "knowledge attractivity". In the following, we also call them components of knowledge transfer behavior as we need with the factors of knowledge transfer capabilities. The component "knowledge transfer willingness and absorption" considers the willingness to use previous knowledge in order assign a value of an information and to assimilate and approach it in practical context. This goes back to an approach of Szulanski et al. (2004). "Knowledge transfer willingness and sharing" contains the willingness and the denial respectively concerning participation in knowledge transfer. For example, see Chow et al. (2001), Chow et al. (1999) and Khandwalla (1977). The third component "knowledge transfer willingness and knowledge attractivity" includes the willingness and the denial respectively concerning the active sharing of information and knowledge.

In sum, the latent variable "knowledge transfer behavior" is operationalized into 59 indicators, whereof 25 belonging to the knowledge transfer willingness and 34 indicators to the knowledge transfer capabilities respectively.

4.2.2 Operationalising the latent variable "successful knowledge transfer"

According to our definition of successful knowledge transfer this construct is divided into two factors: knowledge transfer strategy and satisfaction with knowledge transfer. Knowledge transfer strategy measure the extent of an existing knowledge transfer strategy and give indications to explicate the consequence of knowledge transfer willingness and capabilities. Satisfaction with knowledge transfer allows an indirect measurement of knowledge transfer success. We do not measure the amount or type of integrated knowledge consciously. According to Becerra-Fernandez/Sabherwal (2001),

and Pflesser (1999) we rather focus on the perceive level satisfaction of the individual co-worker.

In sum, the latent variable "successful knowledge transfer" is operationalized into 10 indicators, whereof 6 belonging to the knowledge transfer strategy and 4 indicators to the satisfaction with knowledge transfer respectively.

4.2.3 Operationalising the latent variable "corporate culture"

With reference to our definition of corporate culture this construct is divided into seven dimensions. This goes back to the approach on Organizational Culture Profiling (OCP) from O'Reilly et al. (1991). In the following, we will work on the seven dimensions dimensions "innovative", "stable", "respecting of people", "outcome oriented", "detail oriented", "team oriented" und "aggressive" and have to implement results from other study through a meta-analysis in order to remedy the vague construction of the existing approach. Furthermore, aspects from communication and learning theory with a focus on similar dimensions have been considered and will be described in depth.

The dimension "innovation oriented" contains specific values of being innovative, open for new opportunities, risky, less careful and less rule oriented. In addition to O'Reilly et al. (1991) innovation aspects were considered from Gordon/Cummins (1979), Hofstede (1980), Guptara (1992), Xenikou/Furnham (1996), Hofstede (1998), Poech (2003) und Unterreitmeier (2004) amongst others. "Stability oriented" is characterized by a strong rule orientation as well as stability and values security. Hofstede (1980), Hofstede (1998), Kern (1991), Guptara (1992) and Unterreitmeier (2004) complete the stability aspects of O'Reilly et al. (1991). The dimension "respecting co-workers" is indicated by value orientations concerning the support of fairness, respecting colleagues and other staff. We took special attention to Gordon/Cummins (1979), Hofstede (1980), Hofstede (1998), Poech (2003), Kern (1991) and Unterreitmeier (2004) while checking O'Reilly et al (1991) as well. "Outcome oriented" covers values of success, action or objective orientation. Therefore, approaches from Gordon/Cummins (1979) and Poech (2003) were taken to shape this dimension of O'Reilly et al. (1991). In contrast, "Detail oriented" covers values dealing with precise and analytical work approaches. Solely, O'Reilly (1991) approach was conducted in this respect. "Team oriented" is characterized by a strong staff orientation, team work and team building. Poech (2003), Gordon/Cummins (1979), Hofstede (1998) und Hofstede (1980) complete the team aspects of O'Reilly et al. (1991). The dimension "aggressiveness" contains specific values of high competitiveness and low social responsibility. In addition to O'Reilly et al. (1991) aggressiveness aspects were considered from Gordon/Cummins (1979), Hofstede (1998) and Kern (1991) amongst others.

