MASTER THESIS

UNDER WHAT CONDITIONS DO END-USERS PERCEIVE HIGH VALUE OF HR SHARED SERVICE CENTERS?

A Service-Dominant Logic Perspective

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PREFACE

This master thesis is written to finish my master's degree in Business Administration at the University of Twente. The premise of this thesis was to explain how HR SSCs can succeed in reaping their benefits by exploring in what way the end-users of the HR shared services perceive high value. Through the application of S-D logic, this thesis offers new insights in the necessity and sufficiency of knowledge resources of both the HR SSC and the end-user and how they combine in the process of achieving high value. The data that has been used was collected anonymously and was analyzed through a fuzzy set compartive analysis. The thesis is intented for everyone who is interested in value creation for HR SSCs and/or value creation in service environments in more general.

I would like to thank a number of people that have helped me in the process of writing this thesis. First of all I want to thank my first supervisor, Jeroen Meijerink, for his useful support and advise in writing this thesis and for giving me the possibility of using his dataset. The meetings provided me useful feedback and his enthousiasm encouraged me to elevate this thesis to a higher level. Secondly, I would also like to thank my second supervisor, Sandor Löwik, for his critical eye and ideas, which stimulated me to improve the quality of this thesis. Finally special thanks to Jens, my family, friends, and collegues, for their continuous support, help, and interest during this whole process.

By finishing this thesis, a period of almost three years of academic research will come to an end. I have experienced the final phase of writing this thesis as exhausting, but also very valuable and educational. My perspective on HR as a service provider is enriched and has helped me in being more conscious in my role as HR advisor for SMEs at my current job.

Almelo, March 2014

Britt Spijkerman

SUMMARY

The establishment of shared service centers (SSC) for the delivery of human resources (HR) originates from long-term and strategic benefits (Janssen & Joha, 2006). Resource bundling give end-users control to develop HR services together in order to gain cost-efficiency and to enhance service quality (Meijerink, Bondarouk, & Looise, 2013b). However, to reap these benefits HR SSCs have to offer services that create value for the ones who make use them: the end-users (Meijerink & Bondarouk, 2013).

A theoretical approach that addresses value creation is the *Service-Dominant (S-D) Logic*. Within the S-D logic, value is created collaboratively and reciprocally in interactions between the supplier and consumer through the integration of (knowledge) resources (Vargo & Lusch, 2004). The HR SSC offers HR shared services (i.e. *value propositions*) that facilitate the value-creating process of the end-user, such as the knowledge of the staff (i.e. *human capital*), the knowledge shared among staff (i.e. *social capital*) and the knowledge that is stored (i.e. *organizational capital*). These different knowledge dimensions are captured in the *intellectual capital concept*. Such value propositions cannot create or add value for the end-user, as the end-user determines what value is (Vargo and Lusch, 2011). They can therefore only be realized through the end-user's usage of the offered services. In this consumption process, end-users rely on their own knowledge (i.e. human capital) in order to create *value-in-use.* In this case, the deployment of high-level intellectual capital is *complemented* by the human capital of the end-user, so that the end-user becomes a *value creator*. Because the HR SSC's intellectual capital and the end-user's human capital are needed to start off the value creation process, it was expected that they are both necessary conditions for a high end-user perception of HR SSC value (proposition 1). Since the S-D logic suggests that value creation rests on both the HR SSC and the end-user (Meijerink et al., 2013a; Vargo & Lusch, 2004), the end-user's human capital and the HR SSC's intellectual capital are interrelated. Besides combinations in which one of the intellectual capital dimensions is complemented by the human capital of the end-user, there are also situations in which this is not possible due to the absence/low quality of either dimensions. When the end-user cannot create value out of the offered HR shared services, he or she seeks for direct interactions with the HR SSC and becomes a *co-producer* (Gauthier & Schmid, 2003; Grönroos & Vioma, 2013). Through this interaction, the HR SSC gets the opportunity to understand and meet the needs of the end-user, and the end-user to influence the value proposition. By reshaping the value proposition, the HR SSC becomes a *co-creator* in the end-user's consumption process. Value creating processes like these indicate the HR SSC's intellectual capital can be *substituted* by the human capital of the end-user, but also the end-user's human capital can be replaced by the intellectual capital of the HR

