

Expatriates managers' cultural intelligence as promoter of knowledge transfer in multinational companies

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ABSTRACT

This study analyzes the role of the Cultural Intelligence (CQ) of expatriate managers in the processes of Conventional (CKT) and Reverse Knowledge Transfer (RKT) in Multinational Companies (MNCs). The Partial Least Squares-Structural Equation Modeling (PLS-SEM) technique was adopted to analyze the data from a survey of 103 senior expatriate managers working in Croatia. The study reveals how CQ, in all of its four dimensions (metacognitive, cognitive, behavioral, and motivational), acts as a knowledge de-codification and codification filter, assisting managers in the Knowledge Transfer process. The study also reveals how previous international experience does not moderate the positive effect of CQ on both CKT and RKT, offering important theoretical and practical insights to support MNCs in the KT process.

1. Introduction

Multinational companies (MNCs) have for decades been considered the main providers of knowledge and technology to subsidiaries and partner companies in less developed countries (Peng & Beamish, 2014). More recently, this trend can be seen to change (Nair, Demirbag, & Mellahi, 2015; Park & Vertinsky, 2016) to the point where MNCs decisions to enter a new geographical market are also influenced by the opportunity to absorb local knowledge from their subsidiary (McGuinness, Demirbag, & Bandara, 2013). Such transformations compel MNCs to continuously update their knowledge and competencies in order to effectively and efficiently achieve tasks and objectives (Alguezaui & Filieri, 2010).

This paper focuses on the two directions in which Knowledge Transfer (KT) could happen: Conventional and Reverse. Conventional Knowledge Transfer (CKT) refers to the transfer of knowledge from the headquarters to the subsidiary, while Reverse Knowledge Transfer (RKT) focuses on the opposite direction, from the subsidiary to the headquarters. Although conceptually similar, CKT and RKT differ in the logic of the transfer. CKT represents a training process where the subsidiary is often under compulsion to replicate the knowledge from the parent branch. On the other hand, RKT is a persuading process and subsidiaries are motivated to share their knowledge with the parent company to improve their strategic position and negotiation power (Yang, Mudambi, & Meyer, 2008).

The opportunities arising from KT among different countries and organizations, often in terms of improved creativity and innovation (Bogilović & Škerlavaj, 2016; Lambert, 2016), clash with the issues that emerge from cultural differences (Ang & Massingham, 2007; Jensen & Szulanski, 2004; Simonin, 1999). As such, cultural adjustment is a fundamental requirement for all of the organizations involved (Peltokorpi, 2008). Despite growing globalization and cross-cultural exchange, a small number of studies have thus far provided an insight into managerial skills which foster KT across different cultures.

Earley and Ang (2003), when examining cross cultural adjustment, proposed the concept of Cultural Intelligence (CQ) as a form of intelligence that enables an individual to effectively acclimatize to unfamiliar and culturally diverse settings, allowing for successful communication across cultures (Earley & Ang, 2003; Lin & Miller, 2003). Over the years, several scholars (e.g., Ang & Inkpen, 2008; Earley & Peterson, 2004) have demonstrated that this type of intelligence could have an extensive impact on managerial performance, especially in a multinational context (Ng, Van Dyne, & Ang, 2009).

While several studies have investigated the effect of CQ on a wide range of managerial characteristics, e.g. motivation (Caligiuri, 2014) and leadership (Raab, Ambos, & Tallman, 2014), the role of CQ in MNCs knowledge Transfer has not been sufficiently studied. Our research questions are therefore as follows: what is the effect of Cultural Intelligence on Conventional and Reverse Knowledge Transfer? And what is the impact of managers' previous international experience with regard to this?

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To answer these questions, Croatia was chosen as the base country of our studies as it presents interesting cross-cultural dynamics due to co-existing Eastern and Western cultural influences. Furthermore, Croatia is a Central Eastern European (CEE) country which recently joined (2013) the European Union. As such, it represents the characteristics of a post-transition, former socialist economy, which has gradually opened itself up to the free market in recent decades. CEE countries have also been the subject of growing investigation of late with regard to MNCs internationalization (Caputo, Pellegrini, Dabic, & Dana, 2016) due to the rising investments made in these countries. The research surveyed a sample of 103 senior expatriate managers working for foreign MNCs operating and based in Croatia, aiming to study the role of CQ in CKT and RKT. Our contribution to existing literature is manifold and cross-disciplinary. We contribute to literature surrounding knowledge management, international business, and organizational behavior. First and foremost, our results show that CQ plays a significant role in the Knowledge Transfer process, both in CKT and RKT. Secondly, we have observed that a manager's CQ does not act in the same way in CKT and RKT. Thirdly, we have shed some light on the ways in which CQ operates in knowledge codification, allowing for RKT from a subsidiary to headquarters in a way that is understandable to the rest of the MNC. Finally, this paper helps to clarify the role of CQ in Knowledge Transfer process. Moreover, the paper exposes to managers the importance of developing their CQ, especially when operating in an international context where they constantly have to deal with different cultures and habits.

In the next section, we provide a review of the literature that bridges the issues of KT and CQ in MNCs. We then develop a model based on several hypotheses and present the sample investigated and the methodology adopted. Subsequently, we present the results of a variance-based structural equation modeling analysis and discuss the different roles of CQ in CKT and RKT. Finally, we present conclusions, managerial implications, limitations, and suggestions for further research.

2. Theory and hypotheses

Borini, de Miranda Oliveira, Silveira, and de Oliveira Concer (2012) identified the ways in which knowledge is strongly tied to the location in which it is produced. Hence, the topic of location specificity is important for two particular bodies of literature: knowledge management and international business. Indeed, location specificity may represent a significant obstacle in MNCs. Therefore, the concepts of CKT and RKT are reviewed, then the CQ theory is presented and, finally, bridged to develop hypotheses.

