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Abstract

Purpose – The purpose of this paper is to provide a more robust understanding of the development of dynamic capabilities (DCs) in service multi-units with different cultural distances (CD) (high (HCD) and low (LCD)) through the routines of embedded social capital (structural and relational) and knowledge archetype (exploitative and exploratory) learning.

Design/methodology/approach – The authors used survey questionnaires and structural equation modeling to discriminate the relationships among variables.

Findings – The authors found that structurally embedded social capital has a positive influence on exploratory knowledge learning in HCD service multi-units; relationally embedded social capital has a positive influence on knowledge archetype (exploitative vs exploratory) learning in both HCD and LCD service multi-units; and knowledge archetype learning has a positive influence on the development of DCs in both HCD and LCD service multi-units.

Research limitations/implications – The results identify the central role of social capital (structurally and relationally embedded) in enabling knowledge archetype learning and the development of DCs in service multi-units. In addition, this study provides a description and comparison of how structurally and relationally embedded social capital are key antecedents in knowledge archetype learning and the development of DCs in the context of service multi-units with different HCD and LCD.

Originality/value – The results provide a practical trajectory for the development of DCs in multi-units of multinational corporations in the service industry with different HCD and LCD.

Keywords Social capital, Dynamic capabilities, Cultural distance, Knowledge learning

Paper type Research paper

1. Introduction

The multi-unit organization has been one of the most important trends in the service industry, and is an important virtue of service companies' international expansion. The development of dynamic capabilities (DCs) in such firms, which involves personal interactions in the areas of experience, skills, activities, and values, must effectively and rapidly respond to changes in the external environment (Kenney and Gudergan, 2006). In practice, the development of multi-unit DCs always faces significant uncertainty in terms of output. Therefore, members or participants of such multi-units need to coordinate and interact closely with diverse social capital (structural and relational) and engage in knowledge archetype (exploitative vs exploratory) learning to be able to

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assess the required resources and knowledge acquisition needed to effectively solve problems and develop their DCs.

In the process of developing a service multi-unit's DCs, differences in national and cultural characteristics may create difficulties in understanding the nature and purpose of certain practices. The difference between the cultural norms of two countries is defined as cultural distance (CD) (Kogut and Singh, 1988; Morosini *et al.*, 1998). CD can affect members' perceptions, interactions, ties, and the interpretation of environmental signals. Thus, CD can create difficulties in understanding, interpreting, and executing multi-units' routines and requirements (Nachum, 2003); greater CD between the host and home countries results in more difficult and costly adaptation (Kessapidou and Varsakelis, 2003). Hence, in more culturally distant countries, the routines of service multi-units typically face greater difficulties in terms of social capital formation, knowledge archetype learning, and development of DCs, resulting in higher management costs (Mezias *et al.*, 2002).

Radical dynamization approach treats DCs as functionally equivalent in dynamic environments (Eisenhardt and Martin, 2000; Helfat and Peteraf, 2003; Winter, 2003). Integrative approach views DCs as amending capabilities through the addition of a dynamic process (Adner and Helfat, 2003; Kor and Mahoney, 2005). These theoretical perspectives on DCs do not emphasize the importance of organizational routine. However, in fact, organizational routines have the potential to generate social capital and knowledge learning, and to reflect an organization's dynamic adaptation and development of unique capabilities. Thus, the innovation routine theory of DCs (Teece *et al.*, 1997; Teece, 2012) highlights routines that are repetitive in nature, are systematically complicated, and have detailed processes that drive the creation, evolution, and recombination of other resources to enhance the deployment of organizational DCs. In particular, the cooperative routines among culturally distant service multi-units are characterized by strong person-to-person interactions, irregular learning, reconfiguring knowledge, and adjustments to cultural differences. The development of DCs in culturally distant service multi-units typically encounters greater difficulties and challenges. Previous studies have ignored the development of DCs in such multi-units in the context of social capital and knowledge archetype learning through cooperative routines. This represents a theoretical gap in research on DCs. This study follows the innovation routine perspective and addresses the notion that DC development is socially complex and depends on investments in social capital and knowledge archetype learning (Teece *et al.*, 1997; Teece, 2012). Thus, this study defines the development of DCs in multi-units on the basis of the cooperation process among routines and as problem-solving patterns that require social capital formation and a knowledge archetype learning process (Doving and Gooderham, 2008; Zollo and Winter, 2002). However, a high degree of cooperation among the routines of dynamic service multi-units typically involves complex and highly interactive social collaborations (Szulanski, 1996). Moreover, service routines are highly and constantly changing in terms of knowledge exchange (Moliterno and Wiersema, 2007), as represented by interactions, relationships, and trust processes to enhance organizational members' willingness to exchange opinions and knowledge with others and contribute to new ideas and DC development.