The construct "corporate culture" has been operationalized into 49 indicators.

4.3 Sample and data set

The empirical study on the cause-and-effect between successful knowledge transfer and corporate culture was conducted with the German Chamber of Commerce and Indsutry (GCCI) in Berlin. The GCCI delegated the study to the local chambers monitored the procedure. All members have been addressed.

We collected data on corporate culture, knowledge transfer behaviour as well as successful knowledge transfer through a survey. With support of the German Chamber of Commerce and Industry our survey yielded responses from 172 firms, from which four were not usable. The 168 firms in our sample cover various branches of industries such as automobile (17.3%), machinery and plant manufacturing (14.3%), chemistry (13.7%), consumer goods (13.1%) as well medical engineering electronics and information technology (12.5% each). All firms are located in Germany.

4.4 Results

4.4.1 Testing the impact of corporate culture on knowledge transfer behaviour

After exploratory factor analysis we did a confirmatory factor analysis. The local performance indicators were excellent. The global performance indicators are satisfactory (χ^2/df=1.1; RMSEA=.246; GFI=.995; AGFI=.992; stand.RMR=.047). The level of significance amounts $p \leq 5\%$. The fit of the total model is satisfactory.

Figure 2: Path diagram of the impact of corporate culture on knowledge transfer capability

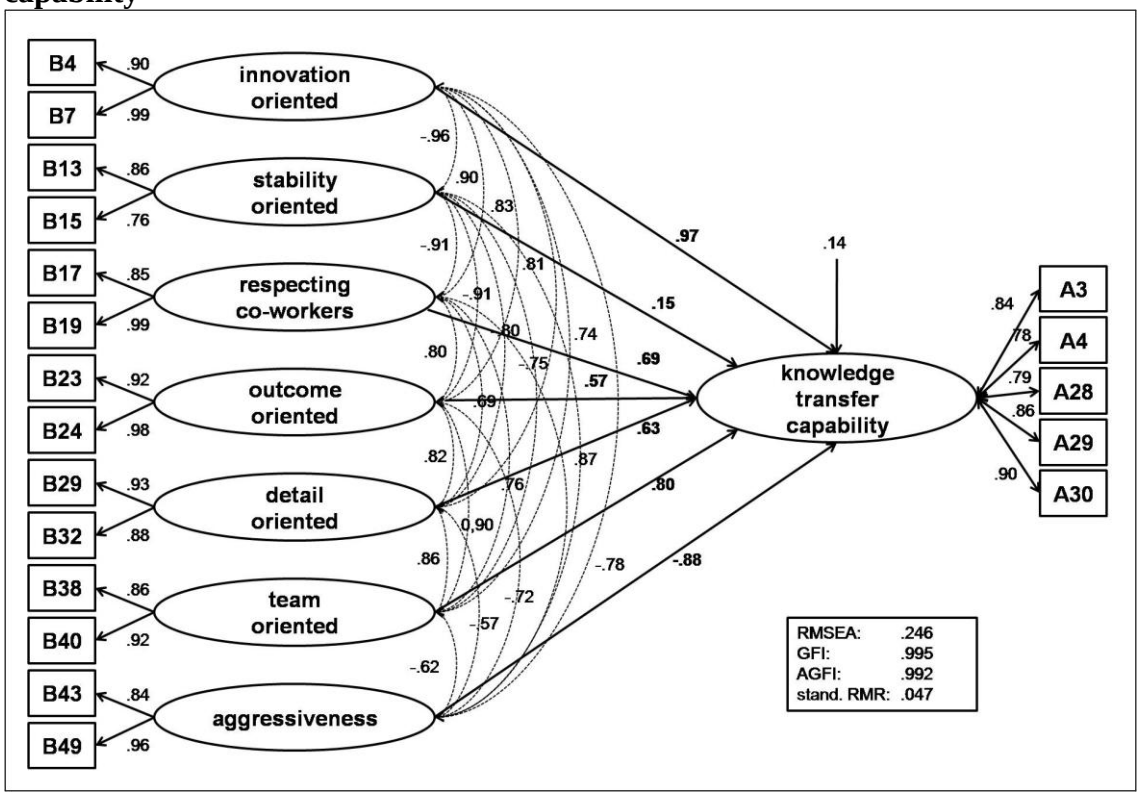


Figure 2 shows the path diagram of the impact of corporate culture on knowledge transfer capability. The empirical cause-and-effects are shown through standardized coefficients. Corporate culture determines 86% of the total variance of knowledge transfer capability.

