

An organizational capability perspective on multi-unit franchising

Evidence from Germany and Switzerland

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Abstract Previous research on multi-unit franchising (MUF) has primarily focused on agency and transaction cost perspectives. The present study develops and tests an organizational capability (OC) model of the franchisor's choice of MUF. According to the OC view, the franchisor gains a competitive advantage by exploration and exploitation of firm-specific resources and capabilities. We hypothesize that, if the franchisor expects to obtain a competitive advantage resulting from higher exploration and exploitation capabilities when using MUF as opposed to single-unit franchising, the franchisor will more likely choose MUF as a governance mode of the franchise system. Based on empirical data from the German and Swiss franchise sectors, the results of the regression analysis support these hypotheses. Our main contribution to the franchise literature is the development of an OC model of the franchisor's choice of MUF that complements the existing organizational economics explanation of MUF.

Keywords Multi-unit franchising · Organizational capabilities · Exploration capabilities · Exploitation capabilities · Transaction costs

JEL classification L14 · M21 · D23

1 Introduction

The emergence of multi-unit franchising (MUF) is an important driver of the recent growth of the franchising businesses (Gillis et al. 2011; Dant et al. 2013). Specifically, in international franchising, MUF is one of the most important expansion strategies employed. If a franchisor sets up a franchise system, he or she must choose between two different franchise governance modes: single-unit franchising (SUF) and MUF. Under MUF, a franchisee owns two or more outlets in the same franchise system.

Previous research on MUF has primarily focused on agency and transaction cost perspectives to explain this form of governance. Agency theory argues that the franchisor can address adverse selection, moral-hazard and free-riding problems in a more efficient way by using MUF compared with SUF (Bercovitz 2004; Garg et al. 2013; Garg and Rasheed 2003, 2006; Gillis et al. 2011; Gomez et al. 2010; Jindal 2011; Kalnins and Lafontaine 2004; Kalnins and Mayer 2004; Perryman and Combs 2012; Weaven 2009; Weaven and Frazer 2007a). For instance, MUF can be explained from moral-hazard and adverse-selection perspectives in which MUF is seen as an incentive mechanism to reduce

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agency problems (Gomez et al. 2010). MUF shifts the responsibility and the burden of monitoring to multi-unit franchisees, who have a higher motivation to minimize monitoring costs compared with company-employed monitors, which leads to a reduction in costs for the franchisor's internal hierarchy (Jindal 2011). In addition, geographical contiguity of franchised units is an important factor in explaining a franchisor's use of MUF in combination with company-owned units (Perryman and Combs 2012). The likelihood of using a higher proportion of MUF increases in franchise systems that have geographically concentrated units. This becomes even more important when the franchise system has a strong brand name (Bercovitz 2004; Brickley 1999; Kalnins and Lafontaine 2004; Vázquez 2008). Another branch of the franchising literature applies transaction cost theory to explain a franchisor's use of MUF. Transaction cost theory argues that both environmental and behavioral uncertainty and transaction-specific investments influence the franchisor's choice between MUF and SUF. Under high environmental uncertainty, single-unit franchisees can better exploit local market opportunities due to their higher entrepreneurial orientation (Hussain and Windsperger 2015). Conversely, behavioral uncertainty increases the franchisor's tendency towards MUF because behavioral uncertainty results in fewer contractual relationships to manage, which mitigates the performance-measurement problems in local markets. High transaction-specific investments have a positive impact on the proportion of MUF because they create a strong bonding effect and result in economies of scale (Hussain et al. 2013). Thus, to summarise, both agency theory and transaction cost theory explain the franchisor's use of MUF as a governance form that helps reduce agency and transaction costs.

Combs et al. (2004) and Dant et al. (2011) have called for going beyond the use of traditional theories in the investigation of various organizational phenomena in franchising. While the control and incentive functions of the franchise firm's governance structure are frequently examined in agency and transaction cost theory, its value-creation function is widely underexplored in the franchise literature. We try to close this gap here by applying organizational capability (OC) theory to explain the franchisor's use of MUF. The OC perspective regards the firm as a bundle of resources and organizational capabilities to achieve a competitive advantage (i.e. to gain strategic rents) (Amit and