However, the aim of this study is to address how culturally distant service multi-units embed social capital (structural and relational) and learn knowledge archetypes (exploitative vs exploratory) to develop unique DCs. Following the perspective of Chevassus-Lozza and Galliano (2003) and Galliano and Nicolas, we define service multi-units as having a legal personality and comprising at least one service unit

outside the home country. The CD between foreign entrants' home countries and Taiwan was calculated following the measures of Kogut and Singh (1988) on the basis of the national culture scores of Hofstede (1980). Higher scores mean larger differences between the cultural norms in one country and those in another country (high cultural distance (HCD)); in contrast, a lower score indicates a low cultural distance (LCD). Regarding the variables in the research framework, we follow Nahapiet and Ghoshal (1998) in defining structurally embedded social capital as the framework for network ties that allow an exchange of viewpoints and information that facilitate the combination and reconfiguration of resources or knowledge. We also define relationally embedded social capital (Nahapiet and Ghoshal, 1998; Moran, 2005) as the trust domains related to the closeness and honesty of members or partners that influence these individuals to participate and exchange information or resources in daily routines. Following Dewar and Dutton (1986), this study defines exploitative knowledge learning as that which builds on an existing knowledge base to create incremental innovations relevant to current operations. Following Kang *et al.* (2007), this study defines exploratory knowledge learning as learning that focusses on the pursuit of radical innovations. Finally, DCs are problem-solving patterns that reflect the endowment in terms of strategy, innovation, and management (McEvily and Zaheer, 1999; Lee *et al.*, 2011). Our findings contribute to knowledge of the roles of embedded social capital and knowledge archetype learning in the development of DCs, and may provide a practical trajectory for the development of DCs in service multi-units with different CD.

2. Background and development of hypotheses

Granovetter (1985) argues that social embeddedness is an important mechanism in social and knowledge exchanges because most behavior is closely embedded in networks and interpersonal relationships. Socially (structural and relational) embedded networks and relationships can serve organizational members in terms of sharing, configuring, and utilizing available information and enhancing communication, learning, and knowledge creation. After all, organizational knowledge learning is able to evolve into unique capabilities, particularly when organizational routines are the background for learning (Eisenhardt and Martin, 2000). Several studies (Clark and Fujimoto, 1991; Zollo and Winter, 2002) address the concept that DCs exist in special operating routines and arise from learning, in which routine learning is systematic and important to deploying the perspective of DCs. Argote (1999) and Eisenhardt and Martin (2000) also describe the evolutionary path of DCs as a form of knowledge learning and argue that the learning of knowledge archetypes plays a distinct role in terms of converting organizational routines into DCs. However, the cooperating routines of service multi-units as recurrent interactional patterns govern the knowledge archetype learning of members or participants and contribute to further applications in knowledge and DC development. Therefore, socially embedded capital plays an important role in knowledge archetype learning and the development of DCs to compete in the highly dynamic and competitive environment of the service industry.

A few studies have examined the influences of CD on the routines of service multi-units in relation to structurally embedded social capital in knowledge archetype learning. In fact, CD usually disturbs a person who is receiving and interpreting the immediacy of his or her social ties (Anderson, 1985; Ward, 2008). Exploitative knowledge learning focusses on interpreting the immediacy of social ties, and in particular, highlights incrementally improved innovations that are pertinent to current routines (Subramaniam and Youndt, 2005). It is aided by establishing more intense

structural networks among members or partners (Miller *et al.*, 2006; Moran, 2005; Subramaniam and Youndt, 2005). Kang *et al.* (2007) argued that exploitative knowledge learning is best served by a "cooperative ties feature" that involves dense formal networks with strong structural ties between individuals and different units. Nahapiet and Ghoshal (1998) also endorsed the concept that, through this connectivity, centrality, and hierarchy, structurally embedded social capital can increase access to exploitative knowledge, enabling actors in multi-units to share cognitive schemas and learn pertinent operations for further new exploitation. However, in situations of higher CD, multi-units' routines typically interrupt the coordination of activities and collective learning outputs (Arenas-Gaitan *et al.*, 2011). Service multi-units with higher CD typically have greater difficulty in terms of structurally embedded social capital in relation to immediate exploitative service knowledge learning:

H1. Structurally embedded social capital has a more positive impact on exploitative knowledge learning in service multi-units with LCD than in those with HCD.