The impact of "innovation oriented" cultures on knowledge transfer capability is very high with r=.97. Hypothesis 4b is validated and approved. The direct effect of "stability oriented" cultures on knowledge transfer capability is rather low. Due to r=.15 with reference to the level of significance amounting $p \leq 5\%$ we have to disapprove hypothesis 5b. Stability oriented cultures do not impact knowledge transfer capability

significantly positive. The standard coefficient r=.69 reveals the effect of "respecting co-workers" on knowledge transfer capability. This impact is quite high. Hypothesis 6b is approved. An extensive respecting of co-workers impacts knowledge transfer capability significantly positive. The impact of outcome orientation on knowledge transfer capability is high as well (r=.57). Hypothesis 7b is approved. An extensive level of outcome orientation has a significantly positive effect on knowledge transfer capability. r=.63 shows that a high level of detail orientation impacts knowledge transfer capability significantly positive. Hypothesis 8b is approved. The direct effect of team orientation on knowledge transfer capability is very high (r=.80). This significantly positive effect leads to approvement of hypothesis 9b. The effect of aggressiveness on knowledge transfer capability is significantly negative. Hypothesis 10b has to be approved due to r=-.88.

For testing the impact of corporate culture on knowledge transfer willingness we choose the same approach as we did before with knowledge transfer capability as the endogenous variable. After exploratory factor analysis we did a confirmatory factor analysis. The local performance indicators were excellent. The global performance indicators are still satisfactory although χ^2/df failed definitely (χ^2/df=13.0; RMSEA=.263; GFI=.993; AGFI=.989; stand.RMR=.057). The level of significance amounts $p \leq 5\%$. The fit of the total model is satisfactory.

Figure 3: Path diagram of the impact of corporate culture on knowledge transfer willingness