Schoemaker 1993; Grant 1996; Rumelt 1984). According to the OC view, the firm can obtain a competitive advantage by exploration and exploitation of firm-specific resources and capabilities (Barney 1991; Madhok 1998; Pitelis and Teece 2009, 2014; Teece et al. 1997). Applied to franchising, we argue that the franchisor's propensity to use MUF correlates positively with advantages gained from the franchise system's exploration and exploitation capabilities under MUF as opposed to SUF. Hence, a franchisor's choice of governance structure between MUF and SUF plays an important role in creating a franchise firm's competitive advantage. Overall, the main contribution of this study is to develop an OC perspective of the franchisor's use of MUF that complements the organizational economics explanation of MUF. Based on data from the German and Swiss franchise sectors, the results of a regression analysis support the OC hypotheses.

This paper is organized as follows: Section 2 presents the theoretical framework and the hypotheses, Sections 3 and 4 provide the empirical analysis, Section 5 discusses the results and concludes the paper.

2 Theory and hypotheses

Organizational capabilities consist of exploration and exploitation capabilities. According to the OC view, organizational capabilities influence the rent-generating potential of a firm's governance structure (Ekeledo and Sivakumar 2004; Helfat et al. 2007; Madhok 1997; Zhao et al. 2014). The OC perspective is rooted in the resource-based view of the firm (Barney 1991; Pisano 2015; Wernerfelt 1984), which explains how firms gain competitive advantage by creating, deploying and redeploying resources and capabilities in a dynamic business environment (Arend 2014; Rumelt 1984; Teece et al. 1997; Teece 2014). Organizational capabilities refer to competencies and organizational routines that enable a firm to explore and exploit new knowledge to gain a competitive advantage (Teece 2007; Teece et al. 1997). More specifically, they refer to the firm's capabilities of covering the whole range of value-chain activities (Porter 1985), such as procurement, production, marketing, human resources management, distribution, coordination, control and innovation capabilities, which are embedded within the firm's employees, routines and organizational processes (Parmigiani and Howard-Grenville 2011; Teece 2012; Sreckovic 2017).

Applied to franchising, we differentiate between two types of organizational capabilities of a franchise system: *exploitation* capabilities and *exploration* capabilities. Exploitation capabilities refer to the franchisor's efficient exploitation of knowledge, whereas exploration capabilities refer to the creation of new knowledge (i.e. innovation capabilities). In the following section, we examine how exploitation and exploration capabilities affect the franchisor's choice between SUF and MUF. Our research model is summarised as follows (see Fig. 1): we argue that the franchisor will more likely choose MUF as a governance mode of the franchise system if he/she expects to obtain a competitive advantage due to exploration and exploitation capabilities advantages when using MUF as opposed to SUF.

2.1 Exploitation capabilities

The franchise firm's exploitation capabilities include knowledge transfer capabilities, human resources management capabilities and monitoring and coordination capabilities (Hussain and Windsperger 2010). A franchisor's use of MUF results in higher monitoring capabilities of the franchise system because the franchisor can delegate some coordination tasks to the local franchisees, who in turn are able to realize economies of scale in monitoring and coordinating their mini-chains. In addition, compared with single-unit franchisees, multi-unit franchisees have an advantage in replicating the organizational procedures and routines used by the franchisor in their mini-chains. Furthermore, a franchise system can also realize higher knowledge-transfer capabilities under MUF because the franchisor can

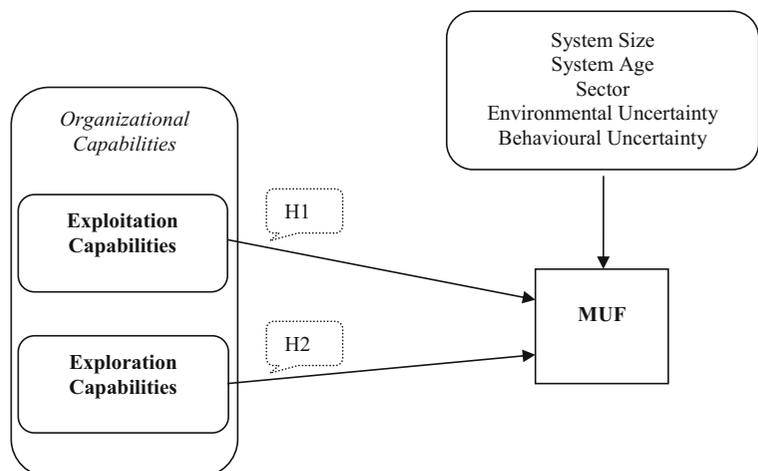
decentralize some knowledge-transfer and training-related tasks to multi-unit franchisees. As the difficulty increases of transferring system knowhow from headquarters to franchisees, a higher knowledge transfer capability becomes necessary for efficient knowledge transfer (Erramilli et al. 2002). Consequently, we argue that franchisors will more likely choose MUF as the governance structure of the franchise system if they perceive higher advantages from exploitation capabilities (including higher knowledge transfer, monitoring and coordination capabilities) compared with SUF. Hence, we formulate the following hypothesis:

