The Choice of Knowledge Transfer Mechanisms in Franchising Networks

Combining Information Richness and Property Rights Theory

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Abstract
In this paper we develop a property rights view on the choice of knowledge transfer mechanisms in franchising firms that integrates results from the information richness theory. Starting from the information richness theory we argue that the degree of contractibility of system knowledge determines the information richness of the knowledge transfer mechanism of franchising firms. The lower the contractibility of knowledge, the more knowledge transfer mechanisms with a higher degree of information richness are used, such as training, seminars, visits and meetings. We examine the following hypotheses: (1) If the franchisor’s knowledge is contractible/explicit, knowledge transfer mechanisms with a lower degree of information richness are used. (2) If the franchisor's knowledge is noncontractible/tacit, knowledge transfer mechanisms with a higher degree of information richness are used. We test these hypotheses by using data from 83 franchising firms in the Austrian franchise sector. The data provide support for the hypotheses.

Keywords
Knowledge transfer, information richness, property rights theory, contractibility, franchising
1 Introduction

The success of franchising networks, strategic alliances, joint ventures and clusters is highly dependent on the capability to create and transfer knowledge within the network (e.g. Albino et al. 1999; Mohr et al. 1994, 1999; Maskell, Malmberg 1999; Hult et al. 2004). Franchising networks require the transfer of system-specific know-how to franchisees to create a network of successful franchised outlets. Higher efficiency of the network partners results in a higher residual surplus for the whole system. Thus, a successful replication of the business concept by the franchisees and managers of the local outlets is a key to realize competitive advantage (Argote, Ingram 2000; Winter 1987). This requires an efficient governance of the knowledge transfer from the franchisor to the franchisees. The franchisor can use a variety of transfer mechanisms: Training, conference meetings, outlet visits, telephone, fax, intra- and internet and other electronic transfer mechanisms. The paper addresses the issue of the choice of knowledge transfer mechanisms in franchising networks.

In previous years a large number of researchers in organization theory and management examined knowledge transfer within and across organizational boundaries using information (media) richness theory and the knowledge based view of a firm. The first attempt was to answer the questions of how to reduce ambiguity in order to facilitate the transfer of information (Daft, Lengel 1986; Russ et al. 1990; Dennis, Kinney 1998; Sheer, Chen 2004). The knowledge based view of the firm (Barney 1991; Kogut, Zander 1993; Nonaka, Takeuchi 1996; Conner, Prahalad 1996) argues that gaining competitive advantage by setting up networks requires effective mechanisms to facilitate
interorganizational transfer of tacit and explicit knowledge (Zander, Kogut 1995; Inkpen 1996; Hakanson 2005). In this paper we develop a property rights approach that integrates results from the information richness theory. We argue that information richness theory offers a criteria (‘information richness’ (IR)) to differentiate knowledge transfer mechanisms according to their information processing (knowledge transfer) capacity. In franchising, knowledge transfer mechanisms with a relatively higher degree of information richness are training, conference meetings, telephone, visits of the outlets; and knowledge transfer mechanisms with a relatively lower degree of information richness are fax, intra- and internet and other electronic transfer mechanisms. According to the property rights theory, contractibility of knowledge determines IR of the knowledge transfer mechanisms. The thesis of our paper is: The higher the noncontractibility of the franchisor’s system knowledge, the more knowledge transfer mechanisms with a higher degree of IR should be used to facilitate an efficient knowledge transfer from franchisor to franchisees.

The article is organized as follows: Section two reviews the relevant literature related to knowledge transfer in networks. In section three we develop the property rights view of knowledge transfer mechanisms and derive testable hypotheses. Finally, we test the hypotheses that the choice of knowledge transfer mechanisms in franchising depends on the contractibility of knowledge using data from the Austrian franchise sector.

2 Literature Review

Research on information and knowledge transfer in organization started with the information richness theory in the 1980s (Daft, Macintosh 1981; Daft, Lengel 1984, 1986; Trevino et al. 1987; Daft et al. 1987; Russ et al. 1990; Sheer, Chen 2004). According to this
view, effective communication requires a fit between task ambiguity/equivocality and ‘richness’ of the communication media. Recent studies extend this view to new electronic communication media (Lim, Benbasat 2000; Büchel, Raub 2001; Sexton et al. 2003; Vickery et al. 2004). However, information richness theory cannot explain the knowledge transfer, because it does not relate the concept of information richness to the characteristics of knowledge.