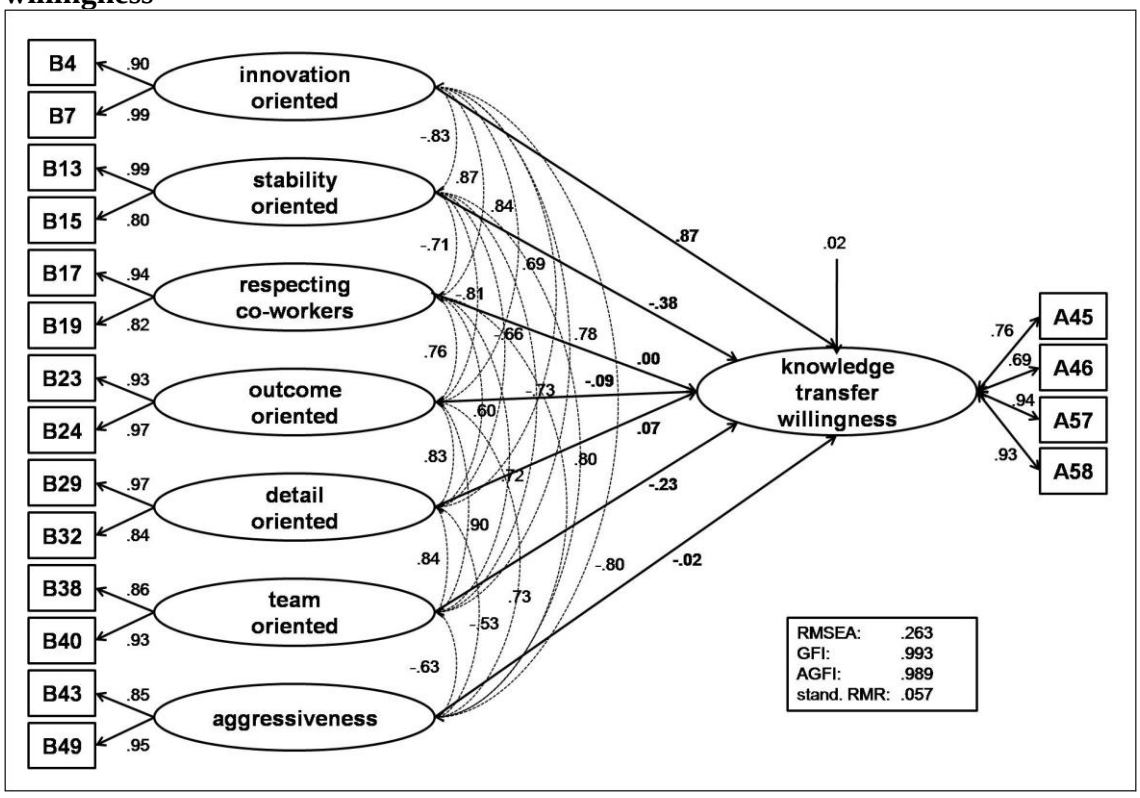


Figure 3 shows the path diagram of the impact of corporate culture on knowledge transfer willingness. The empirical cause-and-effects are shown through standardized coefficients. Corporate culture determines 98% of the total variance of knowledge transfer willingess.

The impact of "innovation oriented" cultures on knowledge transfer willingness is very high with r=.87. Hypothesis 4a is validated and approved. The direct effect of "stability

oriented“ cultures on knowledge transfer willingness is rather high. Due to r=-.38 with reference to the level of significance amounting p≤5% we have to approve hypothesis 5a. Stability oriented cultures impact knowledge transfer willingness significantly negative. The standard coefficient r=.00 reveals the effect of “respecting co-workers“ on knowledge transfer willingness. Hypothesis 6a has to be disapproved. The impact of outcome orientation on knowledge transfer willingness is very low (r=.09). Hypothesis 7a is disapproved. An extensive level of outcome orientation has no significant positive effect on knowledge transfer willingness. r=.07 shows that a high level of detail orientation does not impact knowledge transfer willingness significantly positive. Hypothesis 8a is disapproved. The direct effect of team orientation on knowledge transfer willingness is quite low (r=.23). This missing significantly positive effect leads to disapprovement of hypothesis 9a. The effect of aggressiveness on knowledge transfer willingness is neither negative nor positive significant. Hypothesis 10a has to be disapproved due to r=-.02.

4.4.2 Testing the impact of knowledge transfer behaviour on successful knowledge transfer

After exploratory factor analysis we did a confirmatory factor analysis. The local performance indicators were good. The global performance indicators are satisfactory (χ^2/df= 9.9; RMSEA=.337; GFI=.855; AGFI=.803; stand.RMR=.273). The level of significance amounts p ≤ 5%. The fit of the total model is satisfactory.