Hypothesis 1: Greater advantages for the franchise system from exploitation capabilities under MUF compared with SUF lead to a higher probability that the franchisor will choose MUF as a governance form.

2.2 Exploration capabilities

Exploration capabilities refer to the innovation capabilities of the franchise network (Bradach 1995; March 1991; Pisano 2015; Schilke 2014; Teece et al. 1997). Specifically, these include capabilities regarding the development of new business processes and organizational routines, skills, products and services, which improve the franchisor's knowledge base to gain a competitive advantage (i.e. strategic rents) (Shumway 2001; Sorenson and Sørensen 2001). A franchisor's use of MUF increases a franchise system's innovation capabilities because it enables the franchisor to create and

Fig. 1 Research model



introduce new ideas in their mini-chain and, subsequently, to implement these innovations throughout the entire franchise network. In addition, a franchisor's use of MUF results in higher capabilities to improve the organizational routines and procedures regarding human resources management (recruiting and training) and quality control. Furthermore, because multi-unit franchisees possess a greater fraction of decision rights within the franchise network compared with single-unit franchisees, MUF will increase the franchisee's incentive for innovation (i.e. implementing new products and/or business processes). These stronger incentives at the mini-chain level increase the exploration capabilities of the franchise system. Thus, we propose the following hypothesis:

Hypothesis 2: Greater advantages for the franchise system from exploration capabilities under MUF compared with SUF lead to a higher probability that the franchisor will choose MUF as a governance form.

3 Methodology

3.1 Data collection

We collected data from franchisors in Germany and Switzerland. The German Franchise Federation (DFV) publishes an annual directory of franchise systems in Germany, Switzerland and Austria. In addition, further data on franchise systems are published in the *Franchise Wirtschaft*, which is a directory similar to *Bond's Franchise Guide* in the USA. This directory provides some basic information about the franchise systems and includes, for example, business sectors, total number of outlets in each country and year each system was established. We identified 1127 franchise systems operating in Switzerland and Germany. After applying judgmental sampling, we selected the systems having at least five outlets. We did not consider systems with less than five outlets to be relevant to MUF, which left us with 666 franchise systems, all with five or more outlets.

We used self-administered questionnaires that were developed in several steps to collect the data. After making several refinements to the preliminary questionnaires, several in-depth interviews were conducted with franchise professionals from the German and Austrian

franchise associations. Later, we performed a pre-test with 20 franchisors. The key informant approach was used to collect data for this study (McKendall and Wagner 1997). In this approach, the respondents are selected based on their expertise and relevance to the subject under investigation. Accordingly, senior managers who directly manage franchise operations and are responsible for franchise expansion acted as key informants. The contact details of the key informants to whom we mailed the questionnaires were obtained from 'Franchise Wirtschaft'. In addition, an online version of the questionnaire was used. Finally, we collected 167 completed questionnaires, which give a response rate of 25%.

We estimated non-response bias by comparing early and late respondents (Armstrong and Overton 1977) but found no significant difference between the two groups. Furthermore, the respondents were also compared regarding age, size, advertising fees and royalties to determine whether non-response was a problem (these variables were available in the *Franchise Wirtschaft*). We found no significant difference between the respondents and the non-respondents. Furthermore, based on Podsakoff et al. (2003), we used Harman's single-factor test to examine whether the data suffered from a significant common method variance. We conducted a factor analysis on all items and extracted more than one factor with eigenvalues greater than unity. As a result, we are confident that common method variance poses no problem for this study.