Typically, different CD produce different levels of acceptance with respect to unknowns and uncertainty, and past studies have rarely discussed how structural social capital impacts open-ended and exploratory learning (Tapanes *et al.*, 2009). In particular, the routine process of HCD multi-units may produce greater difficulties in terms of exploratory consensus (Tapanes *et al.*, 2009) and may produce different acceptance levels in relation to exploratory outputs. Moreover, exploratory service knowledge is particularly focussed on these processes of sharing and learning of new exploratory knowledge from the external environment. These processes are typically based on the density of structural networks among organizations and between the organization and its external partners (Jansen *et al.*, 2005; Kogut and Zander, 1992). Thus, Nahapiet and Ghoshal (1998) addressed the concept that structural networks are able to impact a firm's access to other members or partners to exchange new external knowledge. This exchange could enable the provision of channels that lead to the creation of exploratory knowledge. In short, HCD service multi-units may experience more challenges among members or partners when exploring new service knowledge from various structurally embedded networks:

H2. Structurally embedded social capital has a more positive impact on exploratory knowledge learning in service multi-units with LCD than in those with HCD.

CD inevitably plays a key role in interference with interpersonal trust and information exchange (Park, 2002; Stahl *et al.*, 2010) and significantly impacts knowledge learning within a collaborative group (Sarker, 2005). The consideration of information flows is particularly important for exploitative service knowledge learning (Sporleder and Moss, 2002). Through various relationships, exploitative service knowledge learning is defined as a field that advances an integrated approach to managing and exploiting all information flows. If there is a high degree of relational trust, members, or partners will have the will to fully engage in routine interactions and information exchanges (Nahapiet and Ghoshal, 1998). Moreover, a service multi-unit is efficient in terms of norms, obligations, and identifications that enhance trust in members or parties to materialize more targeted, in-depth, and precise links between existing service knowledge and new services. Inevitably, higher CD is detrimental to service interactions and effective exploitative learning in relationally embedded processes (Azevedo *et al.*, 2002; Thomas, 2002):

H3. Relationally embedded social capital has a more positive impact on exploitative knowledge learning in service multi-units with LCD than in those with HCD.

Anakwe *et al.* (1999) noted that CD impacts external knowledge learning. Members or partners with similar cultural backgrounds can easily build relationships of trust that benefit the exploration of new external knowledge. A few studies have investigated the causality between relationally embedded social capital and exploratory knowledge learning. Relationally embedded social capital is trust (Fukuyama, 1995) and the norms that determine the quality of these relationships (Coleman, 1990) that, in turn, influence the behavior of the members or partners. Exploratory service learning routines are relation-specific interactions in which social trust and embedded norms increase members' or partners' willingness to share new service information and enhance the breadth and depth of exploratory learning, thereby increasing the potential for innovative combinations and speedy integration. Tsai and Ghoshal (1998) showed that manifestations of the relational dimension are significantly related to the extent of inter-unit resource exchanges that, in turn, have a significant effect on the operational outcomes of routines. Thus, relationally embedded social capital could more strongly enhance exploratory knowledge learning by increasing relation-specific willingness and the trust of partners or members to identify, exchange, and assimilate new and exploratory service knowledge in LCD situations than in HCD situations:

H4. Relationally embedded social capital has a more positive impact on exploratory knowledge learning in service multi-units with LCD than in those with HCD.