Figure 4: Path diagram of the impact of knowledge transfer capabiltiy and knowledge transfer willingness on successful knowledge transfer

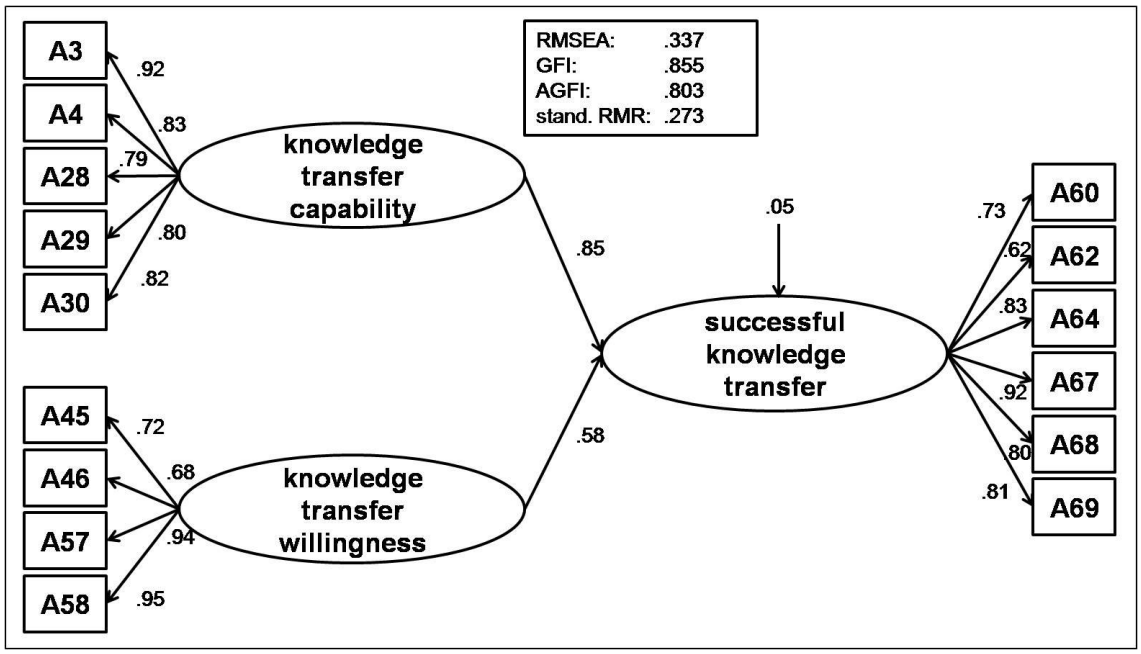


Figure 4 shows the path diagram of the impact of knowledge transfer capabiltiy and knowledge transfer willingness on successful knowledge transfer. The empirical cause-and-effects are shown through standardized coefficients. Knowledge transfer capability and knowledge transfer willingness determine 95% of the total variance of successful knowledge transfer.

The impact of knowledge transfer capability on successful knowledge transfer is very high with r=.85. Hypothesis 12 is validated and approved. A high level of knowledge transfer capability effects a successful knowledge transfer significantly positive. r=.58 shows that a high level of knowledge transfer willingness impacts successful knowledge transfer significantly positive. Hypothesis 11 is approved.

4.4.3 Summary of direct impacts and calculating total effects

In addition to the direct effects we calculated indirect and total effects in order to get a holistic view on corporate culture's impact on successful knowledge transfer. This is one of the numerous advantages of SEA, which would be not able using regression analysis solely. The indirect effect is calculated by multiplication of the path coefficients. The total effect is the sum of direct and indirect effects (Jahn 2007, p. 10).

Table 2: Direct, indirect and total effects

Independent variables / dimensions "corporate culture"	dependent variable "knowledge transfer behaviour"		dependent variable "successful knowledge transfer"		
	direct effect "knowledge transfer capability"	direct effect "knowledge transfer willingness"	indirect effect (via KTC)	indirect effect (via KTW)	totale effect
innovation oriented	.97	.87	.82	.50	1.32
stability oriented	.15	-.38	.13	-.22	-.09
respecting employees	.69	.00	.59	.00	.59
outcome oriented	.57	-.09	.48	-.05	.43
detail oriented	.63	.07	.54	.04	.58
team oriented	.80	-.23	.68	-.13	.55
aggressiveness	-.88	-.02	.75	-.01	-.74

The indirect effects of corporate culture on successful knowledge transfer have been calculated by multiplication of the direct effects of corporate on knowledge transfer behavior and the direct effects of knowledge transfer behavior on successful knowledge transfer. The sum of the two calculated indirect effects represent the total effect because a direct effect of corporate culture on successful knowledge transfer has not been considered in the model.