SSC. Hence, knowledge resources of the end-user and HR SSC may substitute and/or complement each other. It was believed that only the combination (i.e. *configuration*) of certain knowledge resources guarantee the outcome to occur instead of one attribute in isolation (Delery & Doty, 1996). Therefore it was expected that multiple combinations of the HR SSC's intellectual capital and the end-user's human capital are sufficient for the end-user to perceive high-level value (proposition 2). Because in some combinations the resources are not at the required high level, co-production will take place (proposition 3)

In order to test the three research propositions, data was collected from a representative sample of 19 Dutch HR SSCs by using surveys for both HR SSC managers and end-users. Data was analyzed using a fuzzy set analysis in order to find which combinations lead towards a high value perception and to determine the necessity and sufficiency of knowledge resources and co-production.

The findings explain that there are four pathways in which the knowledge resources of the HR SSC and the end-user combine for a high value perception. The first configuration combines the presence of high end-user human capital and high co-production, and the absence of high organizational capital of the HR SSC. The second configuration combines the presence of high end-user human capital, high HR SSC human capital, and high HR SSC social capital, and the absence of high co-production. The third combines the presence of high level human capital, and the absence of both high level HR SSC social capital and organizational capital. Finally, the fourth configuration combines high level end-user human capital, and the absence of high level HR SSC human capital, HR SSC social capital, and co-production. The findings contribute to research for several reasons. First, offering a value proposition is trivial, and thus the intellectual capital of the HR SSC for high value perception is necessary but empirical irrelevant. Second, high level human capital of the end-user is a necessary condition for high perceived value and can substitute for low levels of intellectual capital of the HR SSC. Hence, proposition 1 was accepted. Third, the extent to which the HR SSC has to provide high level resources for the end-user in order to facilitate the value creation is minimal. Fourth, the findings acknowledge the end-user's role as value creator and co-producer and the HR SSC's role as a value facilitator and co-creator. This means that there are multiple sufficient combinations sufficient for the end-user to perceive high value of the HR SSC, and thus proposition 2 was supported. Finally, co-production does not always have to become part of the value creation process when one of the knowledge resources is lacking. Proposition 3 was therefore partly accepted. A practical implication for managers in the field is to at least invest in developing high level human capital, as that is a necessary condition. Subsequently, managers can decide which configuration they are able to achieve with the resources they obtain, and invest in the resources they lack for that configuration in order to achieve perceived HR SSC value.

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INTRODUCTION

An increasing trend in recent years has been the establishment of shared service centers (SSC) for the delivery of human resources (HR). An HR SSC is an intra-organizational business unit that centrally bundles resources in order to efficiently provide HR services for other organizational units (Janssen & Joha, 2006). Initially, these HR services were transactional, and thus merely consisted of administrative responsibilities (Cooke, 2006; Farndale, Paauwe, & Hoeksema, 2009). Nowadays, some HR SSCs started to offer more transformational HR services in addition, such as recruitment, and training and development (Meijerink, Bondarouk, & Maatman, 2013c). The delivery of HR services by the HR SSC may therefore cover "a wide range of the responsibilities of the HRM function within an organization" (Maatman, Bondarouk, & Looise, 2010, p. 328).