Prior CD research has always focussed on the strategic impacts of alliances or multinational corporations (MNCs) (Lenartowicz and Roth, 2004; Westwood and Posner, 1997). A few studies have investigated the effects of CD on cooperative routines in service multi-units. Ambos and Ambos (2009) addressed the notion that greater CD interferes with cooperative routines and impacts existing knowledge exploitative learning and the effective transfer of new knowledge. However, coordinated and cooperative routines among service multi-units involve interpersonal information exchange and interoperability that transforms existing service knowledge into exploitative applications in different local service environments (Mom *et al.*, 2007). These coordinative and cooperative routines (both structurally and relationally embedded) increase service information interflow, derive an aggregate of exploitative resources, and encourage collective learning that leads to the refinement, identification, and selection of new service knowledge and the combination of existing service knowledge with new and interactively generated knowledge to solve routine problems and renew DCs. However, members or partners in LCD service multi-units are more easily involved in trusting relationships and dense networks that enhance exploitative knowledge learning to more effectively develop DCs than they are in HCD service multi-units:

H5. Exploitative knowledge leaning has a more positive impact on the development of DCs in service multi-units with LCD than in those with HCD.

Service exploratory learning can result from coping with a variety of experiences. CD affects one's point of view with respect to various experiences, thereby affecting one's attitudes toward unfamiliar and new experiences and ultimately affecting one's behavior (Azevedo *et al.*, 2002). Thomas (2002) also highlighted the fact that CD affects attitudes, behavior, and norms, and can even impact organizational external knowledge learning and transfer. Considering service multi-units as formal coordinative systems with interpersonal interactions and ties, entering into collaborative multi-unit partnerships involves the motivation to use new external service knowledge in a formal coordinative

system (Rothaermel and Deeds, 2004). Thus, the cooperative routines of service multi-units are necessary to explore external knowledge through various interpersonal ties. Different CD influence members' or partners' attitudes and behavior when facing unfamiliar technology and service innovations, which also affects how the service multi-unit explores service learning and the development of service capabilities. Moreover, numerous studies have confirmed that DCs can be derived from social relationships and that relationships can contribute to new and useful exploratory knowledge of organizational routines that enhance the development of DCs (Gulati, 1999; Lane and Lubatkin, 1998; Bierly *et al.*, 2009):

H6. Exploratory knowledge learning has a more positive impact on the development of DCs in service multi-units with LCD than in those with HCD.

3. Methods

3.1 Sample design and data collection

The sample for this study was drawn from overseas multi-units of MNCs in the Taiwanese service industry. These service MNCs were purposively sampled from a directory of Taiwanese businesses across a wide range of fields in the service industry, such as tourism, leisure and recreation, digital content, tourist hotels, travel agency services, information services, mobile messaging services, financial services, and so on. The human resources departments of 832 MNCs were contacted and asked to cooperate by sending survey questionnaires to their expatriate managers. A total of 651 MNCs agreed to participate. The sampling focussed in particular on expatriate managers in service multi-units. Expatriate managers were with their service multi-units for an average of more than five years. Thus, the respondents had an in-depth understanding of their service multi-unit's cooperative routines and knowledge learning and were also likely to be the most qualified people in those multi-units to provide information for this study.

To identify the causal relationships among these variables in service multi-units with different CD, we divided the sample into LCD and HCD firms. The CD of the foreign multi-unit from the host country was calculated following the measures of Kogut and Singh (1988) and on the basis of the national culture scores of Hofstede (1980). The following equation was used:

$$CD_i = \sum_{i=1}^{4} \left\{ \left(I_{ij} - I_{it} \right)^2 \right\} / 4$$

where I_{ij} represents the index for the ith cultural dimension and jth country, t indicates Taiwan, and CD_j represents the cultural difference between the jth host country and Taiwan. Furthermore, following Lee *et al.* (2008), the mean CD was calculated first, and then the sample was divided into HCD and LCD groups. A total of 489 questionnaires were returned from 651 managers, of which 68 were invalid. Of the 421 valid copies, 200 represented HCD multi-unit organizations (30 percent response rate) and 221 represented LCD multi-unit organizations (33 percent response rate).