The analysis of the total effects of demonstrates nearly all types / dimensions of corporate culture have a significant impact on successful knowledge transfer. Solely, "stability oriented" culture differs and is an exception with a total effect of -.09. It is not significant negative. In contrast, corporate culture with value orientations on innovation, respecting co-workers, detail and team has a significant positive effect on successful knowledge transfer in each case. Successful knowledge transfer is significantly negative influenced by the value orientation aggressiveness. It is obvious that positive and negative indirect effects cancel each other to some extent. Ultimately, the objective of this approach was to analyze and validate the total effect. Therefore,

these cancelling aspects are no issue in this respect. The origin hypothesis is validated: Corporate culture is a critical factor of successful knowledge transfer within enterprises.

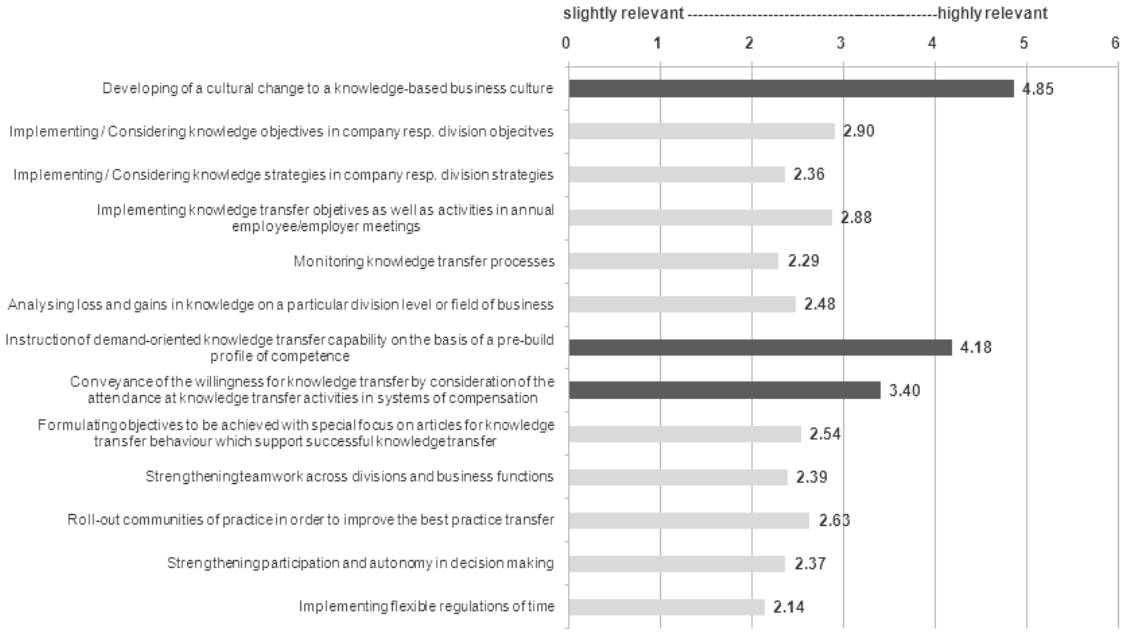
5. PRACTICAL IMPLICATIONS

We consider that the findings presented in this paper have implications for industrial policy on knowledge transfer. In particular, regarding a firm's corporate culture, we believe that it is reasonable to expect firms to follow a corporate culture of orientations on innovation, respecting of people, outcome, detail and team in order to support a successful knowledge transfer. In the context of knowledge transfer, firms need to improve knowledge transfer capabilities within the company. Moreover, the willingness to take part in knowledge transfer has to be supported by the firm. Taking the special aspects of corporate culture discussed earlier as well as the components of knowledge transfer behaviour in to consideration firms may achieve a higher level of knowledge transfer.