Since the 1990s many researchers in the field of the knowledge based view of the firm have examined the problem of internal and inter-organizational knowledge transfer (Zander, Kogut 1995; Nonaka 1994; Mowery et al. 1996; Szulanski 1995, 2000; Baum, Ingram 1998; Simonin 1999a,b; Argote 1999; Albino et al. 1999; Argote et al. 2003; Bresman et al. 2003; Nonaka et al. 2003; Gertler 2003; Moffat, Archer 2004; Jensen, Szulanski 2007). Starting from Polanyi’s knowledge concept (Polanyi 1962), they investigated knowledge transfer in organizations and networks. According to the knowledge based view of the firm, tacitness positively varies with the difficulty of knowledge transfer. On the other hand, most of this literature does not investigate the relationship between knowledge characteristics and knowledge transfer mechanism. Inkpen and Dinur (Inkpen 1996; Inkpen, Dinur 1998) are an exemption. They go further by analyzing the relationship between knowledge characteristics and knowledge transfer mechanisms in international joint ventures. However, they do not develop a more general approach that explains the relationship between knowledge types and knowledge transfer mechanisms in networks.

In marketing, Mohr and Nevin (Mohr, Nevin 1990; Mohr, Sohi 1995; Mohr et al. 1994, 1996, 1999) develop and test a contingency approach of communication strategy in
marketing channels based on organization and communication theory. According to this view, communication strategy - consisting of frequency of contact, modality or medium of communication, directionality of communication flow and content of influence strategies - has to match the channel conditions (channel structure, climate and power). Peters and Fletcher (2004) and Cai et al. (2006) extend this approach to intra-organizational communication and internet communication. Compared to the information richness theory and to our approach, Mohr and Nevin’s concept of communication strategy refers not only to the medium of communication but also to other facets of communication, such as frequency, direction and content. Furthermore, Mohr and Nevin do not include the knowledge characteristics as contingency factor in the channel conditions that influence the choice of communication strategy.

Although franchising has been treated extensively in organization economics, management and marketing in the last decade, the problem of knowledge transfer between the franchisor and franchisees remains largely unexplored (Darr et al. 1995; Paswan, Wittmann 2003; Paswan et al. 2004). Darr et al. (1995) examine the transfer of knowledge between franchisee-owned outlets by using reports, phone calls, personal acquaintances and meetings as transfer mechanisms. The study shows that knowledge is primarily transferred across stores owned by the same franchisee but not across stores owned by different franchisees because the frequencies of phone calls, personal acquaintances and meetings are significantly higher in the case of stores owned by the same franchisee compared to stores owned by different franchisees. Furthermore, Paswan and Wittmann (2003) argue that franchising firms as network organizations characterized by dense social contacts have the potential to benefit greatly from knowledge created by its distributed network members.
This is compatible with Kogut and Zander’s view (Zander, Kogut 1995) who point out that social relations among the network partners may support the transfer of tacit knowledge. However, Paswan et al. do not investigate the problem of the choice of knowledge transfer mechanisms in the network.

In sum, the existing studies have the following theoretical and empirical deficits: Firstly, they do not offer a theoretical framework for the explanation of the knowledge transfer mechanisms in networks, and, secondly, they do not develop and test hypotheses about knowledge transfer mechanisms in franchising networks. Starting from this gap, the objective of our paper is to develop a property rights approach on the choice of knowledge transfer mechanisms that integrates results from the information richness theory. Our main contribution to the literature is to combine the property rights with the information richness theory to explain knowledge transfer mechanisms in franchising networks. Furthermore, our study utilizes primary data from Austrian franchise systems that enables us to estimate the factors which the theory considers affect the choice of knowledge transfer mechanism. We present the first empirical evidence that the information richness of knowledge transfer mechanisms in franchising is positively related to the noncontractibility of system-knowledge. Consequently, this research advances the theoretical aspect of knowledge transfer in networks by stating that the choice of knowledge transfer mechanisms depends on the contractibility of knowledge.

3 Theory Development
Since our property rights approach uses the concept of information richness to operationalize the knowledge transfer capacity, first we discuss the main proposition of the information richness theory.

3.1 Information Richness Theory

The information richness (IR) concept was developed by Lengel and Daft (Daft, Lengel 1984; 1986; Lengel, Daft 1988). IR-theory examines the question, which communication (knowledge transfer) mechanisms are effective under different degrees of ambiguity (or equivocality) of the communication task (Daft et al. 1987). An effective knowledge transfer requires a fit between IR of the communication mechanism and the information processing requirements of the task (Sheer, Chen 2004). The information processing requirements directly vary with task ambiguity. ‘Richness’ consists of four attributes of the communication mechanism: feedback capability, availability of multiple cues (voice, body, gestures, words), language variety, and personal focus (emotions, feelings). The more of these attributes a mechanism possesses, the higher is the degree of IR of the mechanism, and the greater is their capacity to handle ambiguity and hence the knowledge transfer capacity. Knowledge transfer mechanisms with a relatively higher degree of IR refer to face-to-face interactions and team-based mechanisms (meetings, trainings, seminars, workshops, outlet visits, telephone) and knowledge transfer mechanism with a lower degree of IR refer to written media, manuals, reports, data base, written instructions and electronic media. Face-to-face is the richest communication mechanism because it has the capacity for direct experience, multiple information cues, immediate feedback and personal focus. Written impersonalized documents, like standardized computer reports, databases,
computer prints, are the media with the lowest information richness level. There is no opportunity for feedback and these documents have quantitative nature. The information richness theory can be summarized by the following proposition: The higher the task ambiguity, the more rich knowledge transfer mechanisms are needed for an effective knowledge transfer.