The growing popularity of HR SSCs seems to originate from the long-term and strategic benefits they bring (Janssen & Joha, 2006). These benefits are captured in two conflicting organizational models: centralization and decentralization (Farndale et al., 2009; Janssen & Joha, 2006; Maatman et al., 2010). Through centralization, resources and activities are bundled on a corporate level to gain cost-efficiency, but at the expense of customer focus. Decentralization aims to give business units the control to develop HR services together in order to enhance service quality, but is more costly due to inefficiencies related to resource duplication (Meijerink, Bondarouk, & Looise, 2013b). Organizations that are able to manage the trade-offs of these two conflicting demands can capture both of their benefits, while limiting their liabilities (Farndale et al., 2009; Janssen & Joha, 2006; Meijerink, 2013). Thus, HR SSCs are considered as hybrid organizational models that centrally perform HR activities while being controlled by decentralized end-users (Meijerink & Bondarouk, 2013).

Still, establishing an HR SSC is not just plain sailing. Although combining centralization and decentralization models is necessary for improving HR delivery, it is insufficient for satisfying the needs of employees and the management of different business units (i.e. end-users) (Meijerink & Bondarouk, 2013). Primary causes for this are: the lack of the skills and competencies of HR SSC staff, inability of HR SSC staff to utilize concentrated knowledge, inaccurate or loss of personal data, lack of knowledge on usage by the end-user, reduced service quality, and/or intensification of HR administrative tasks by the line (Cooke, 2006; Janssen & Joha, 2006; Meijerink & Bondarouk, 2013; Redman, Snape, Wass, & Hamilton, 2007). Cooke (2006) found that dissatisfied end-users do not make use of self-services and instead perform shadow administrations in which they carry out HR work by themselves. As a consequence, inefficiencies will occur and resources will be wasted. In such situations it is impossible to

achieve either cost-efficiency or service quality: the HR SSC will fail in realizing its promised benefits.

To reap these benefits HR SSCs have to offer services that create value for the ones who make use them: the end-users (Meijerink & Bondarouk, 2013). HR SSCs depend on the end-users' collaboration, since the majority of the HR shared services are provided online or as call center services and require self-service technologies (Farndale et al., 2009). End-users make use of such services when they expect that their needs will be better satisfied or will be satisfied at a lower cost (e.g. money, time, and effort). In other words, quality positively influences utility, whereas costs have a negative effect on utility (Zeithaml, 1988). As that gap between quality and costs gets smaller, the *perceived value* increases (Novack, Rinehart, & Langley, 1994; Parasuman, Berry, & Zeithaml 1991). Therefore, the end-user's perceived value of the HR SSC refers to the "the end-user's perception of the overall utility of HR shared services based on a trade-off between their quality and costs'' (Meijerink, 2013, p. 9). In other words, the benefits of the HR SSC can only be captured through the end-user's utilization of the HR services, which will take place when the HR SSC's value is perceived as positive.

PROBLEM STATEMENT

Thus, value is defined by the receiver rather than by the provider (Ulrich & Brockbank, 2005). It is important to know what value is to understand how it can be created. A theoretical approach that addresses value creation is the Service-Dominant (S-D) logic. Within the S-D logic, value is created collaboratively and reciprocally in interactions between the supplier and customer through the integration of knowledge, technology, and/or other resources (Vargo & Lusch, 2004). The customer relies on his or her own resources and interacts with the supplier to acquire resources for creating value (Priem, 2007). The integration of these resources takes place at the time of usage (i.e. value-in-use) and therefore value can only be created and determined by the customer through consumption (Grönroos, 2011b; Gummesson, 1998; Lusch & Vargo, 2004; Prahalad & Ramaswamy, 2004; Priem, Li, & Carr, 2012). Meijerink, Bondarouk, & Lepak (2013a) studied the value of HR shared services for end-users by exploring how these end-users themselves influence their value perception of the HR SSC. In line with S-D logic, their findings suggest that knowledge and skills of end-users positively influence the perceived value of HR shared services. However, this does not mean that the resources within the HR SSC itself are unimportant for performing satisfactorily. Having staff with the required skills and competencies is a necessary condition towards creating value, since it enables the HR SSC to better meet the needs of its users (Farndale et al., 2009; Meijerink & Bondarouk, 2013; Ulrich, 1995). But because the HR SSC depends on the involvement of its end-users, the knowledge resources within the HR SSC do not guarantee the creation

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of value (Meijerink & Bondarouk, 2013). HR shared services must be integrated with the end-user's knowledge and skills for value to be perceived. Hence, explaining the value of HR shared services for end-users requires a focus on both the service provider and the user (Meijerink et al., 2013a).