3.2 Measurement

3.2.1 Dependent variable

Tendency towards multi-unit franchising Compatible with previous studies (Gomez et al. 2010; Hussain and Windsperger 2013; Weaven and Frazer 2004), MUF is calculated by dividing the number of franchised outlets by the number of franchisees in the franchise system.

3.2.2 Predictor variables

A franchise system's organizational capabilities consist of exploration and exploitation capabilities (see Table 1; Appendix).

Exploitation capabilities We use a three-item 7-point Likert scale to measure exploitation capabilities

Table 1 Factor analysis

Exploration and exploitation capabilities	Factors*	
	EXPLR	EXPLT
MUF, compared with SUF, has organizational innovation advantages.	0.554	
MUF, compared with SUF, has product innovation advantages.	0.999	
MUF, compared with SUF, has advantages regarding efficient knowhow transfer between the headquarters and the outlets.		0.823
MUF, compared with SUF, has advantages regarding better coordination between the headquarters and the outlets.		0.905
MUF, compared with SUF, has advantages regarding monitoring of outlets.		0.587

*Coefficient values below 0.4 not listed

(EXPLT). The franchisors were asked to assess the franchise chain's advantages in terms of knowledge transfer, coordination and monitoring when using MUF as opposed to SUF. Cronbach's alpha for this variable is 0.865.

Exploration capabilities We use a two-item 7-point Likert scale to measure exploration capabilities (EXPLR). The franchisors were asked to assess the franchise chain's advantages in terms of product innovation and organizational innovation when using MUF as opposed to SUF. Cronbach's alpha for this variable is 0.704. Table 1 summarizes the measurements of exploitation and exploration capabilities.

3.2.3 Control variables

Environmental uncertainty A three-item 7-point Likert scale is used to measure environmental uncertainty (ENV). The items are based on measurement scales used by Celly and Frazier (1996) and John and Weitz (1988). The franchisors were asked to rate the fluctuations in outlet sales, volatility of the local economy and unpredictability of the local market. Cronbach's alpha for this variable is 0.738. According to the adaptation view of organization (Williamson 1991), higher environmental uncertainty requires greater local responsiveness, which is achieved by delegating some coordination tasks to local entrepreneurs. If we apply this reasoning to franchising, we expect franchisors to use more single-unit franchisees because

franchisees who manage their own outlets have a stronger entrepreneurial orientation compared with outlet managers of mini-chains, and franchisees react more quickly to changes in the local market. Therefore, we expect ENV to correlate negatively with MUF.

Behavioral uncertainty Based on previous research (Anderson 1985; John and Weitz 1989), a three-item Likert scale is used to measure behavioral uncertainty (BEHAV). Franchisors were asked to give their perceptions regarding the difficulty to assess the competencies and capabilities of outlet managers, to measure performance and to control behavior (of the franchisee or company-owned manager). Cronbach's alpha for this variable is 0.720. Behavioral uncertainty arises from the inability of a firm to measure performance and to control the behavior of economic agents. The firm must therefore develop control mechanisms to reduce behavioral uncertainty (Klein et al. 1990; Williamson 1985). In a franchise setting, MUF enables the franchisor to exercise a higher degree of control compared with SUF because the franchisor must monitor and control only few multi-unit franchisees, which increases the franchisor's monitoring effectiveness. Thus, we expect behavioral uncertainty to correlate positively with MUF.

System size Consistent with the previous studies on MUF, the total number of outlets (franchised outlets plus company-owned outlets) was used as a proxy for system size (Gomez et al. 2010). Larger systems have a positive reputation effect and signal success and higher performance, so prospective multi-unit franchisees may find larger systems more attractive compared with smaller systems. Previous research has also shown that system size may have a positive effect on the use of MUF (Vázquez 2008; Weaven and Frazer 2007b; Weaven and Herington 2007).

Sector We used "0" for product franchising and "1" for services franchising. Previous research also suggests that the use of MUF may vary with business sector and industry (see, e.g. Dant and Grünhagen 2014; Wadsworth and Morgan 2003). Franchising firms in the service sector typically have greater intangible system-specific resources, so the transfer of system-specific knowhow requires higher capabilities. Therefore, MUF could be more prevalent in service industries than in product franchising.