3.2 Contractibility and the Choice of Knowledge Transfer Mechanisms

According to the property rights theory, the characteristic relevant for the determination of the efficient knowledge governance mechanisms is the degree of contractibility of knowledge (Hart and Moore 1990; Brynjolfsson 1994; Hart 1995; Baker and Hubbard 2003, 2004; Lerner, Malmendier 2005). If the knowledge is explicit and hence codifiable, all relevant information on actions and environment can be written down in contracts. In this case, knowledge can be efficiently transferred by using low-IR-knowledge transfer mechanisms. If the knowledge is tacit and hence difficult to codify, contracts are incomplete because not all relevant knowledge and actions can be written down. In this case, higher-IR-transfer mechanisms are needed to process and transfer the noncontractible component of knowledge. This is compatible with Teece’ view (Teece 1985, 229): “Tacit knowledge is extremely difficult to transfer without...teaching, demonstration and participation”. Therefore, as noncontractibility of knowledge increases by degree, a larger knowledge transfer capacity and hence more higher-IR-knowledge transfer mechanisms are required for an efficient knowledge transfer. In addition, Berry & Broadbent (1987), Argote (1999) and Almeida & Kogut (1999) argue that high-information rich mechanisms facilitate both the transfer of tacit and explicit knowledge because of the complementarity between
tacit and explicit knowledge. In sum, the property rights view on the choice of knowledge transfer mechanisms can be stated by the following proposition: The more noncontractible (contractible) the knowledge is, the more knowledge transfer mechanisms with a higher (lower) degree of IR are needed to facilitate an efficient knowledge transfer.

Now we apply this approach to the choice of knowledge transfer mechanisms in franchising networks. We start with an example by comparing three knowledge situations and ask the question which knowledge transfer mechanisms should be used (see figure 1). First, we assume that the system knowledge of the franchisor is codified in reports, manuals and databases. With a high-contractibility component the system knowledge can be easily transferred by using lower-IR-mechanisms (for instance postal mailings, fax, intra- and internet and other electronic transfer mechanisms) (see FIT I in figure 1). Second, we assume that the system-specific knowledge is not codifiable. In this case, most of the franchisor’s knowledge and organizational capabilities reside within persons and groups in the franchisor’s headquarters and at the outlets. With a high-noncontractibility component the system-specific knowledge can be only transferred by using more higher-IR-mechanisms (for instance training, meetings, visits, telephone) (see FIT II in figure 1).

If these alignment conditions are not fulfilled, the following inefficiencies may arise (Russ et al. 1990): (a) MISFIT I: If the franchisor’s system-specific knowledge is mainly tacit, the knowledge is not efficiently transferred to the franchisees by using low-IR mechanisms. In this case, the franchisees are unable to understand and adequately apply the noncontractible system know-how because it is based on organizational capabilities of employees and groups at the headquarters and at the company-owned outlets. (b) MISFIT II: If the franchisor’s knowledge is codifiable, it is not efficiently transferred by using high-
IR mechanisms. Although high-IR-mechanisms facilitate the transfer of contractible knowledge, it is not efficient because high knowledge transfer costs arise due to the high set-up costs of high-IR-mechanisms. In addition, due to behavioural uncertainty the risk of information selection and manipulation increases under personal knowledge transfer mechanisms.

Insert Figure 1

Third, we assume that the system-specific knowledge of the franchisor is partly contractible and partly noncontractible. Further we assume that the explicit part is codified in manuals, reports, and databases and additional system-specific knowledge resides within the managers, employees and teams at the franchisor’s headquarters and the company-owned outlets. Although codified manuals, reports and databases exist, their utility for franchisees is relatively low because they cannot adequately apply the codified part of the system-specific knowledge because this requires specific organizational capabilities. If in this case the franchisor only adopts lower-IR-knowledge transfer mechanisms, the franchisees are unable to adequately understand and apply the requisite system knowledge. Consequently, since a large part of the system knowledge to be transferred to the franchisees is noncontractible, low-IR-mechanisms are insufficient to facilitate the transfer of the requisite knowledge. In this case, both low- and high-IR-mechanisms are needed to efficiently transfer the system knowledge. For instance, training, visits and meetings would facilitate the transfer of the high-tacit component of knowledge and thereby also improving the understanding of the more explicit component of the system knowledge.
As a result, the property rights view on the choice of knowledge transfer mechanisms in franchising can be stated as follows: The more noncontractible the system knowledge of the franchisor, the more higher-IR-transfer mechanisms are needed for an efficient knowledge transfer; and the more contractible the system knowledge, the more lower-IR-transfer mechanisms are needed for an efficient knowledge transfer. Therefore the following testable hypotheses can be derived:

H1: If the franchisor's knowledge is more contractible, more knowledge transfer mechanisms with a lower degree of IR are used.