Existing literature lacks insights into how resources integrate and mainly explore specific characteristics of the HR SSC instead, like motives for establishment (Janssen & Joha 2006; Reilly, 2000; Redman et al., 2007), possible structures for organizing (Redman et al., 2007), the impact on the employees, line managers, and/or HR staff (Cooke, 2006; Farndale et al., 2009; Farndale, Paauwe, & Boselie, 2010; Redman et al., 2007; Reilly, 2000), and the evaluation of performance (Cooke, 2006; Redman et al., 2007). Although these studies are useful in understanding the HR SSC phenomenon, they provide no insights in explaining how HR SSC value can be created for end-users (Maatman et al., 2010). As an answer to this gap in literature, some studies started to conceptualize the attributes through which value is created. For example, Maatman et al. (2010), proposed a conceptual model that provides a conceptualization of value creation by the HR SSC within a supplier-consumer relationship context. They argue that the capabilities employed within the HR SSC play a central role in creating value-in-use. Within their model, value creation is contingent on these capabilities, the offered types of HR shared services, and the chosen organizational model. Meijerink et al. (2013b) developed a conceptual model, which represents the importance of the HR SSC's knowledge resources for the creation of value. Here, the intellectual capital concept was treated as an antecedent for HR value. More recently, Meijerink et al. (2013a) emphasize the dependency of the HR SSC on the end-user in the value-creating process and argue that value is created through interactions between the HR SSC and its end-users based on their knowledge resources. Still, how the HR SSC and the end-user interact to explain value has not been uncovered in empirical research yet. Without this information, it stays unclear how the HR SSC can perform satisfactorily. Insights in value perceptions are needed to understand why some firms fail in realizing the HR SSC's promised benefits, while others succeed.

PURPOSE

Given this situation, the purpose of this research is to explore the way in which the knowledge resources of the HR SSC and the end-user combine to achieve a high end-user's value perception. In order to reach this goal, a configurational approach will be applied. A configuration is a specific combination of causal conditions that produce a given outcome of interest (Ragin, 2008). This approach accommodates the concept of equifinality, which means that the desired output can be achieved through multiple paths. The supplier and consumer either rely on different knowledge resources that

interact in order to create mutual value (Vargo, Maglio, & Akaka, 2008). This implies that knowledge resources should not be understood in isolation, but as interdependent. Hence, interrelationships between the HR SSC's and end-users' knowledge resources likely result in multiple configurations leading a high value perception according to the end-user. By applying a configurational approach it is possible to test in what way the HR SSC's and end-users' knowledge resources combine to form value-creating configurations and which of those knowledge resources can be determined as necessary and sufficient in influencing value (Schneider, Schulze-Bentrop, & Paunescu, 2010). A fuzzy set Qualitative Comparative Analysis (fsQCA) will be conducted to empirically test how the HR SSC's and end-users' resources configure to create high value. By doing so, this thesis contributes to existing research in the following ways. First, the main contribution of this research is that it fills the gap about value creation of the HR SSC for end-users that exists in current literature. This thesis provides new insights in HRM literature about the way in which high value can be perceived by considering the HR SSC as a co-creator and the end-user as a co-producer of value. In particular, configurations consisting of knowledge resources of both the HR SSC and the user are taken into account. Second, according to Lusch and Vargo (2006), S-D logic is not complete and still evolving. Brown (2007) calls for empirical testing of S-D logic and emphasizes to build knowledge of the role that customers play in value creation. Therefore, this thesis extends the application of S-D logic to the context of HR SSCs, by empirically testing the interrelationship in knowledge resources of both the supplier and the consumer. Finally, the results of this thesis have implications for practice, since they provide more in-depth in what knowledge resources can be considered as necessary and sufficient in perceiving value and how to build configurations that enhance end-user's value perception in a service context.