2.1. Conventional (CKT) and Reverse Knowledge Transfer (RKT)

The concept of KT is used in knowledge management literature to represent the formally organized activity of transferring knowledge from source to recipient within the specific boundaries of the organization (Renzi, 2008; Szulanski, 1996). Unlike knowledge sharing, which takes place through social interactions at an individual level and can have different degrees of informality (Barner-Rasmussen, 2003), KT among expatriates is often related to the passing on of superior practices and skills (e.g., Chang, Gong, & Peng, 2012; Peltokorpi & Vaara, 2014). As such, KT is impacted by the individual characteristics of everyone involved (Szulanski, 1996).

Existing literature is vague when it comes to defining the effect of specific factors on KT (Caligiuri, 2014). Nevertheless, different taxonomies are utilized: while some are focused on variables that positively influence KT, namely enablers or facilitators (Mudambi, 2002), others deal with negative influences, i.e. constraints (Haas & Cummings, 2015; Tihanyi, Swaminathan, & Soule, 2012). For instance, Cummings and Teng (2003) split a large number of factors into four major clusters: knowledge context, relational context, recipient context, and activity context. More recently, Søndergaard, Kerr, and Clegg (2007) presented a model comprising of three categories (leadership, organizational, and

individual factors) and three sub-factors (trust, individual motivation, and geographical location). Riege (2007) suggested a classification consisting of forty barriers: 20 individual, 14 organizational, and 6 technological. The taxonomy proposed by Duan, Nie, and Coakes (2010) encompasses four categories of factors: actor, context, content, and media while Wang and Noe (2010) organize the multiple sub-factors into three key categories: environmental, individual, and motivational factors. Finally, when referring to MNCs, international business scholars focus on individual KT facilitators and barriers, highlighting factors such as motivation (Caligiuri, 2014), leadership (Raab et al., 2014), openness (Boh, Nguyen, & Xu, 2013), gender (Peltokorpi & Vaara, 2014), and autonomy (Rabbiosi, 2011).

MNC scholars have established that cross-border KT is one of the main sources of an MNC's competitive advantage (e.g., Gorovaja & Windesperger, 2010; Kogut & Zander, 1993; Liu, Lu, Filatotchev, Buck, & Wright, 2010; Mudambi, 2002; Tallman & Phene, 2007). Grosse (1996) categorized KT in MNCs as vertical and horizontal. Vertical KT concerns the transfer of knowledge from the parent firm to its subsidiary and vice versa, while horizontal KT refers to the transfer of knowledge from one subsidiary to another (Najafi-Tavani, Giroud, & Sinkovics, 2012). This paper investigates the two forms of KT within vertical KT: conventional (CKT, from headquarters to subsidiary) and reverse (RKT, from subsidiary to headquarters).

CKT is more common in MNCs. Parent companies are an important source of new knowledge for subsidiaries, and most parent companies possess valuable intangible assets and capabilities (Piscitello, 2004) that subsidiaries can exploit to prosper in local markets (Kuemmerle, 1999). This is particularly true for subsidiaries in less developed countries where MNCs were, for a long time, considered to be the main providers of knowledge and technology (Andersson, Björkman, & Forsgren, 2005; Peng & Beamish, 2014). However, as the world progresses, this trend is shifting, and MNCs have begun to benefit from knowledge provided by foreign subsidiaries (Chen, Li, & Shapiro, 2012; Najafi-Tavani, Giroud, & Andersson, 2014). As such, RKT processes have been defined as the "transfer of tacit and explicit knowledge from an MNC's subsidiaries to its headquarters" (Millar & Choi, 2009, p.390). Studies have confirmed the importance of RKT due to the growing dispersion of knowledge creation observed (Ambos, Ambos, & Schlegelmilch, 2006). The assumption of headquarter knowledge supremacy is true for fewer and fewer companies, while RKTs are more likely to contribute extensively to the creation of the MNC's competitive advantage.

According to Pedersen, Petersen, and Sharma (2003), what distinguishes MNCs from domestic companies is their capability of transferring tacit knowledge across borders. However, the cross-cultural nature of this capability generates numerous challenges for KT (Borini et al., 2012). The knowledge is often highly tacit, embedded in the environment and in the culture in which it is developed (Cantwell & Mudambi, 2005). Even though the relevance of the knowledge is recognized across an MNC, cultural differences obstruct the codification processes which allow the knowledge to be transferable, converting it from tacit into explicit knowledge (Davenport & Prusak, 1998; Ruggles, 1997).

Indeed, codification is the key aspect of the process which facilitates MNCs KT. The same process, however, increases the exposure of a company's proprietary knowledge (Pedersen et al., 2003). Codification is part of a communication model wherein the sender encodes the message and uses a medium/channel to transmit the message to the receiver, who then decodes it (Hollensen, 2007). The decodification process is only possible if the codes are defined or codebooks are produced (Cowan, David, & Foray, 2000). However, despite the existence of codebooks, for the meaning to be reproduced, the recipient of the message needs to understand the message in the same way as the sender (Cohendet & Steinmueller, 2000). Decodification is not only a process of understanding words at face value, it also requires a certain level of context-dependent knowledge, both at cultural and institutional levels, as interpretation is subjective (Hall, 2006; Welch & Welch, 2008).

Therefore, managers operating in MNCs need a set of skills enabling them to effectively transfer knowledge across different barriers (Ng et al., 2009). In cross-cultural contexts, one of those crucial skills might derive from a newly explored form of intelligence, namely Cultural Intelligence (CQ).

2.2. Cultural Intelligence

Scholars have contended that Cultural Intelligence (CQ) is essential in successfully communicating across cultures (Earley & Ang, 2003; Lin & Miller, 2003). CQ, developed as one of the forms of human intelligence based on contemporary theories of intelligence (Sternberg, 1986), is the individual's natural ability to effectively acclimatize and function in unfamiliar and culturally diverse environments (Earley & Ang, 2003). Groves and Feyerherm (2011) maintain that the fairly widespread capabilities (e.g. cognitive intelligence, emotional intelligence, and social intelligence) which impact cognition and social behaviors (and are relevant to functioning in culturally uniform settings) do not apply when individuals interact with others from diverse cultural backgrounds. Moreover, recent advancements in anthropology and biology have shown that humans' CQ influences the evolution of humans' cognitive skills compared to primates (Herrmann, Call, Hernández-Lloreda, Hare, & Tomasello, 2007).