3.2 Measures

Structurally vs relationally embedded social capital. Structurally embedded context is the point of view of networks, combinations, and exchanges that results in rich information transmission and resource configuration through structural centrality and hierarchy

(Nahapiet and Ghoshal, 1998). Thus, five items developed from the study of social capital by Nahapiet and Ghoshal (1998) were used to measure this construct by investigating respondents (whether multi-unit members or partners) in their daily coordinated service routines to exchange timely information and enable diversity and richness of information, volume of information, and organizational social network potential (Table I) ($\alpha = 0.908$). Relationally embedded social capital represents the key facets of such capital, including trust, norms, and expectations (Coleman, 1990; Fukuyama, 1995). All such facets influence service multi-unit members and partners in how they anticipate, combine, and share information or resources, and in motivating

Item	Estimate	SE	*t*
Social capital (structural embedded)			
1. Members or partners can exchange information easily and frequently combine knowledge via direct and indirect network ties	0.8	0.04	20.83
2. Members or partners can acquire diverse information via direct and indirect network ties	0.8	0.04	20.83
3. Members or partners can acquire rich information via direct and indirect network ties	0.8	0.05	20.54
4. Members or partners can acquire volumes of information via direct and indirect network ties	0.9	0.04	21.54
5. Organization can provide a potential social network for access to people and their resources, including information and knowledge	0.7	0.05	15.85
Social capital (relational embedded)			
1. Members or partners felt closeness and mutual contact in working relationships	0.9	0.05	18.85
2. Members or partners share overall goals and values in working relationships	0.8	0.05	18.85
3. Members or partners were honest and truthful in providing information to contacts	0.8	0.05	18.08
4. Members or partners felt competent in the areas in which they interact	0.8	0.05	17.21
Exploitative knowledge learning			
1. Members or partners can transmute service knowledge into commercial applications	0.8	0.05	23.13
2. Members or partners can convert innovative ideas into commercial applications	0.9	0.05	23.12
3. Members or partners can apply service knowledge for commercial purposes	0.8	0.05	20.11
4. Members or partners can launch innovations into the service market	0.6	0.06	12.45
Exploratory knowledge learning			
1. Members or partners can recognize external service knowledge resources	0.6	0.07	11.76
2. Members or partners have regular meetings or ties with externals organizations	0.6	0.08	12.20
3. Members or partners are motivated to use external service knowledge sources	0.7	0.08	13.30
4. Members or partners can identify new service knowledge in external sources	0.7	0.08	13.85
5. Members or partners can generate information relevant to new business opportunities	0.6	0.08	13.86
6. Members or partners can select and retain knowledge obtained from external sources	0.6	0.08	12.32
Dynamic capabilities			
1. The organization has future competitive flexibility in the industry	0.6	0.10	10.28
2. The organization is aware of new business opportunities and threats	0.6	0.10	9.59
3. The organization has the ability to make employees' knowledge cohesive through visioning	0.7	0.11	11.34
4. The organization has the ability to evaluate its own strengths and weaknesses	0.7	0.11	11.07
5. The organization has the ability to identify directions and timing for service innovations	0.7	0.11	11.59
6. The organization has the flexibility to develop new products, technologies, or services	0.8	0.14	11.93
7. The organization has the flexibility to understand the specific needs of its customers	0.6	0.11	10.46
8. The organization has the flexibility to communicate and coordinate effectively among departments	0.6	0.10	9.43
9. The organization coordinates with the community in order to fulfill mutual needs	0.6	0.10	9.44

Table I. Parameter estimates: coefficient loadings of indicators

members and partners to engage in knowledge learning (Nahapiet and Ghoshal, 1998). This construct was composed of four items adopted from the relation trust domain in Moran (2005) and relates directly to the closeness and honesty of members' and partners' daily routines ($\alpha = 0.878$).

Knowledge archetype learning. Exploitative knowledge learning involves activities such as refinement, choice, production, efficiency, selection, and implementation in daily routines (Mom *et al.*, 2007). We adopted four items from Gebauer *et al.* (2012) to measure exploitative service knowledge learning, including the application of knowledge and the innovation of ideas for commercial applications or purposes (Table I) ($\alpha = 0.870$). Exploratory knowledge learning is particularly concerned with the development of new knowledge to develop future business opportunities (Filippini *et al.*, 2012) and adopts a long-term orientation (Tushman and O'Reilly, 1996). This construct was composed of six items adopted from Gebauer *et al.* (2012), including whether members and partners generate information relevant to new opportunities, recognize and identify new external service knowledge, and are motivated to use external service knowledge ($\alpha = 0.856$).