OUTLINE

This thesis is structured as follows. This thesis starts with a chapter containing a literature review, focusing on the interaction between the HR SSC. Based on the findings of this literature study, propositions are defined that guide this study. The next chapter describes the research methods that are used to test these propositions. Subsequently, the results of the fuzzy set qualitative comparative analysis will be presented. The following chapter discusses the implications of the findings for both theory and management practice. This thesis ends with a final conclusion.

LITERATURE REVIEW

This chapter contains a literature review to explain how end-user and HR SSC knowledge resources combine to influence value. From this, propositions will follow for further testing.

THEORETICAL BACKGROUND: THE SERVICE-DOMINANT LOGIC

The focus on involving customers in creating services has recently been put forward by the Service-Dominant (S-D) logic. Vargo and Lusch (2004) introduced the S-D logic as an answer to the shortcomings of the underlying traditional Goods-Dominant (G-D) logic. They argue that value cannot be embedded in output; rather, it is created collaboratively and reciprocally in interactions between the supplier and consumer through the integration of resources. From this sense, the HR SSC is considered as an internal service function that delivers professional services (i.e. HR shared services) towards its internal customers: the end-users (Cooke, 2006; Farndale et al., 2010; Lepak & Snell, 1998; Schneider, 1994). Because end-users are the consumers of the provided HR shared services, they are creators of value.

SERVICE

The foundational premise of the S-D logic is that *service* is the unit of exchange. Service refers to "the application of specialized competences through deeds, processes, and performance for the benefit of another entity or the entity itself" (Vargo & Lusch, 2004, p. 2). According to Vargo & Lusch (2004) these specialized competences include operant resources, such as knowledge and skills. Vargo & Lusch (2004) explicitly state that service (singular) should not be confused with services (plural); the former is an interactive process of "doing something for someone" (Lusch & Vargo, 2006, p. 282), whereas the latter must be viewed as the output of a process. The delivery of HR shared services fits to the concept of service provision. First, HR shared services reflect the application of specialized knowledge through HR function competencies (Boselie & Paauwe, 2005; Ulrich, Brockbank, Johnson, & Younger, 2007), dynamic capabilities (Maatman et al., 2010), or intellectual capital (Meijerink et al., 2013b). Second, these specialized competences are applied through HR activities where both the firm and employee can benefit from. For example, the provision of training and development can enhance the well-being of the end-user, which may increase the performance of the firm at the same time (Wilson, 2005). Therefore, the HR activities offered by the HR SSC to its end-users are conceptualized as the provision of HR shared services through the application of knowledge and skills (Meijerink et al., 2013b).

In the S-D logic the unit of analysis for service-for-service exchange is the *service system.* Spohrer, Vargo, Caswell, and Maglio (2008) define the service system as "a configuration of people, technology and other resources that interact with other service systems to create mutual value'' (p. 395). The service system is an open system in which value is created when both parties involved "feel better off than before" (Grönroos, 2011a, p. 242). It functions in two ways. First, it is capable of improving the condition of another service system through sharing its resources. Second, the service system is capable of improving its own condition by acquiring resources of the other service system. Different actors can therefore be considered as service systems when they exchange resources and collaborate with others in reciprocally beneficial ways (Vargo et al., 2008). Hence, the HR SSC and the end-users can be approached as two separate service systems. Through interaction they have the opportunity to influence each other. Direct interactions between the HR SSC and the end-user are enabled by, for example, the use of call center services, in which service-for-service exchange takes place (Farndale et al., 2009; Grönroos, 2011b). End-users acquire the HR SSC's knowledge resources to use these in a self-service process, where they integrate the acquired resources with their own knowledge, skills, and abilities, in order to create value for themselves (Grönroos, 2011b; Priem, 2007; Priem et al., 2012). The HR SSC can engage with the user's consumption process by providing the end-user the required resources (Grönroos, 2011b). Therefore, the HR SSC and the employees are conceptualized as service systems that create mutual value through knowledge exchange.