The study of CQ (Earley & Ang, 2003) is a moderately new construct and is still in its infancy. Empirical evidence is growing and the construct has proven to be significant in relation to management and organization studies (Triandis, 2006). CQ has been studied within the context of evolution of the field (Dabic, González-Loureiro, & Harvey, 2015), teamwork (Adair, Hideg, & Spence, 2013; Flaherty, 2008), decision-making (Ang et al., 2007), leadership (Groves & Feyerherm, 2011), expatriates (Elenkov & Manev, 2009; Kim, Kirkman, & Chen, 2008; Lee & Sukoco, 2010), and negotiation (Imai & Gelfand, 2010).

The study of CQ became more prominent in organizational environments as Earley and Ang (2003) asserted that, while employees may possess a high level of interpersonal skills within their own culture, that level of interpersonal skills is independent of the level of interpersonal skills that those employees need to adjust to situations across new cultural contexts. That is to say that, although such concepts as emotional intelligence and cognitive ability could perhaps assist individuals in comprehending specific types of information, this will not necessarily result in that information being helpful to them in social interactions across different cultures.

CQ has been conceptualized as a multifaceted characteristic consisting of the following elements (Earley & Ang, 2003): cognitive CQ, metacognitive CQ, motivational CQ, and behavioral CQ.

Cognitive CQ refers to the specific knowledge of a group's values, beliefs, and practices; it also focuses on the knowledge dimension of CQ, pertaining to the level of understanding of culture and its function in establishing business style and cross-cultural interaction. Metacognitive CQ refers to an individual's level of conscious awareness regarding cultural interactions, along with their ability to strategize when experiencing different cultures and to carefully assess their personal thoughts and the thoughts of others regarding culture. Motivational CQ refers to a person's ability to channel energy and attention towards gaining knowledge about cultural differences. It also refers to the degree of interest, drive, and energy that an individual invests in cross-cultural adaptations. Elenkov and Manev (2009), studying leadership styles in senior expatriate managers, have demonstrated that metacognitive and motivational CQ appear to be important factors in augmenting the effectiveness of a senior expatriate leader's ability to set an example to their followers through activities which are consistent with their cultural values, developing collaboration and building trust in teams. Lastly, behavioral CQ is the ability of an individual to be flexible in modifying behaviors and appropriately using verbal and physical actions in cross-cultural interactions. Essentially, behavioral CQ is emblematic of a person's capability to behave

appropriately when confronted with cross-cultural situations and their ability to demonstrate whether or not they are able to achieve objectives successfully in these circumstances.

Directly related to expatriates, Rose, Ramalu, Uli, and Kumar (2010) have shown that behavioral CQ positively relates to job performance, particularly regarding contextual and assignment-specific performance. The authors theorize that this relationship could be founded upon their ability to be flexible in verbal and nonverbal communications, allowing them to meet expectations of others.

Despite the existence of a substantial body of literature investigating multicultural interactions in MNCs and evidence that CQ plays a positive role in expatriates' behavior and performance (Elenkov & Manev, 2009; Lee & Sukoco, 2010; Malek & Budhwar, 2013), the effect of CQ in KT is still unknown.

2.3. Hypothesis development

In this paper we argue that, for knowledge to be efficiently used in MNCs, it is necessary to have a good understanding of the facilitators and barriers of intra-organizational KT. More specifically, building our argument upon the fact that successful interaction across cultures requires CQ (e.g., Earley & Ang, 2003), we focus on the role of CQ in easing the challenges raised by cross-cultural interactions and facilitating CKT and RKT.

Only a couple of studies have investigated CQ in expatriate managers. CQ was found to positively correlate with managers' performance in the case of expatriates' assignment effectiveness (Kim et al., 2008). Similarly, CQ was found to moderate the relationship between visionary-transformational leadership and the rate of organizational innovation (Elenkov & Manev, 2009).

Surprisingly, besides the increasing interest in CQ's effect on expatriates, no studies have investigated the role of CQ in all of its dimensions in KT in MNCs. The study by Buckley, Clegg, and Tan (2006) analyzed cultural awareness, an antecedent of CQ (Moyano, 2016; Şahin, Gurbuz, & Köksal, 2014; Van Dyne et al., 2012), and suggested that foreign investors must be conscious of cultural traditions and practices in order to establish necessary relationships with locally owned partners and thus improve the success of KT. Hence, as a higher order cognitive function than cultural awareness, CQ should also facilitate KT. This claim is supported by the study of Boh et al. (2013), who found that trust and openness to diversity, elements that can be traced to the CQ concept, facilitated KT. Therefore:

Hypothesis 1. Cultural intelligence, in all its dimensions (metacognitive, cognitive, motivational, and behavioral) positively influences conventional (H1a) and reverse (H1b) knowledge transfer.

Extrapolating from the notion that having international experience improves expatriates' ability to culturally adjust (Black, Gregersen, & Mendenhall, 1992), several studies have investigated the impact of prior international experience on cross-cultural adaptation dynamics. Crowne (2008) demonstrated that individuals who had been abroad for work or education, rather than leisure, developed higher levels of CQ. Lee and Sukoco (2010) found that expatriates' previous international working and travel experiences moderated the effects of CQ on cultural adjustment and cultural effectiveness. Engle and Crowne (2014) showed that even a short-term study abroad international experience increases CQ. The two authors demonstrated the moderating effect of international experience on the relationship between CQ and cultural adjustment and effectiveness. More recently, Moon, Choi, and Jung (2012), while investigating the nature of international experience, found that non-work international experience had a higher impact than work international experience on expatriates' CQ, and Morrell, Ravlin, Ramsey, and Ward (2013) found that international experience positively affected all dimensions of CQ.