DCs. This study views DCs as coordinated routine processes that materialize through the endowment of an organization in terms of strategy, innovation, and management (McEvily and Zaheer, 1999; Lee *et al.*, 2011). In total, nine items were used and drawn from previous studies (Lee *et al.*, 2011; Bierly and Chakrabarti, 1996; Danneels, 2002). The first three items were employed to assess organizational strategic capabilities, such as future competitive flexibility, awareness of new business opportunities or the possibility of a threat, and making employees' knowledge cohesive through visioning (Table I). The next three items were used to measure innovative capabilities, such as evaluating the organization's strengths and weaknesses, directions, and timing of innovation, and the flexibility to develop new products, technology, or services. The final three items were used to assess organizational management capabilities, such as the flexibility to understand specific customer needs, to coordinate effectively among departments, and to coordinate with the community to fulfill mutual needs ($\alpha = 0.890$).

3.3 Control variables

Four control variables were included in this study. First, the lingual fluency of expatriate managers is required to communicate well with members and partners and to allow for the development of social interactions and network relationships (Takeuchi *et al.*, 2002), which are essential for coordinated routine deployment and knowledge learning. Second, extensive international experience with portable networks and transferable association systems can provide expatriate managers with creative ideas and logical points of view with which to handle different members and partners, networks, institutional environments, and various new settings (Fiske and Taylor, 1984). We controlled the possible effects of these two variables during the phase analysis of social capital and knowledge archetype learning.

Third, firm size may influence the creation of new relationships (Tsai, 2000) and impact knowledge learning (Autio *et al.*, 2000). We used the number of employees of a service multi-unit to measure the impact of firm size on DCs. Fourth, the age of a multi-unit represents its accumulation of experience and knowledge and has long been studied as a factor affecting business outcomes (Calof, 1994; Dobrev and Carroll, 2003). Thus, each multi-unit's age was measured using the number of years since the organization was formally founded. Therefore, we controlled the possible effects of these two variables in the phase analysis of knowledge archetype learning and DCs.

4. Analysis and results

4.1 Construct validity

Construct validity was determined by examining convergent and discriminant validity (Campbell and Fiske, 1959). The convergent validity of the constructs was determined by examining factor loadings and t values, the estimates for each construct, and the standardized loadings and t values. The factor loadings for each construct were large (> 0.5) and statistically significant ($t > 1.96$).

Discriminant validity was examined by comparing a constrained structural equation model with an unconstrained model (Anderson and Gerbing, 1988). A significantly lower χ^2 value for the unconstrained model supported the discriminant validity criterion (Bagozzi and Philips, 1982). In all cases, the χ^2 value for the unconstrained model was significantly lower ($p < 0.05$) than that for the constrained model, and $\Delta\chi^2/\Delta$df all exceeded 3.84 (Diamantopoulos and Siguaw, 2000). Thus, all indicators had satisfactory discriminant validity.

4.2 Structural model fit and model coefficients

Among HCD service multi-units, the overall χ^2 value was 952.52 (df = 340), χ^2/df = 2.80 was less than 5 (Schumacker and Lomax, 2004), and the goodness of fit was 0.92. The comparative fit index (CFI) was $0.98 > 0.9$ (Bentler, 1990), the incremental fit index (IFI) was $0.98 > 0.9$, and the root mean square error of approximation (RMSEA) was $0.04 < 0.08$ (MacCallum *et al.*, 1996). Therefore, the model had a good fit to the data given the moderate sample size of 200. In addition, the structural equation model indicated that the overall $\chi^2 = 1{,}126.24/(\text{df} = 426) = 2.64$ was less than 5 (Schumacker and Lomax, 2004) and that χ^2 was significant at $p < 0.05$, as might be expected given this statistic's sensitivity to sample size. The other fit indices (i.e. RMSEA = $0.04 < 0.08$, GFI = 0.90, CFI = 0.97, IFI = 0.97 or higher) were all within acceptable ranges. Hence, the model was a reasonable representation of the data.

Among LCD service multi-units, the overall χ^2 value was 1,423.08 (df = 340), $\chi^2/df = 4.18$ was less than 5 (Schumacker and Lomax, 2004), and the goodness of fit was 0.88. The CFI was $0.98 > 0.9$ (Bentler, 1990), the IFI was $0.98 > 0.9$, and the RMSEA was $0.03 < 0.08$ (MacCallum *et al.*, 1996). Thus, the model had a good fit to the data, given the moderate sample size of 221. The structural equation model indicated that the overall $\chi^2 = 1{,}543.16/(\text{df} = 426) = 3.62$ was less than 5 and that χ^2 was significant at $p < 0.05$, as might be expected given this statistic's sensitivity to sample size. The other fit indices (i.e. RMSEA = $0.02 < 0.08$, GFI = 0.86, CFI = 0.98, IFI = 0.98 or higher) were all within acceptable ranges. Hence, the model was a reasonable representation of the data.