Different aspects in order to improve the knowledge transfer have been derived from theory and tested in this study. For reflecting these results to the enterprises' approaches we also asked the enterprise what measures they usually take in order to improve knowledge transfer and how they evaluate our methodical and organizational suggestions. The evaluation follows a five-point scale ranking from "slightly relevant" to "highly relevant".

Figure 5 shows three fields of action from the enterprises' perspective. Die calculated means demonstrate that three measures are highly relevant in contrast to other suggestions. Measures in relation to getting a corporate culture changed to a knowledge oriented culture are outstandingly relevant (mean value: 4.85, standard deviation: .357). Training of demand-oriented knowledge transfer capabilities with reference to an individual competence profile (mean value: 4.18; standard deviation: 1.13) and measures concerning a support of the knowledge transfer willingness through appropriate numeration systems (mean value: 3.4; standard deviation: 1.096) are evaluated above-average as well.

Figure 5: Fields of action from the enterprises' perspective



The relevance of the remaining measures was evaluated below-average. The business survey embodied, that from a business practice view, three essential control lever exist, that are respective fields of action for the conversion of successful knowledge transfer: developing of a cultural change to a knowledge-based business culture, instruction of demand-oriented knowledge transfer capability on the basis of a pre-build profile of competence, conveyance of the willingness for knowledge transfer by consideration of the attendance at knowledge transfer activities in systems of compensation. These three fields of action have been identified in the theoretical-conceptual analysis. Furthermore, the structural equation analysis also confirmed these findings. Hypothesis correlated with this three field have been tested successfully.

6. SUMMARY

Starting point of this paper was our statement that preliminary findings concerning successful knowledge transfer with special focus on business culture have only be developed to some extent. This study attempted to fill the gap in the literature by investigating how business culture influences the successful knowledge transfer in enterprises. The authors have established evident findings of an investigation to the connection of successful knowledge transfer and business culture.

This paper makes several contributions to the literature. Firstly, from a theoretical perspective, business culture could be identified as a determinant of a successful knowledge transfer. Secondly, the intention was to analyse cogently the cause-and-effect coherency on an empirical level in a structural equation model. A better understanding and empirical proof of the impact of corporate culture on successful knowledge transfer is given now. Therefore it was necessary to attend extensively to the operationalization of the involved constructs "successful knowledge transfer", "knowledge transfer behaviour" as well as "business culture".

We consider that the findings presented in this paper have implications for research on knowledge transfer and for industrial policy on knowledge transfer. In particular, regarding a firm's corporate culture, we believe that it is reasonable to expect firms to follow a corporate culture of orientations on innovation, respecting of people, outcome, detail and team in order to support a successful knowledge transfer. In the context of knowledge transfer, firms need to improve knowledge transfer capabilities within the company. Moreover, the willingness to take part in knowledge transfer has to be supported by the firm. Taking the special aspects of corporate culture discussed earlier as well as the components of knowledge transfer behaviour in to consideration firms may achieve a higher level of knowledge transfer.

This paper has several limitations. Each of these offers opportunities for further research. The first limitation is the internal perspective of knowledge transfer. From a theoretical perspective finding on internal knowledge transfer may be transferred to a network and branch perspective, respectively. Various drivers of knowledge have to be considered in this context. We presume that other factors such as national culture, geographic distance or political power may be of higher importance in contrast to the internal perspective. The second limitation contains the theoretical foundations on aspects of communication and learning theory, exclusively. A broader theoretical foundation considering more psychological approaches allows a higher focus on behavioural aspects. Moreover, advances could be made by eliminating particular independent variables from corporate culture by giving a detailed analysis of one type

of corporate culture and its effect on knowledge transfer. Finally, it would be interesting to replicate this study in contexts, for example particular industry branches, that permit an in-depth examination of the effect of corporate culture on knowledge transfer.

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