Although studies investigating the generic relationship between international experience and CQ are numerous, studies investigating

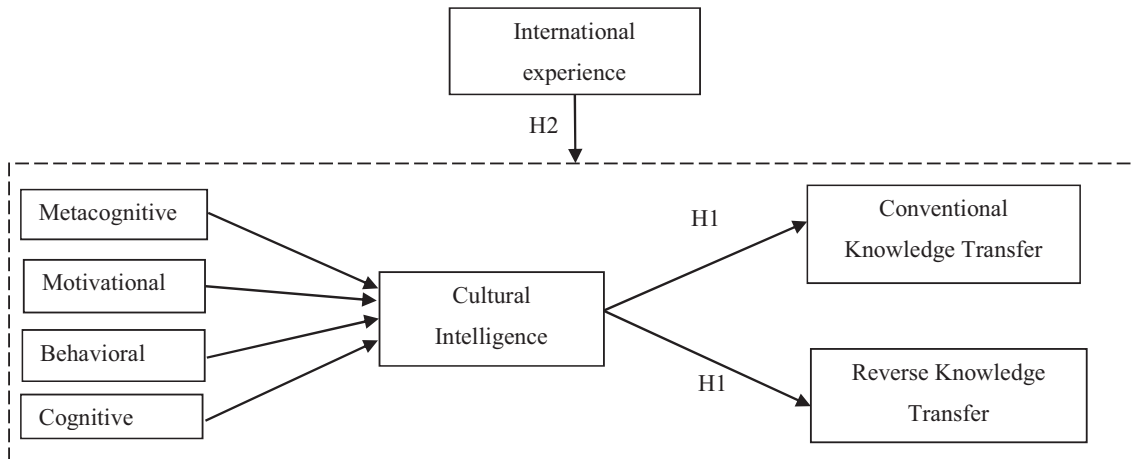


Fig. 1. Proposed model.

whether international experience affects CQ in particular domains, such as expatriates' assignments and KT, are lacking (Kusumoto, 2014).

We argue that expatriate managers with international experience had a chance to interact and deepen their cultural knowledge. This exposure to other cultural environments enabled them to develop cognitive cross-cultural skills. Therefore (Fig. 1):

Hypothesis 2. International experience moderates the relationship between cultural intelligence, in all its dimensions (metacognitive, cognitive, motivational, and behavioral) and knowledge transfer (conventional, H2a, and reverse, H2b).

3. Methodology

3.1. Sample

The target population of this study was senior expatriate managers employed in subsidiaries of foreign MNCs active in Croatia. Subsidiaries were selected through the Orbis database, which comprised 841 expatriate managers registered with the Croatian government as of 20th January 2015. Companies employing expatriates were first contacted via phone and, upon agreement to participate in the study, a questionnaire was sent to managers via email. At the end of the process, 103 responses were valid (Vlajčić, 2015; Vlajčić, Marzi, Caputo, & Dabic, in press). The sample of companies is cross-sectorial and diverse in terms of age and size of the subsidiary (Table 1).

3.2. Measures and variables

The independent variables are the dimensions of Cultural Intelligence (CQ). The dimensions were measured using the Cultural Intelligence Scale (CQS) developed by Ang et al. (2007) which involves: metacognitive CQ (4 items), cognitive CQ (6 items), motivational CQ (5 items), and behavioral CQ (5 items). The variables were operationalized on a 7-point Likert scale.

Table 1
Demographic characteristics of the respondents.

Gender:	Age:	Education level:	Number of expatriate assignments (6 month):	Time spent at the subsidiary:					
Female	18.6%	25–35	24.3%	High school	2.0%	1	33.7%	< 6 months	7.3%
Male	79.1%	35–45	38.4%	College degree	20.0%	2	26.3%	6–12 months	14.6%
		45–55	26.3%	Master's degree	56.1%	3	15.8%	12–24 months	19.8%
		> 55	8.1%	Doctoral degree (PhD)	16.0%	4	6.3%	24–36 months	13.5%
				Other	3.0%	5 or more	17.9%	> 36 months	44.8%

Note: 2.90% of respondents did not report gender, age and educational level.

The study has two dependent variables: Conventional Knowledge Transfer (CKT) and Reverse Knowledge Transfer (RKT). CKT and RKT were measured using the 6-item scale developed by Yang et al. (2008) as revised by Najafi-Tavani et al. (2012). Variables were operationalized on a 7-item Likert scale.

The moderating variable is international experience. As suggested by Hechanova, Beehr, and Christiansen (2003) and Lee and Sukoco (2010), the variable was operationalized as a binary variable, where 0 indicates no previous international assignment and 1 a previous international assignment.

Previous studies in management (e.g., Ang, Van Dyne, & Koh, 2006; Li, Mobley, & Kelly, 2016), and in other fields of sciences as well (Herrmann et al., 2007), have found contrasting results about the effect of age and gender on CQ and cross-cultural adaptation. Hence, age and gender were chosen as control variables. Age was operationalized by dividing the sample into two groups: below 45 and above 45.

4. Results and findings

The PLS method, a variance-based structural equation modeling, was utilized as it is particularly appropriate for studies in the early stage of theoretical development, studies using previously validated scales, and studies with a relatively small sample size (Hernández-Perlines, Moreno-García, & Yañez-Araque, 2016). Statistical analyses were performed using SmartPLS v. 3.2.6. (Ringle, Wende, & Will, 2017) as this software allowed for a simultaneous evaluation of the measurement and structural model (Chin, 1998).

PLS-SEM is a multivariate modeling technique useful for testing multiple dependent and independent latent constructs (Mathwick, Wiertz, & De Ruyter, 2008). Compared to Linear Structural Relationship Modeling or Multiple Regression Method, PLS-SEM calculates relationships between all variables at the same time and does not require multivariate normality (Zhou, Zhang, Su, & Zhou, 2012). Since CQ comprises several sub-dimensions, a higher-order model or a hierarchical component model (HCM) was created to test the researched

model (Lohmoller, 1989). PLS-SEM methodology, using a hierarchical component model (HCM), allows us to observe each dimension of CQ independently through a higher order construct which, by theoretical definition of HCM modeling, is a full mediator (Hair, Hult, Ringle, & Sarstedt, 2017) in the process of indirect relationships between each dimension of CQ and CKT/RKT.