Table II reports the results of the hypotheses tests. Among the HCD service multi-units, structurally embedded social capital had a positive influence on exploratory knowledge learning ($\gamma 2 = 0.17$, $t = 3.99$*; *H2*), and relationally embedded social capital had a positive influence on exploitative knowledge learning ($\gamma 3 = 0.45$, $t = 7.77$*; *H3*) and exploratory knowledge learning ($\gamma 4 = 0.43$, $t = 8.27$*; *H4*). The results were positive and statistically significant, thus supporting the relationships. *H5* predicted that exploitative knowledge learning positively impacts the development of DCs ($\gamma 5 = 0.41$, $t = 4.75$*), and *H6* predicted that exploratory knowledge learning positively impacts the development of DCs ($\gamma 6 = 0.43$, $t = 5.10$*). The results were positive and statistically significant, thus supporting the relationships. Relatively, *H1* predicted that structurally embedded social capital has a positive impact on exploitative knowledge learning. The coefficient for structurally embedded social capital with exploitative knowledge

Path	*H*	High culturally distant service multi-units Estimate	Support/ un-support	Low culturally distant service multi-units Estimate	Support/un-support
Structurally embedded→Exploitative knowledge learning	*H1*(+)	0.03	Un-support	−0.09	Un-support
Structurally embedded→Exploratory knowledge learning	*H2*(+)	0.17*	Support	0.12	Un-support
Relationally embedded→Exploitative knowledge learning	*H3*(+)	0.45*	Support	0.38*	Support
Relationally embedded→Exploratory knowledge learning	*H4*(+)	0.43*	Support	0.27*	Support
Exploitative Knowledge learning→Dynamic capabilities	*H5*(+)	0.41*	Support	0.12*	Support
Exploratory Knowledge learning→Dynamic capabilities	*H6*(+)	0.43*	Support	0.88*	Support

Note: *Significant at the $p < 0.05$ level

Table II.
Hypothesis tests for DC development model of high vs low cultural distant service multi-units

learning was ($\gamma 1 = 0.03$, $t = 0.90$), which was positive but not statistically significant. Thus, *H1* was not supported.

Among LCD service multi-units, relationally embedded social capital had a positive influence on exploitative knowledge learning ($\gamma 3 = 0.38$, $t = 5.98$*; *H3*) and exploratory knowledge learning ($\gamma 4 = 0.27$, $t = 5.37$*; *H4*). The results were positive and statistically significant, thus supporting the relationships. Furthermore, *H5* predicted that exploitative knowledge learning positively impacts the development of DCs ($\gamma 5 = 0.12$, $t = 2.70$*), and *H6* predicted that exploratory knowledge learning positively impacts the development of DCs ($\gamma 6 = 0.88$, $t = 3.85$*). The results were positive and statistically significant, thus supporting the relationships. In contrast, *H1* predicted that structurally embedded social capital positively impacts exploitative knowledge learning ($\gamma 1 = -0.09$, $t = -0.82$), and *H2* predicted that structurally embedded social capital positively impacts exploratory knowledge learning ($\gamma 2 = 0.12$, $t = 2.21$). However, the coefficients were not statistically significant, thus not supporting *H1* and *H2*.

5. Conclusion

We examined the roles of social capital (structurally vs relationally embedded) on knowledge archetype (exploitative and exploratory) learning and DC development among 200 HCD service multi-units and 221 LCD service multi-units. We obtained some significant results.

First, structurally embedded social capital did not have a positive influence on exploitative knowledge learning, but had a positive influence on exploratory knowledge learning in HCD service multi-units. HCD service interactions and routine cooperation were more likely to lead to frequent distress or collective immediacy rebound phenomena, particularly through formal structural ties. After all, different cultural backgrounds can produce a number of differences in relation to learning.