H2) If the franchisor's knowledge is more noncontractible, more knowledge transfer mechanisms with a higher degree of IR are used.

4 Methodology

4.1 Sample and Data Collection

The empirical setting for testing these hypotheses is the franchising firms in Austria. We started our empirical work by first obtaining the complete list of all franchise systems in Austria from the Austrian Franchise Association (AFA) in 2000. AFA identified a total of 299 franchised systems in Austria in 2000. Hence the AFA directory provided the most comprehensive listing of franchise systems operating in Austria. After several preliminary steps in questionnaire development, including interviews with franchisors and franchise consultants and the representatives of the AFA in Salzburg, the final version of the questionnaire was sent out by mail to the general managers of the franchise systems in October 2000 and March 2001. The questionnaire took approximately 10 minutes to complete on the average. We received 83 completed responses; hence the response rate is
27.7 %. The general managers as respondents to the survey were the key informants of the franchise systems. Key informants should occupy roles that make them knowledgeable about the issues being researched (John and Reve 1982). Since the general managers as top decision makers in the franchise systems are involved in all organizational decisions (including the design of the knowledge transfer mechanisms), they were judged to be the most suitable respondents.

In implementing the survey we took several steps to ensure a good response rate, ranging from including a support letter from the president of the Austrian Franchise Association to conducting multiple follow ups with non-respondents (Fowler 1993). We examined the non-response bias by investigating whether the results obtained from analysis were driven by differences between the group of respondents and the group of non-respondents. An estimation of non-response bias was conducted by using two approaches. First, non-response bias was estimated by comparing early versus late responders (Armstrong and Overton 1977), where late responders serve as proxies for non-respondents. No significant differences emerged between the two groups of respondents. The second approach was based on a direct comparison of the respondents with the non-respondents along variables for which population statistics were available from the Austrian Franchise Association, i.e., system age, number of franchisees, royalty-rates and initial franchise fees. As shown in table 1, no significant differences between the respondents and non-respondents were observed. In sum, respondents and non-respondents seem to have come from the same population.

Insert table 1
4. 2 Measurement

To test the hypotheses the following variables are important: Information richness of knowledge transfer mechanisms, contractibility of knowledge, and control variables (see appendix).

Information Richness

Adapted from Daft and Lengel (1984) and Vickery et al. (2004), we differentiate the following knowledge transfer mechanisms in franchising (see figure 2): Face-to-face (training, meetings, visits), telephone, electronic media (emails, intra- and internet), written personal letters, written formal documents and manuals, numeric formal media (computer output). Face-to-face is the knowledge transfer mechanism with the highest information richness and numeric formal media with the lowest information richness. This hierarchy of information richness is also confirmed by empirical research (D’Ambra et al. 1998). Our research focuses on face-to-face (training, meeting, outlet visits), telephone, intra- and internet, and fax. Consistent with IR-hierarchy, we differentiate knowledge transfer mechanisms with a relatively higher degree of information richness (training, conference meetings, visits of the outlets, and phone) and knowledge transfer mechanisms with a relatively lower degree of information richness (fax, phone, intra- and internet and other electronic transfer mechanisms). Therefore, our study operationalizes information richness in accordance with Daft and Lengel’s approach.
Information richness is measured by the extent to which the franchisors use intra- and internet, fax, phone, initial and annual training, annual meetings between franchisors and franchisees and franchisors’ visits to franchisees outlets. The franchisors were asked to rate the use of these mechanisms on a seven-point scale. The higher the score, the higher is the franchisor's use of a certain mechanism. We construct indicators for lower-IR-mechanisms (LIR) like intranet, internet and fax and for higher-IR-mechanisms (HIR) like initial training for the opening of franchisees outlets, annual training, annual meetings between franchisors and franchisees, phone, and franchisors’ visits to franchisees outlets. Based on the information richness theory, we use formative indicators representing the domain of the content of HIR and LIR (Diamantopoulos and Winkelhofer 2001). Since formative indicators influence the construct, “internal consistency reliability is not an appropriate standard for evaluating the adequacy of the measures” (Jarvis, Mackenzie and Podsakoff 2003, 202; Howell 1987). This implies that dropping a causal indicator, due to low item-to-total correlations, may change the meaning by restricting the domain of the composite construct.