Age We measured age by the number of years that the franchise system has been franchising in Switzerland or Germany. Age can be seen as a proxy for franchisee experience with the franchise system. Thus, older systems may be more attractive for prospective multi-unit franchisees, and we expect a positive correlation between age and MUF. Previous research also shows a positive correlation between system age and the use of MUF (Weaven 2009; Weaven and Frazer 2007b).

4 Results

We tested our dataset for multicollinearity by using variance inflation factors and a multicollinearity tolerance test. Our maximum variance inflation factors are well below the cutoff of 4.00, and the multicollinearity tolerance is well above the cutoff of 0.20 (O'Brien 2007). The data were also checked for heteroscedasticity. The results of this analysis show that multicollinearity and heteroscedasticity have no significant effect on the data. Table 2 presents the descriptive statistics and correlations.

Ordinary least squares regression analysis is employed to test the proposed research model (see Fig. 1). The dependent variable is *tendency towards MUF*. As predictor variables, we use the franchise system's EXPLT and EXPLR advantages obtained when the franchisor uses MUF as opposed to SUF. In addition, the transaction cost variables—ENV, BEHAV, system size measured by the total number of outlets (LnSIZE), age of system (LnAGE) and sector (SECT)—are included in the model as control variables.

We estimate the following regression equation for testing the hypotheses:

$$\begin{aligned} \text{MUF} = & \alpha_0 + \alpha_1 \text{EXPLT} + \alpha_2 \text{EXPLR} + \alpha_3 \text{ENV} \\ & + \alpha_4 \text{BEHAV} + \alpha_5 \text{LnAGE} + \alpha_7 \text{LnSIZE} \\ & + \alpha_6 \text{SECT} + \varepsilon \end{aligned}$$

Several important concerns may arise about multiple regression analysis and the validation of results obtained (Woodside 2013). For example, the goodness of fit does not account for the predictive validity of the model, and using it as the sole indicator of the strength of model may lead to invalid conclusions. To address such concerns, we bootstrapped our model. Bootstrapping is a method for cross-validation of findings and, taking a large number of replacement samples based on the original sample, performs multiple regression for each sample to estimate the correct parameters (Efron 1983; Griessmair et al. 2014; Harrell et al. 1996). We thus cross-validated our model by using 1000 repetitions. Table 3 presents the results.

Based on the OC theory, we hypothesise that the advantages of a franchise system's EXPLT and EXPLR when using MUF increase the probability that franchisors will use MUF. The regression results are presented in Table 3. Model 1 includes only the control variables (i.e. LnAGE, LnSIZE, SECT, ENV and BEHAV). Models 2, 3 and 4 include the OC theory variables (EXPLT and EXPLR) with and without the transaction cost variables. The data support both hypotheses H1 and H2 concerning the positive impact of the advantages of a franchise system's exploration and exploitation capabilities under MUF on the franchisor's

Table 2 Descriptive statistics

Variable	Mean	SD	N ^a	Correlations							
				1	2	3	4	5	6	7	
1. MUF	1.503	0.987	144	1							
2. LnAGE	11.122	8.456	147	0.212**	1						
3. LnSIZE	134.694	301.186	147	0.082	0.403***	1					
4. ENV	3.667	1.380	158	-0.321***	0.085	0.033	1				
5. BEHAV	3.574	1.311	158	0.185**	0.145*	0.043	0.101	1			
6. EXPLR	4.245	1.171	161	0.279***	-0.009	-0.226	-0.141	-0.014	1		
7. EXPLT	4.471	1.450	165	0.222***	-0.043	-0.129	-0.248***	0.070	0.403***	1	

^a N varies across variables due to item non-response

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

Table 3 OLS regression

	Model 1	Model 2	Model 3	Model 4	Model 5
Variable					
Constant	1.040*** (0.467)	-0.844 (0.518)	0.844 (0.597)	-0.292 (0.606)	-0.292 (0.525)
LnAGE	0.134 (0.097)	0.159 (0.101)	0.159** (0.077)	0.116 (0.098)	0.116 (0.076)
LnSIZE	0.114** (0.059)	0.129** (0.064)	0.129* (0.068)	0.140** (0.061)	0.140** (0.061)
SECT	0.077 (0.165)	-0.124 (0.172)	0.124 (0.159)	-0.092 (0.164)	0.092 (0.153)
ENV	-0.230*** (0.056)	-	-	-0.191*** (0.058)	-0.191*** (0.076)
BEHAV	0.134** (0.061)	-	-	0.139** (0.061)	0.139* (0.077)
EXPLR	-	0.199*** (0.075)	0.199** (0.082)	0.202*** (0.072)	0.202*** (0.079)
EXPLT	-	0.111* (0.063)	0.111* (0.068)	0.051 (0.062)	0.051 (0.065)
Model summary					
N^a	139	134	134	134	134
Model F	6.970***	6.010***	-	6.980***	-
R^2	0.208	0.190	0.190	0.279	0.279
Adjusted R^2	0.178	0.159	0.159	0.239	0.239
RSME	0.897	0.920	0.920	0.875	0.8751
Wald χ^2	-	-	19.260	-	26.520
Prob $>\chi^2$	-	-	0.001	-	0.000