PLS-SEM allows for each dimension to be analyzed separately and a different theoretical explanation to be offered for each (Hulland, 1999; Ott & Michailova, 2016). To reduce the number of relationships in the model, making the model more parsimonious and resistant to collinearity problems (Hair et al., 2017), the HCM was included in the analysis. In line with the theoretical underpinnings of the model (Ott & Michailova, 2016), the repeated indicator approach (Hair et al., 2017) was used in a reflective-formative type of HCM in order to establish a measurement model.

To ensure that the data fit the proposed theory, measurement models were evaluated (Afthanorhan, 2013; Barclay, Higgins, & Thomson, 1995; Chin, 1998; Compeau & Huff, 1999; Yi & Davis, 2003). The confirmation of the statistical significance of path coefficients in the model was ensured throughout the evaluation of the structural model using a bootstrapping procedure (5000 sub-samples; Hernández-Perlines et al., 2016).

4.1. PLS results

The PLS model was interpreted and analyzed in two steps in order to ensure the validity and reliability of the measurement scales: (a) interpretation of the measurement model; and (b) interpretation of the structural model (Barclay et al., 1995).

4.1.1. Analysis of the measurement model

This model contains six reflective constructs and one second-order construct which includes latent variable scores for the four dimensions of CQ (a similar methodological approach was also taken by Zaim, Tatoglu, & Zaim, 2007; Bruhn, Georgi, & Hadwich, 2008; Zhang et al., 2011). Tables 2 and 3 present the parameters used to evaluate internal consistency and reliability.

The results indicate that the items measured in this research possess statistically significant (t -values > 2.58 ; Hair, Black, Babin, Anderson, & Tatham, 1998) and satisfactory loadings values (> 0.7 ; Hair et al., 1998; de Pablo González, Pardo, & Perlines, 2014). The loadings below 0.7 (4 items) were kept in the model as they were not critically low and still had theoretical importance for the construct definition (Okazaki & Taylor, 2008). Cronbach's Alpha's levels for all latent constructs were above 0.7, demonstrating unidimensionality and high internal consistency of the measurement scale (Kline, 2011). The composite reliability of all seven constructs is above 0.8 and below 0.95, which is acceptable according to Nunnally and Bernstein (1994). Finally, the convergence validity, which relies on the average variance extracted (AVE) and presents how much of the latent constructs variance is explained by the indicators, was above the recommended value of 0.5 for all constructs (Hair, Black, Babin, & Anderson, 2010). The model's discriminant validity also relies on AVE. Correlations between each pair of latent constructs do not exceed the square root of each construct's AVE (Fornell & Larcker, 1981), with the exception of the second-order formative construct (CQ-HCM) and the latent constructs it comprises, as foreseen by Hair et al. (2017). One of the critiques of the PLS-SEM technique is that it does not contain adequate global measures of model fit. However, since the PLS-SEM technique is focused more on prediction than on explanatory modeling, the overall fit measures are questionable, and researchers are advised to avoid its use (Hair et al., 2017; Hair, Ringle, & Sarstedt, 2011; Henseler & Sarstedt, 2013).

4.1.2. Analysis of the structural model

The analysis of the structural model relies on the evaluation of the statistical significance of structural coefficients presented in the PLS

model. Structural coefficients correspond to β values in the Ordinary Least Squares regression (Henseler, Ringle, & Sinkovics, 2009), however we used a bootstrap method (5000 sub-samples; Hernández-Perlines et al., 2016) instead. The study confirms H1a: direct effect between CQ and CKT. The direct effect is positive and is statistically significant ($\beta = .216$; $t = 2.226$; $p < .05$; see Fig. 2). Furthermore, the estimation of the indirect effect of each dimension of CQ on CKT through CQ-HCM, which is theoretically defined in HCM modeling as a full mediator in this process (Hair et al., 2017), shows positive and significant results (Table 4).

The study supports H1b: direct effect between CQ and RKT. In this case, direct effect is positive and statistically significant ($\beta = .185$; $t = 2.018$; $p < .05$; Fig. 2). In addition to direct effect, this research also measures the indirect effect of each dimension of CQ on RKT. The indirect effects of each dimension of CQ on RKT are positive and significant, with the exception of cognitive CQ ($t = 1.888$; Table 4).

Furthermore, our analysis of the structural model also presents the R^2 and Q^2 as a measure of model consistency and predictive relevance. These measures indicate low consistency ($R^2(\text{CKT}) = 0.046$; $R^2(\text{RKT}) = 0.034$) as well as low accuracy and predictive relevance ($Q^2(\text{CKT}) = 0.016$; $Q^2(\text{RKT}) = 0.015$) (Neter, Wasserman, & Kutner, 1990). These results were expected as similar results are commonly obtained in organizational behavior research, particularly when the focus is on investigating the effects between given constructs (Baron, Franklin, & Hmieleski, 2016; Eastman, 1994; Pieterse, Van Knippenberg, Schippers, & Stam, 2010). In this case, it was not realistic to expect that one variable and its dimensions alone could explain a significant amount of variation in the dependent variables.

For testing H2, i.e. the importance of international experience for the relationships between CQ dimensions and KT, PLS-MGA was used (Hair et al., 2017). The total sample of 103 expatriate managers was divided into two sub-samples: 38 managers with no international experience (this being their first expatriate assignment), and 65 managers with international experience (this being at least their second expatriate assignment). The PLS-MGA analysis examined the statistical significance of two comparable sub-samples' path coefficients. The path coefficients of different sub-samples allow us to see which path is different, how different they are, and whether or not there is a difference in path direction. The results of the PLS-MGA indicate that there is no statistically significant difference between the sub-sample with international experience and the sub-sample without international experience (Table 5). Finally, the control variables (age and gender) were tested through PLS-MGA. No statistically significant difference between the sub-samples was found, indicating that the control variables had no effect.