Knowledge Characteristics

According to the property rights theory, the knowledge characteristic relevant for the choice of knowledge transfer mechanism is contractibility. Contractibility is high when the system knowledge is explicit and hence codifiable, and noncontractibility is high when the knowledge is tacit and embedded in organizational routines. As Winter (1987) and Teece

Insert figure 2
(1985) point out, transfer of tacit knowledge, if possible at all, requires teaching, demonstration and participation. For instance, if the system knowledge of the franchisor cannot be taught, the franchisees cannot acquire and apply the requisite knowledge to efficiently manage the local outlets. Hence the more noncontractible system-specific knowledge is used in the franchise network, the more teachable must be the knowledge in order to successfully transfer it from the franchisor to the franchisees. Consequently, contractibility consists of two facets: codifiability and teachability of knowledge. Codifiability is positively related with the use of more contractible system-specific knowledge, and teachability is positively related with the use of more noncontractible system-specific knowledge in the network. We use codifiability (COD) as a measure for contractible knowledge and teachability (TEACH) as a measure for noncontractible knowledge. Adapted from Zander and Kogut (1995), we use a battery of five items to operationalize codifiability and teachability of system-specific knowledge. We conducted a factor analysis to check for their dimensionality. As can be seen in table 2, the five items load on two factors referring to codifiability and teachability. The two factors capture 62% of the variance and meet the general criteria for factor retention (Hair et al. 1998). Boxed loading shows the items utilized for the creation of factor scores (see table 2).

Insert Table 2

Control Variables

Sector (SEC): We include a sectoral variable to control for sectoral effects, because the know-how intensity of franchising firms varies between product/distribution and
service firms (Zeithaml et al. 1985). 0 refers to product and distribution franchising and 1 to the service sector. Since the firms in the service sector are characterized by a higher fraction of noncontractible system-specific knowledge compared to the product franchising firms, franchisors in the service sector should use relatively more high-IR mechanisms compared to product and distribution franchising firms.

**Multi-unit Franchising (MULTI):** MULTI measures the impact of multi-unit franchising on the use of knowledge transfer mechanisms between the franchisor and the franchisees. Multi-unit franchising enables the franchisor to delegate to the multi-unit franchisees some tasks concerning the transfer of system knowledge between the local units of the franchisees’ multi-unit networks. This requires a lower knowledge transfer capacity at the franchisor’s headquarters. Consequently, the more multi-unit franchisees exist in a system, the lower is the knowledge transfer requirement between the headquarters and franchisees, and hence the less knowledge transfer mechanisms are used between the franchisor and the franchisees.

**Existence of the Franchise Company (AGE):** AGE (measured by the number of years since the opening of the first franchise outlet in Austria) is a proxy for interorganizational learning and trust building in the network. (a) The older the franchise company, the more the franchisor can learn about the application of system-specific know how at the local markets, the higher is the tendency toward standardization of the system-know how, due to the knowledge conversion effect from more tacit to more explicit knowledge (Nonaka 1994; Inkpen 2000), and the less HIR- and the more LIR-knowledge transfer mechanisms are used. (b) In addition, AGE is an indicator for the existence of knowledge-based trust in the system (Gulati 1995; Dyer, Chu 2000). Under the relational
view of governance (Macneil 1981; Zaheer, Venkatraman 1995; Dyer, Singh 1998; Poppo, Zenger 2002; Gulati, Nickerson 2007), trust is a substitute for the use of formal knowledge transfer mechanisms. In other word, the franchisors are likely to use less formal knowledge transfer mechanisms when trust exists between the partners in the network. This is also compatible with Mohr and Nevin’s communication model (Mohr, Nevin 1990).

5 Results

5.1 Descriptive Data

Table 3 and 4 as well as figure 3 and 4 present descriptive data for the sample in Austria. First, we ask the question, which knowledge transfer mechanisms are used by the 83 franchising firms in Austria. Figure 3 shows the percentage of franchising firms that use the following mechanisms: Personal contacts (89 %), partner meetings (84 %), postal mailings (77 %), telephone (69 %), fax (62 %), seminars (56 %), internet (56 %), conferences, which provide a forum for exchange of experience between franchisors and franchisees (50 %) and intranet (36 %). Figure 4 shows that the system knowledge of the franchisor is primarily transferred by using higher-IR-mechanisms, such as training, meetings between franchisor and franchisee and visits. Lower-IR-mechanisms are less important for the transfer of system-specific knowledge to the franchisees.

Insert table 3 and 4
Insert Figure 3 and 4

5.2 Test of Hypotheses
To test the hypotheses 1 and 2 we carry out a regression analysis. We conduct an OLS regression analysis with HIR and LIR as dependent variable measuring the extent of the use of higher-IR-mechanisms and lower-IR-mechanisms. HIR refers to the use of meetings between the franchisor and the franchisees, initial and annual trainings, phone and franchisor visits, and lower-IR-mechanisms (LIR) refers to the use of intranet, internet, fax. The franchisors were asked to rate the use of higher-IR- and lower-IR-mechanisms (HIR, LIR) on a seven-point scale. By averaging the scale values we constructed HIR- and LIR-indicators. The explanatory variables refer to codifiability of knowledge (COD), teachability of knowledge (TEACH), age of the franchise system in Austria (AGE), multi-unit franchising (MULTI) and the sectoral variable (SEC). Table 5 presents the correlations of the variables used in the regression analysis. In addition, the variance inflation factors are well below the rule-of-thumb cut-off of 10 (Neter et. al. 1985). In sum, we do not find any collinearity indication.