Dependent variable = MUF. Values in parentheses represent standard errors

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

^a N varies across models due to item non-response; models 3 and 5 are bootstrapped with 1000 repetitions

choice of MUF over SUF. However, the empirical support of H1 is relatively weak. In addition, the data also support the impact of the transaction cost variables on MUF (i.e. the negative effect of ENV and the positive effect of BEHAV on the franchisor's tendency to choose MUF). Furthermore, size (i.e. total number of outlets) exerts a significant positive effect on the franchisor's choice of MUF.

5 Discussion and implications

The aim of this study is to develop an OC view of MUF. Our study complements the perspective of organizational economics on MUF (see, e.g. Hussain et al. 2013), which is mainly based on agency and transaction cost theory. According to agency and transaction cost theory, franchisors choose MUF to mitigate exchange risk due to behavioral uncertainty and transaction-specific investments. Conversely, OC theory focuses on the franchise firm's higher potential for value creation via exploration and exploitation capabilities with MUF than with SUF. Therefore, to choose the right governance

structure, the franchisor must consider both the agency and transaction cost effects of behavioral and environmental uncertainty in addition to the value-creation effect of organizational capabilities.

Based on empirical data from the German and Swiss franchise sectors, we show that the franchisor's propensity to use MUF is positively correlated with the advantages of the franchise system regarding exploitation capabilities and exploration capabilities (innovation capabilities) compared with using SUF. First, MUF systems will be chosen to obtain higher exploitation capabilities (i.e. knowledge-transfer, coordination and monitoring capabilities). In particular, decentralisation of knowhow transfer and local coordination tasks to the mini-chains results in increased knowledge transfer and monitoring capabilities of the franchise system, thereby enabling economies of scale for monitoring and coordination of their mini-chains. Second, the franchisor will choose MUF systems to obtain higher innovation capabilities, such as capabilities to develop new products, organizational procedures and business models. Specifically, new products and organizational procedures can be developed and tested at the

mini-chain level and subsequently transferred to the whole system. However, the results show that exploitation capabilities are more important than exploitation capabilities for the franchisor's choice of MUF. Consequently, we conclude that the franchisor will choose a franchise system with a higher proportion of MUF if the franchisor expects to obtain a competitive advantage from higher organizational capabilities (in particular, higher innovation capabilities).

Furthermore, the results also support the transaction cost view of MUF. Environmental (behavioral) uncertainty has a negative (positive) influence on the franchisor's tendency towards MUF. In highly uncertain local markets, the franchisor is more likely to use SUF because more entrepreneurial orientation is needed to adapt to changes in local markets. Conversely, MUF may mitigate the franchisor's performance measurement problems due to opportunism risk because, under MUF, the franchisor can reduce the contractual span of control by decreasing the number of contractual relations between headquarters and franchisees. These findings are consistent with the results of previous studies (Hussain et al. 2013). Moreover, system size has a positive impact on a franchisor's use of MUF, which is also consistent with previous results (Gomez et al. 2010; Vázquez 2008).

Our main contribution to the franchise literature is thus to develop and test an OC model of the franchisor's choice between MUF and SUF that complements the existing explanation of MUF based on organizational economics. Furthermore, this study contributes to the literature on the relationship between OC theory and transaction cost theory for the explanation of governance of inter-organizational networks (see, e.g. Combs and Ketchen 1999; Gillis et al. 2014; Mayer and Salomon 2006). Organizational capability theory argues that increasing a franchise system's competitive advantage is the primary explanation for a positive correlation between organizational capabilities and the franchisor's use of a multi-unit ownership strategy, whereas transaction cost theory focuses on the franchisor's transaction cost savings of using MUF as a governance form under given firm-specific capabilities (Williamson 1999).