5. Discussion

This study provides supportive evidence about the importance of Cultural Intelligence (CQ), in all of its dimensions (metacognitive, cognitive, behavioral, and motivational), for expatriate managers in the bi-directional process of KT (both CKT and RKT). Firstly, the results of our PLS empirical analysis support H1 and indicate that CQ in all its dimensions significantly affects the KT processes carried out by expatriate managers in both directions, with the exception of cognitive CQ and RKT, which is also significant but only at the 10% level. Furthermore, and quite interestingly, the results of testing H2 indicate that the previous international experience of expatriate managers does not play a significant role in the moderating of the relationship between CQ in all its dimensions and KT. H2 was thus not supported.

The results supporting H1, indicating that the dimensions of CQ influence CKT and RKT processes, allow us to conclude that CQ acts in the codification process of KT. In particular, as knowledge management literature has already stressed, knowledge needs to be codified in a language which is understandable to all stakeholders (Davenport & Prusak, 1998; Ruggles, 1997). Expatriate managers' CQ supports these

Table 2
Latent construct, constructs Cronbach's Alpha, measurement items, factor loadings, T-values.

	Factor loading	t-statistics
<i>Reverse Knowledge Transfer Cronbach's Alpha = 0.854</i>		
To what extent have you used technical innovation ^a	0.704	3.667
To what extent have you used know-how in manufacturing ^a	0.769	4.04
To what extent have you used sales networks ^a	0.67	3.627
To what extent have you used brand names ^a	0.806	4.431
To what extent have you used financial resources for research and development (R&D) ^a	0.851	5.164
To what extent have you used managerial capabilities ^a	0.75	4.281
<i>Conventional Knowledge Transfer Cronbach's Alpha = 0.829</i>		
To what extent have you used technical innovation capabilities ^b	0.692	4.264
To what extent have you used know-how in manufacturing ^b	0.712	4.312
To what extent have you used sales networks ^b	0.796	5.363
To what extent have you used brand names ^b	0.832	5.633
To what extent have you used financial resources for research and development (R&D) ^b	0.78	5.079
To what extent have you used managerial capabilities ^b	0.551	3.28
<i>MetaCognitive CQ Cronbach's Alpha = 0.854</i>		
I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds.	0.821	21.297
I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me.	0.816	20.886
I am conscious of the cultural knowledge I apply to cross-cultural interactions.	0.86	24.965
I check the accuracy of my cultural knowledge as I interact with people from different cultures.	0.838	32.567
<i>Cognitive CQ Cronbach's Alpha = 0.838</i>		
I know the legal and economic systems of other cultures.	0.768	12.413
I know the rules (e.g., vocabulary, grammar) of other languages.	0.538	5.488
I know the cultural values and religious beliefs of other cultures.	0.822	21.75
I know the marriage systems of other cultures.	0.772	11.052
I know the arts and crafts of other cultures.	0.817	16.092
I know the rules for expressing non-verbal behaviors in other cultures.	0.716	12.81
<i>Motivational CQ Cronbach's Alpha = 0.825</i>		
I enjoy interacting with people from different cultures.	0.798	23.668
I am confident that I can socialize with locals in a culture that is unfamiliar to me.	0.777	19.241
I am sure I can deal with the stresses of adjusting to a culture that is new to me.	0.739	12.881
I enjoy living in cultures that are unfamiliar to me.	0.787	14.107
I am confident that I can get accustomed to the shopping conditions in a different culture.	0.732	11.514
<i>Behavioral CQ Cronbach's Alpha = 0.918</i>		
I change my verbal behavior (e.g., accent, tone) when a cross-cultural interaction requires it.	0.861	23.932
I use pause and silence differently to suit different cross-cultural situations.	0.829	16.367
I vary the rate of my speaking when a cross-cultural situation requires it.	0.898	36.32
I change my non-verbal behavior when a cross-cultural interaction requires it.	0.88	32.698
I alter my facial expressions when a cross-cultural interaction requires it.	0.873	39.663
<i>Cultural Intelligence-CQ (Second-order, reflective-formative construct) Cronbach's Alpha = 0.726</i>		
MetaCognitive CQ	0.73	11.966
Cognitive CQ	0.677	7.959
Motivational CQ	0.779	19.125
Behavioral CQ	0.776	24.219

^a Please rate to the best of your ability which kind of knowledge you transferred from the subsidiary to the headquarter.

^b Please rate to the best of your ability which kind of knowledge you transferred from the headquarter to the subsidiary.

processes, as a manager with high CQ is more prone to adapt and function in unfamiliar environments (Ang & Massingham, 2007). However, this needs further clarification as the two processes, (CKT and RKT), do not share the same transfer logic. CQ consequently impacts them differently.

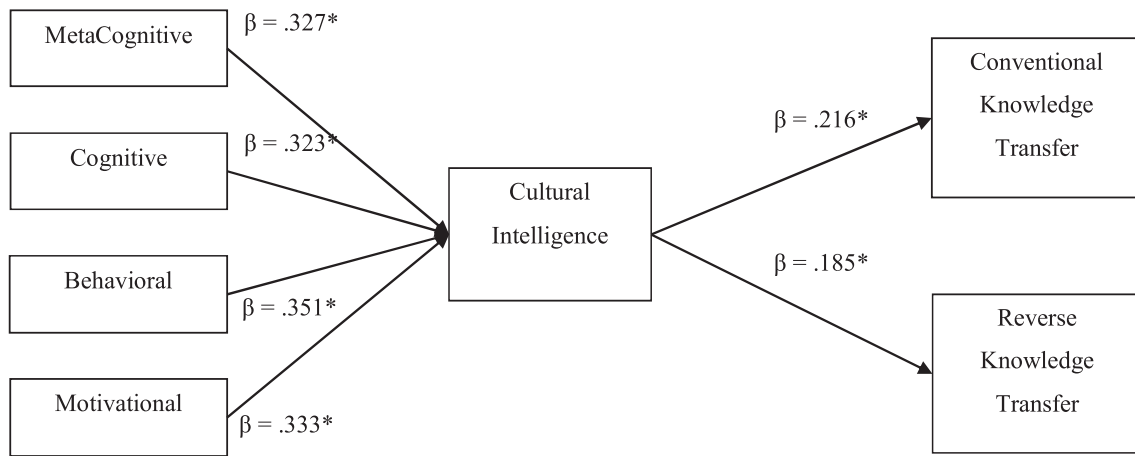
In the CKT process, the four dimensions of CQ assist in the