Insert table 5

(1) Hypothesis 1: Higher-IR-Mechanisms

We estimate the following regression equation:

\[
\text{HIR} = \alpha + \beta_1 \text{TEACH} + \beta_2 \text{AGE} + \beta_3 \text{MULTI} + \beta_4 \text{SEC} \quad (1)
\]

Based on our property rights view, HIR varies positively with teachability (TEACH). Hence \( \beta_1 \) has a positive sign. Further, we include AGE, MULTI and SEC as control
variables. AGE results in more standardization due to the knowledge conversion effect and hence in less HIR-knowledge transfer mechanisms. In addition, knowledge-based trust varies with AGE and hence leads to less use of formal knowledge transfer mechanisms; hence \( \beta_2 \) is negative. Multi-unit franchising (MULTI) results in less HIR, due to the delegation of system knowledge transfer to the multi-unit franchisees; hence \( \beta_3 \) is negative. Since service franchising firms have a higher fraction of noncontractible system-specific knowledge, the use of higher-IR mechanisms should be higher in the service sector than in the product franchising sector; hence \( \beta_4 \) should have a positive sign. Table 6 reports the result of regression analysis for HIR. The coefficient of teachability (TEACH) is significant and consistent with our hypothesis. An increase in teachability of knowledge implies the use of more higher-IR-mechanisms. The coefficient of AGE is slightly significant indicating that, due to the knowledge conversion and trust building effect, less HIR are used. In addition, the coefficient of MULTI is negative and significant indicating that less HIR are required under multi-unit franchising. The coefficient of the sectoral variable is not significant.

Insert table 6

(2) Hypotheses 2: Lower-IR-Mechanisms

\[
LIR = \alpha + \beta_1 \text{COD} + \beta_2 \text{AGE} + \beta_3 \text{MULTI} + \beta_4 \text{SEC} \tag{2}
\]

LIR varies positively with codifiability (COD). Hence \( \beta_1 \) has a positive sign. AGE results in more standardization due to the knowledge conversion effect and hence in more
use of LIR-knowledge transfer mechanisms; hence $\beta_2$ should have a positive sign. Due to
the delegation of the system knowledge transfer to multi-unit franchisees, multi-unit
franchising (MULTI) requires less LIR; hence $\beta_3$ is negative. Since service franchising
firms have a higher fraction of noncontractible system-specific knowledge, the use of
lower-IR mechanisms should be lower in the service sector than in product franchising
sector; hence $\beta_4$ should have a negative sign. Table 7 reports the result of the regression
analysis for LIR. The coefficient of codifiability (COD) is significant and consistent with
our hypothesis. An increase in codifiability of knowledge implies the use of more lower-IR-
mechanisms. The negative but nonsignificant coefficient of MULTI indicates that multi-
unit franchising leads to less use of LIR. The coefficients of AGE and SEC are not
significant.

Insert Table 7

6 Discussion

The goal of the paper is to provide a property rights explanation on the choice of
knowledge transfer mechanisms in franchising networks. According to the property rights
view, the knowledge transfer from franchisor to franchisees is governed by more higher-IR-
mechanisms if the system knowledge is more noncontractible, and it is governed by more
lower-IR-mechanisms if the system-knowledge is more contractible. Using data from the
Austrian franchising sector, the results provide support for these hypotheses.

How does our approach extend the results in the literature? First, our property rights
theory integrates results from the information richness theory. Information richness theory
offers ‘richness’ as criterion to determine the knowledge transfer capacity of knowledge governance mechanisms. In addition, our approach is compatible with the knowledge based view of the firm because the concept of tacitness in the knowledge based theory is closely related to the concept of noncontractibility in the property rights theory. Second, the major contribution of our study is to apply this approach for the explanation of knowledge transfer mechanisms in franchising networks. Our study utilizes primary data from the Austrian franchise sector that enables the estimation of factors the theory considers to affect the choice of knowledge transfer mechanisms. We use knowledge constructs, such as teachability and codifiability, that operationalize noncontractible and contractible system knowledge. However, the measurement of the constructs is not without limitations; it is a first step to operationalize knowledge with different degrees of contractibility. In future research, case studies should complement quantitative studies in order to sharpen and refine the theoretical constructs (Ragin, Becker 1994). In addition, future empirical research in franchising should also include additional electronic knowledge transfer mechanisms (such as video technologies, electronic bulletin boards, discussion groups, corporate directories) that support all forms of knowledge transfer between franchisors and franchisees (Alavi, Leidner 2001; Andreu, Ciborra 1996).