In terms of structural perspectives, using force to coordinate routines in HCD service multi-units could easily result in an increase in short-term conflicts. Therefore, structural embeddedness in HCD service multi-units may not necessarily be conducive to exploitative service knowledge learning in highly interpersonal interactive service routines. In contrast, exploratory knowledge learning is particularly focussed on fields of radical innovation and new knowledge, that is, on the intention to identify and utilize external and novel service knowledge. Cultural differences can cause a number of difficulties in the exchange of information and knowledge learning, particularly in the coordinated routines of service multi-units that require significant interpersonal interaction. Structurally embedded networks and interactions can improve the trust in external information and the acquisition of new service knowledge. Therefore, structurally embedded social capital is an essential characteristic of long-term exploratory service learning in HCD service multi-units.

Second, structurally embedded social capital did not positively influence exploitative and exploratory knowledge learning in LCD service multi-units. LCD organizations have similar cultural backgrounds, cognitions, and values, and even use the same language and means of communication. Typically, people in LCD service multi-units have similar perspectives on new knowledge and learning when faced with a variety of coordinated service routines. That is, they easily produce similar cognitions, judgments, and even behavioral responses when faced with the same service problems. Furthermore, LCD service routines exhibit cooperation and an acceptance of unknowns and uncertain knowledge, even if the differences are minimal. Therefore, structurally embedded networks and ties do not necessarily improve exploitative and exploratory knowledge learning in routine coordination and cooperation among LCD organizations.

Third, we identified relationally embedded social capital as a significant feature in terms of exploitative and exploratory knowledge learning in both HCD and LCD service multi-units. Relationally embedded dimensions, such as trust, norms, obligations, and expectations, play key roles in members' and partners' participation in knowledge learning, exchange, and coordination. Relationally embedded dimensions could lead to a higher degree of consensus among members or partners in relation to new information interflow and external exploratory learning or development. After all, the routines of service multi-units involve highly interpersonal interactions, and trust is the basis of various service knowledge exchanges, interflows, and transfers. Therefore, relationally embedded social capital could increase the willingness and ability of members or partners to identify and assimilate exploitative and exploratory knowledge.

Fourth, exploitative and exploratory knowledge learning has a positive and significant influence on the development of DCs in both HCD and LCD service multi-units. DCs are able to detect changes in the external environment and immediately solve problems through routine processes (Doving and Gooderham, 2008; Zollo and Winter, 2002). For the purposes of short-term efficiency and timely problem-solving, service multi-units must define their current service exploitative knowledge well and apply it or improve it in existing domains. In contrast, exploratory knowledge learning is comprehensive and strives to expand organizational knowledge domains into unfamiliar and novel areas. This new external service knowledge could lead to new opportunities in the future that are in accordance with a long-term perspective for handling radical service innovation. Exploratory knowledge learning is necessary to provide real responses to dynamic external service changes and can even further these opportunities. In short, regardless of HCD or LCD, service multi-units are able to enhance the development of DCs through the processes of exploitative and exploratory knowledge learning.

6. Management implications

Past theoretical studies on DCs have not emphasized the importance of organizational routine and the processes of embedded social capital and knowledge archetype learning. However, our aim was to provide a more robust understanding of DC development in service multi-units with different CD through the routines of embedded social capital and knowledge archetype learning. Our results fill this theoretical gap in research on DCs. This study contributes to the literature in two important ways. First, we identified the central role of social capital (structurally and relationally embedded) in enabling knowledge archetype learning and the development of DCs in service multi-units, which was not previously fully specified and verified. Second, we provide a description and comparison of how structurally and relationally embedded social capitals are key antecedents in knowledge archetype learning and DC development in the context of service multi-units with different HCD and LCD. Moreover, we believe that the results of this study could provide service multi-units with a practical trajectory for developing DCs.

Despite its strengths, this study also had limitations. First, we relied on data from individual managers. Managers have extensive experience in routine coordination and cooperation in service multi-units and can provide information on coordinated and managerial routines with which they are familiar, but the subjectivity of their answers presents a limitation. Second, governance structures (i.e. market or hierarchical) could impact several aspects of a firm's organizational and managerial activities, including managers' perceptions, networks, relationships, and interpretation of environmental signals. We did not define or control for the impact of different governance structures. Follow-up studies should seek to define this construct and empirically verify its impact on the development of DCs in service multi-units.

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Further reading

Galliano, D. and Soulie, N. (2012), "Organizational and spatial determinants of the multi-unit firm: evidence from French industry", *Regional Studies*, Vol. 46 No. 7, pp. 907-926.

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