decodification of knowledge originally codified at headquarters. This decodification allows for the diffusion of knowledge in a specific cultural environment that has its own laws and customs, in this case Croatia. Our findings indicate that high cognitive CQ and metacognitive CQ, in particular, are necessary to improve the diffusion of knowledge from headquarters to a subsidiary. This is because the expatriate

Table 3
Construct reliability and validity, discriminant validity.

	Cronbach's Alpha	rho_A	Composite reliability	Average variance extracted (AVE)	RKT	CKT	MC	COG	MOT	BEH	CQ-HOC
Reverse Knowledge Transfer (RKT)	0.854	0.875	0.891	0.579	0.761						
Conventional Knowledge Transfer (CKT)	0.829	0.864	0.873	0.537	0.652	0.73					
MetaCognitive (MC)	0.854	0.855	0.901	0.696	0.095	0.19	0.834				
Cognitive (COG)	0.838	0.859	0.88	0.555	0.267	0.21	0.296	0.745			
Motivational (MOT)	0.825	0.83	0.877	0.588	0.086	0.06	0.463	0.418	0.767		
Behavioral (BEH)	0.918	0.921	0.939	0.754	0.118	0.19	0.438	0.384	0.479	0.868	
CQ-HOC (second order construct)	0.726	0.728	0.83	0.55	0.185	0.22	0.731	0.694	0.788	0.778	0.742

Note. Diagonal elements present the square root of the AVE (in bold).



*p < 0.05

R² (CKT) = 0.046; R² (RKT) = 0.034

Fig. 2. Analysis of proposed model (direct effect).

Table 4

Effect of cultural intelligence dimensions (behavioral, cognitive, metacognitive, motivational) on knowledge transfer (CKT, RKT), indirect effect.

	Original Sample (O)	T statistics (O/STDEV)	P values
Behavioral → Conventional Knowledge Transfer	0.076	2.155	0.031
Behavioral → Reverse Knowledge Transfer	0.065	1.98	0.048
Cognitive → Conventional Knowledge Transfer	0.07	2.156	0.031
Cognitive → Reverse Knowledge Transfer	0.06	1.888	0.059
MetaCognitive → Conventional Knowledge Transfer	0.071	2.118	0.034
MetaCognitive → Reverse Knowledge Transfer	0.06	1.986	0.047
Motivational → Conventional Knowledge Transfer	0.072	2.244	0.025
Motivational → Reverse Knowledge Transfer	0.062	2.072	0.038

Table 5

Results of testing H2 (using PLS-MGA) - international experience.

	Path Coefficients-diff (no previous expatriate experience - previous expatriate experience)	p-Value (no previous expatriate experience vs Previous expatriate experience)
MetaCognitive → CQ-HOC	0.054	0.781
Cognitive → CQ-HOC	0.136	0.071
Motivational → CQ-HOC	0.057	0.796
Behavioral → CQ-HOC	0.099	0.953
CQ-HOC → CKT	0.114	0.174
CQ-HOC → RKT	0.122	0.517

manager needs to have a good understanding and sufficient control of the specific cultural environment in which he or she is diffusing knowledge in order to be able to successfully decodify and adjust the carried knowledge to the local environment. Furthermore, expatriate managers also need to channel their energy and attention towards familiarizing themselves with cultural differences and finding ways to overcome them (supported by motivational CQ). This would ease the decodification process, i.e. process of adjusting. Finally, expatriate managers must be good at verbal and non-verbal communication with people from different cultures (supported by behavioral CQ) because the process of decodification and diffusion of carried knowledge is done in the subsidiary - a local environment - through interaction with local employees. KT thus becomes a task specific of expatriate managers, which is in line with the findings of Rose et al. (2010) who found a positive relationship between behavioral CQ and job performance.

With regard to the RKT process, expatriate managers' CQ

dimensions were found to support knowledge codification, and play a role in removing the specific cultural path dependency of the place in which the knowledge is created. This is necessary as the knowledge created in a specific environment can be locally and culturally dependent. In our case, we suppose that a manager with high CQ will be able to remove the natural cultural influence embedded in the knowledge produced in Croatian subsidiaries and enable a transfer of the knowledge back to the headquarters in a way that is understandable to a large set of participants, i.e. to make the knowledge available to all organizational parts. Clearly, expatriate managers need to possess a solid acquaintance with the culture in which the knowledge is created, an acquaintance which goes beyond knowing facts about the culture. To properly support the codification of knowledge, expatriate managers need to be able to function in different contexts by adapting to the local culture. Furthermore, expatriate managers must be highly motivated to acquire new cultural knowledge as well as to interact with different cultures. Only managers who possess these qualities can successfully recognize and remove the specific cultural path dependency of the place where the knowledge is created and allow this knowledge to be transferred across-borders (e.g., Gorovaia & Windsperger, 2010; Liu et al., 2010).