The findings reported herein offer insights into the franchisor's choice between MUF and SUF. The results indicate that the franchisor should choose a higher proportion of multi-unit franchisees if he/she expects to realize higher exploration (i.e. innovation) capabilities

and exploitation capabilities (i.e. knowledge transfer, coordination and monitoring capabilities) under MUF than under SUF.

Note that this research is not without limitations. A major limitation of the OC literature is the conceptualization and measurement of organizational capabilities (see, e.g. Danneels 2016; Erramilli et al. 2002; Grant and Verona 2015; Helfat et al. 2007; Teece 2014). In the empirical study, we measured exploitation and exploration capabilities of franchise systems from the franchisor's perspective. Future research may examine the importance of exploration and exploitation capabilities of MUF from the perspective of a multi-unit franchisee. Second, although our model based on OC theory and the perspective of organizational economics explains almost 28% of the variance of our dependent variable (i.e. multi-unit ownership), other factors could also influence the franchisor's use of MUF. For instance, the choice of MUF may be influenced by the bargaining power of the franchisor relative to their franchisees (Cliquet and Pénard 2012; Michael 2000; Porter 1980). Therefore, future research should examine the impact of bargaining power of the network partners on the tendency towards MUF.

In addition, future research may investigate other aspects of MUF, such as examining how MUF influences the allocation of ownership and decision rights in franchising networks (Fama and Jensen 1983). Compared with single-unit franchisees, multi-unit franchisees typically have a higher fraction of decision rights regarding human resources management, promotion, monitoring and knowledge transfer at the local outlet level. Under such circumstances, franchisors may increase control by using a higher proportion of company-owned outlets to compensate the franchisor for the dilution of decision rights. Therefore, a positive correlation between company ownership and the franchisor's use of MUF is expected.

Overall, we conclude that, based on the OC perspective, the results show that the franchise systems' organizational capabilities are major determinants influencing the franchisor's choice of the multi-unit ownership strategy. We hope that this contribution inspires further research on the role of organizational capabilities in structuring franchise chains and other inter-firm networks, such as cooperatives, strategic alliances and joint ventures.

Appendix: Measures of variables

Tendency towards MUF: MUF is calculated by dividing the number of franchised outlets by the number of franchisees in the franchise system.

ENV: three items, measured on a 7-point Likert-type scale (1 strongly disagree–7 strongly agree), Cronbach's alpha = 0.738

1. The sales at the outlet level fluctuate considerably.
2. It is very difficult to predict market development at the outlet level.
3. The economic environment in the local market changes frequently.

BEHAV: three items, measured on a 7-point Likert-type scale (1 strongly disagree–7 strongly agree), Cronbach's alpha = 0.720

1. It is very difficult to measure the performance of the outlet manager (franchisee or manager).
2. It is very difficult to control the behavior of the outlet manager (franchisee or manager).
3. It is very difficult to assess the competencies and capabilities of the outlet manager (franchisee or manager).

Exploitation capabilities (EXPLT): three items, measured on a 7-point Likert scale (1 great advantage through SUF–7 great advantage through MUF), Cronbach's alpha = 0.865. The franchisors were asked the following questions:

1. As a franchisor, how do you see the advantages of MUF compared with SUF in terms of knowledge transfer between the outlets and head office?
2. As a franchisor, how do you see the advantages of MUF compared with SUF in terms of coordination between the outlets and head office?
3. As a franchisor, how do you see the advantages of MUF compared with SUF in terms of monitoring of the outlets?

Exploration capabilities (EXPLR): two items, measured on a 7-point Likert scale (1 great advantage through SUF–7 great advantage through MUF), Cronbach's alpha = 0.704. The franchisors were asked the following questions:

1. As a franchisor, how do you see the advantages of MUF compared with SUF in terms of franchise system innovation?
2. As a franchisor, how do you see the advantages of MUF compared with SUF in terms of product innovation?

SECT: 0 = product franchising firms; 1 = services firms.

LnSIZE: log of the total number of outlets in the franchise system (franchised + company owned).

LnAGE: log of the number of years since opening up the first franchised outlet in Germany and Switzerland.

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