Our findings also have practical relevance for the franchisors. Based on the property rights view, franchisors have to select knowledge transfer mechanisms according to the contractibility of the knowledge source. In order to gain competitive advantage by setting up a franchising network, low-IR-knowledge transfer mechanisms are needed to facilitate the transfer of codifiable system-specific knowledge and high-IR-knowledge transfer mechanisms are needed to facilitate the transfer of non-codifiable system knowledge.
Hence a successful franchisor has to match the knowledge transfer strategy to the information processing requirements of the different attributes of system-knowledge.

References


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<th>Higher-IR-Knowledge Transfer Mechanisms</th>
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<tr>
<td></td>
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<td>MISFIT II</td>
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<tr>
<td></td>
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<td></td>
<td>fax, intra- and internet</td>
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<td>Noncontractible Knowledge</td>
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<td>FIT II</td>
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<td></td>
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<td>Training, outlet visits, meetings, phone, video conferences</td>
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Figure 1: Relationship between Knowledge Transfer Mechanisms and Contractibility of Knowledge
### Non-Response Bias

#### Means, (Standard Deviations) & Counts

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<th>Non Respondents</th>
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<td></td>
<td>N=34</td>
<td>N=34</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age (Years)</strong></td>
<td>11.98</td>
<td>8.28</td>
<td>t = 1.418</td>
<td>0.158</td>
</tr>
<tr>
<td></td>
<td>(11.147)</td>
<td>(8.942)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N=79</td>
<td>N=122</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Number of Franchisees</strong></td>
<td>21.25</td>
<td>19.836</td>
<td>t = 0.138</td>
<td>0.890</td>
</tr>
<tr>
<td></td>
<td>(28.515)</td>
<td>(38.475)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N=79</td>
<td>N=122</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a The measures of royalty rate and initial franchise fees were first tested by a MANOVA to ensure independence of these variables. Manova was non-significant (Wilks’ Lambda = 0.974, p = 0.465.

*b Counts differ across different measures because of item non-responses.

---

**Table 1: Estimate of Non-Response Bias**
<table>
<thead>
<tr>
<th>Communication Medium</th>
<th>Increasing Information Richness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face-to-Face (training, meetings, visits)</td>
<td></td>
</tr>
<tr>
<td>Telephone</td>
<td></td>
</tr>
<tr>
<td>Electronic (email, intra- and internet)</td>
<td></td>
</tr>
<tr>
<td>Written personal (letters, fax)</td>
<td></td>
</tr>
<tr>
<td>Written formal (documents, manuals)</td>
<td></td>
</tr>
<tr>
<td>Numeric formal (accounting data)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Adapted from Daft and Lengel (1984) and Vickery et al. (2004).

**Figure 2: Information Richness of Knowledge Transfer Mechanisms**
Knowledge Characteristics

COD 1 Large parts of the business processes between the headquarters and the outlets can be carried out by using information technology.

COD 2 We have an extensive written documentation describing critical parts of the business processes in the franchise system.

TEACH 1 Franchisees can easily learn the main procedures and activities through personal support and personal discussion with the franchisor and its employees.

TEACH 2 Franchisees can easily learn the main procedures and activities by reading the franchisor’s handbook.

TEACH 3 Training of franchisees is a fast and easy task.

<table>
<thead>
<tr>
<th>Knowledge Characteristics</th>
<th>Varimax rotated factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Factor 1 (Codifiability)</td>
</tr>
<tr>
<td>COD 1</td>
<td>0.763</td>
</tr>
<tr>
<td>COD 2</td>
<td>0.789</td>
</tr>
<tr>
<td>TEACH 1</td>
<td>0.433</td>
</tr>
<tr>
<td>TEACH 2</td>
<td>0.179</td>
</tr>
<tr>
<td>TEACH 3</td>
<td>-0.378</td>
</tr>
</tbody>
</table>

Eigenvalues                  1.812        1.285
Cum. Variance Explained (%)   31.35        61.93

*The scales were anchored with 1, strongly disagree; 5, strongly agree (see appendix).

Factor analysis resulted in two factors with eigenvalues larger than 1.0. Boxed loadings show items utilized in naming the two factors.