One of the most important roles assigned to expatriate managers is KT (e.g., Chang et al., 2012; Kusumoto, 2014; Peltokorpi & Vaara, 2014). However, expatriate managers are not pure knowledge carriers but should be perceived as 'transfer facilitators' or 'boundary spanners' in the KT process (Fang, Jiang, Makino, & Beamish, 2010, p.31). As intermediators in the KT process, their natural ability to effectively acclimatize to unfamiliar and culturally diverse settings is more than necessary. These research findings serve as a bridge to the previous research findings of Kim et al. (2008), Elenkov and Manev (2009), Lee

and Sukoco (2010), and Wu and Ang (2011). They demonstrate the importance of CQ as a key determinant of expatriate effectiveness on international assignments. Our findings also align themselves with the findings of Buckley et al. (2006) who showed that cultural awareness (a possible antecedent of CQ) improves the success of KT. Our results confirm that managers with higher levels of CQ can help an organization to overcome the tensions between headquarters and subsidiaries in KT processes.

The results of testing H2 indicate that previous international experience does not play a significant role in moderating the relationship between CQ (in all its dimensions) and KT (CKT and RKT). Thus, this research does not support the previous studies of Black et al. (1992), Lee and Sukoco (2010), and Morrell et al. (2013) who found a correlation between CQ and previous international experience. However, this result is still important as it strengthens our understanding of the pivotal role played by CQ in facilitating KT. In the absence of moderation from previous international experience, we can confirm that, even if a manager is on his or her first assignment, a prediction of his or her success can be based on CQ as CQ is a trait that can be assessed and learned (Earley & Peterson, 2004; Eisenberg et al., 2013; Ng et al., 2009).

The results also indicate a low consistency within the model, as well as low accuracy and predictive relevance. This, however, is quite common in research on organization behavior (Baron et al., 2016; Eastman, 1994; Pieterse et al., 2010). Moreover, the findings of low consistency, accuracy, and predictive relevance were anticipated as it is unrealistic to expect that the four CQ dimensions on their own could explain a significant amount of variation of the dependent variable (CKT and RKT). KT is complex and demanding and there many other variables affect the process; for example, the existence and richness of transfer mechanisms (Gorvoia & Windsperger, 2013), the properties of the units (Li, Chang, Lin, & Ma, 2014; Szulanski, 1996), the relationship between the source and the recipient (Ambos & Håkanson, 2014), and the properties of the knowledge itself (Teo & Bhattacharjee, 2014).

6. Conclusions

As globalization gets more and more complex and international human resource management practices receive growing attention, CQ has become an increasingly important managerial skill (Korzilius, Bücken, & Beerlage, 2017). The aim of this paper is to understand the role of CQ in all its dimensions in CKT and RKT in MNCs. Although there are some research articles dealing with the impact of CQ on expatriate performance, this paper enriches the literature by focusing on the direct impact of expatriate CQ, in all its dimensions, on the KT process in both directions.

Firstly, the results of our PLS empirical analysis, where 103 expatriate managers working in Croatia were tested, indicate that CQ has a positive effect on CKT and RKT processes. Secondly, the results showed that having international experience does not moderate the relationship between CQ and KT, which offers a new and interesting insight in the role of CQ in KT.

Expatriate managers, acting as gatekeepers who traverse the cross-cultural divide between a headquarters and a subsidiary, use their CQ as a filter in the codification process. In the case of CKT, CQ helps to decodify knowledge codified at headquarters. Conversely, in the case of RKT, the CQ of expatriate managers helps to codify and remove the specific cultural path dependency of the place where the knowledge is created.

By unveiling the impact of CQ on KT in MNCs, this study provides several theoretical implications useful for both knowledge management and international business scholars. Firstly, it contributes to the lacking literature on CQ within the field of expatriate management and MNCs by presenting one of the first studies on this phenomenon. Secondly, it contributes to the body of knowledge on CQ by expanding the domains in which CQ has been studied. Thirdly, it offers interesting insights on

the role of the previous international experience of a manager in terms of their ability to support KT. Finally, it opens the door for future studies to deepen the investigation on the role of CQ. In particular, knowledge management scholars could study the role of CQ in the transfer process, while international business scholars could investigate the context dependent variables which influence the transfer process.

This study also offers important practical implications. Babcock (2004) estimated that Fortune 500 companies lose 31.5 billion dollars per year as a result of failing to share knowledge adequately. It is the goal of managers and researchers alike to obtain a better understanding of what regulates the KT in order to improve management and utilization of knowledge. In line with our results, MNCs should pay special attention to the preparation of expatriates for their assignments as, in addition to their responsibility for change and control, the most important role of expatriate managers is the transfer of knowledge. This preparation should focus specifically on family factors, social factors and, as this research indicates, individual factors, particularly CQ - the ability of expatriates to function easily and effectively in situations characterized by cultural diversity. In order to improve expatriates' CQ, MNCs should invest in cross-cultural training (Fischer, 2011) and insist upon the improvement of the institutional framework, i.e. persuade business schools to participate in the preparation of students for multicultural environments (Eisenberg et al., 2013).

As in every study, this study does have several limitations which could be addressed by future research in both knowledge management and international business, deepening our understanding of CQ and its effects. One of the main limitations of this study is that, to ensure the quality of the sample and increase the relevance of the results, only senior managers were surveyed. As such, the design of the questionnaire used needed to be adapted to the characteristics of participants and the requirements of the legal offices of the participating companies. For example, control variables (such as personality and length of stay in the host country) were deemed to be either removed or were mostly not answered. Future researchers could benefit from including different variables in future studies on the role of CQ and KT. For example, an interesting research question could be related to the role of personality variables in affecting the relationship between CQ and KT.

Another limitation of the study is that, given its novelty and exploratory nature, it focused on discovering the relationship between CQ and KT, rather than understanding how CQ played its role. Future studies could stem from current findings and expand upon understanding the underlying dynamics of the role of CQ in KT. In particular, this paper was not focused on investigating the ways in which CQ played this role. Such questions are of pivotal importance and could be investigated through a qualitative investigation of KT cases. Moreover, studies could investigate the ways in which questions should focus on the possible different dynamics that CQ could play upon in CKT and RKT. Another stream of possible future research could be related to cultural distance and cultural values, and how those dimensions impact the relationship between CQ and KT. Similarly, given the organizational nature of KT, future studies could also enlarge our understanding of this relationship by investigating the possible impact of organizational culture, practices, and processes.

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