Table 2: Factor analysis
| Table 3: Characteristics of the franchise systems (based on the survey of the Austrian Franchise Association 2001) |
|---|---|---|---|---|
| Sector - 0: Product and Distribution; 1: Services | N | Minimum | Maximum | Mean | Std. Deviation |
| | 83 | 0 | 1 | .59 | .50 |
| Number of Outlets | 82 | 2.00 | 172.00 | 28.06 | 34.35 |
| Age of the Franchise System in Austria | 79 | 1.00 | 78.00 | 11.99 | 11.15 |
| Number of Franchisees | 79 | 1 | 159 | 21.25 | 28.52 |
| Percentage of Franchised Outlets | 79 | 14.53 | 99.38 | 71.97 | 24.80 |

| Table 4: Knowledge transfer modes and knowledge characteristics |
|---|---|---|---|---|
| Intra- and Internet | Minimum | Maximum | Mean | Std. Deviation |
| | 1 | 7 | 4.00 | 2.295 |
| Fax | 1 | 7 | 4.22 | 1.976 |
| Phone | 1 | 7 | 5.20 | 1.591 |
| Initial Training | 1 | 7 | 6.42 | 1.298 |
| Annual Training | 1 | 7 | 5.22 | 1.506 |
| Conference Meetings | 1 | 7 | 5.66 | 1.618 |
| Franchisors' Outlet Visits | 1 | 7 | 5.84 | 1.384 |
| COD1 | 1 | 5 | 3.80 | 1.187 |
| COD2 | 1 | 5 | 3.39 | 1.386 |
| TEACH1 | 2 | 5 | 4.58 | 0.683 |
| TEACH2 | 1 | 5 | 3.78 | 1.169 |
| TEACH3 | 1 | 5 | 2.88 | 1.141 |
| COD | 1 | 5 | 3.58 | 1.089 |
| TEACH | 1.67 | 5 | 3.75 | 0.718 |

Table 4: Knowledge transfer modes and knowledge characteristics
Figure 3: Information transfer between franchisors and franchisees in Austria
Figure 4: Transfer of System Know-how
<table>
<thead>
<tr>
<th></th>
<th>TEACH</th>
<th>COD</th>
<th>MULTI</th>
<th>AGE</th>
<th>SEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEACH</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COD</td>
<td>.202</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULTI</td>
<td>.063</td>
<td>-.263</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGE</td>
<td>.020</td>
<td>-.045</td>
<td>.158</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>SEC</td>
<td>.140</td>
<td>.163</td>
<td>-.043</td>
<td>-.050</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Table 5: Correlation
### Table 6: Regression results for HIR

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>6.094***</td>
<td>(0.167)</td>
</tr>
<tr>
<td>TEACH</td>
<td>0.268***</td>
<td>(0.088)</td>
</tr>
<tr>
<td>AGE</td>
<td>-0.013*</td>
<td>(0.007)</td>
</tr>
<tr>
<td>MULTI</td>
<td>-0.412**</td>
<td>(0.164)</td>
</tr>
<tr>
<td>SEC</td>
<td>-0.060</td>
<td>(0.166)</td>
</tr>
</tbody>
</table>

F = 5.09  
R Square = 0.22  
N = 75

*** p < 0.01; ** p < 0.05; *p < 0.1; values in parentheses are standard errors.

### Table 7: Regression results for LIR

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>4.428***</td>
<td>(0.396)</td>
</tr>
<tr>
<td>COD</td>
<td>0.704***</td>
<td>(0.193)</td>
</tr>
<tr>
<td>AGE</td>
<td>0.012</td>
<td>(0.016)</td>
</tr>
<tr>
<td>MULTI</td>
<td>-0.593</td>
<td>(0.373)</td>
</tr>
<tr>
<td>SEC</td>
<td>-0.363</td>
<td>(0.368)</td>
</tr>
</tbody>
</table>

F = 4.89  
R Square = 0.22  
N = 75

*** p < 0.01; ** p < 0.05; *p < 0.1; values in parentheses are standard errors.
## APPENDIX: MEASURES OF VARIABLES

| Lower-IR-Knowledge Transfer Mechanisms (LIR) | To which extent does the franchisor use knowledge transfer mechanisms with a lower degree of IR: (Intra- and internet, fax) (1, no extent; … 7, to a very large extent) |
| Higher-IR-Knowledge Transfer Mechanisms (HIR) | To which extent does the franchisor use knowledge transfer mechanisms with a higher degree of IR: (Telephone, initial and annual training, conference meetings between franchisor and franchisees, outlet visits) (1, no extent; … 7, to a very large extent) |
| Codifiability (COD) | The franchisor has to evaluate codifiability on a 5 point scale (1, strongly disagree; … 5, strongly agree): COD1: Large parts of the business processes between the headquarters and the outlets can be carried out by using information technology. COD2: We have an extensive written documentation describing critical parts of the business processes in the franchise system. |
| Teachability (TEACH) | The franchisor has to evaluate teachability on a 5 point scale: TEACH1: Franchisees can easily learn the main procedures and activities through personal support and personal discussion with the employees of the franchisor. TEACH 2: Franchisees can easily learn the procedures and activities by reading the franchisor’s handbook. TEACH 3 Training of franchisees is a fast and easy task. |
| Multi-unit Franchising (MULTI) | Dummy variable: 0 refers to single-unit and 1 to multi-unit franchising systems. |
| Years of Existence of the Franchise System (AGE) | Number of years since opening the first franchise outlet in Austria. |
| Sector (SEC) | 0: Product and distribution franchising; 1: Service franchising |