THE INTELLECTUAL CAPITAL CONCEPT: DEFINING KNOWLEDGE RESOURCES

According to Grant (1996), knowledge resources are the critical input for producing goods and services, and the primary source for creating value (Grant, 1996, p. 109). Knowledge is a valuable resource for creating value, because it enables a firm to better fulfill, or at a lower cost, the needs of its customers than its competitors (Bowman & Ambrosini, 2000). However, since there is no question of competition between HR SSCs, the most important effect of the HR SSC's knowledge resources residing within the HR SSC is to ensure that the services better satisfy the end-users needs and satisfy these needs at a lower cost (Meijerink et al., 2013b).

Organizations have different types of knowledge resources available (Grant, 1996). To capture all these different types of knowledge for the creation of value, the *intellectual capital concept* is adopted. Intellectual capital is defined as "the sum of all knowledge an organization is able to leverage in the process of conducting business to gain competitive advantage" (Youndt, Subramaniam, & Snell, 2004, p. 337). Two phrases of this definition are important to go further into. First, intellectual capital

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requires knowledge to be *utilized* before value can be created. This implies that only the possession of knowledge does not secure the HR SSC to reap its benefits (Bukh, Larsen, & Mouritsen, 2001). Second, intellectual capital as "the sum of all knowledge resources" implies that intellectual capital exists of different types of knowledge (Bontis, 1998; Youndt et al., 2004). As such, knowledge should not be examined independently, but as interdependent. Value follows from the *coexistence* of different types of knowledge resources available within an organization (Bukh et al., 2001; Grant, 1996; Meijerink et al., 2013; Ruta, 2009; Youndt et al., 2004).

In alignment with Youndt et al. (2004), other researchers have recognized intellectual capital as a multidimensional concept as well. Through the years, various models and classifications for conceptualizing intellectual capital have been developed. Most common is the classification of intellectual capital into three sub-dimensions: human, social, and organizational capital (Reed, Lubatkin, & Srinivasan, 2006; Ruta, 2009; Youndt et al., 2004). *Human capital* represents the knowledge, skills, and abilities embodied in individual employees (Kang & Snell, 2009). It cannot be owned by the organization, since individuals possess it. Instead, organizations can increase human capital by investing in HR activities, such as the training and development for employees or the recruitment of new highly educated people (Youndt et al., 2004). *Social capital* captures "the knowledge resources embedded within, available through, and derived from a network of relationships" (Ruta, 2009, p. 563 – 564). Knowledge can be exchanged internally among employees, but also externally with customers, suppliers, or business partners. Through social capital, an organization can learn to understand what a customer wants in a product or service. *Organizational capital* deals with the institutionalized knowledge and codified experience that are embedded or stored in structures, databases, routines, processes, manuals, and so forth (Kang & Snell, 2009; Ruta, 2009; Yang & Lin, 2009; Youndt et al., 2004). In contrast with human capital, organizational capital is the knowledge and experience that the organization actually owns.

Despite the fact that many studies acknowledge intellectual capital as a multidimensional construct, only a few empirically tested the coexistence of its sub-dimensions (Youndt et al., 2004). Those that did test the coexistence indicate that value follows from the *interrelationship* between the three sub-dimensions (Reed et al., 2006; Ruta, 2009). However, these findings also show that such interrelationships depend on different circumstances or contexts and thus are not universally effective in creating value (e.g. Meijerink et al., 2013b; Reed et al., 2006; Subramaniam & Youndt, 2005; Youndt et al., 2004). Based on these studies, Meijerink et al., (2013b) concluded that intellectual capital is *context-dependent*; multiple combinations of human, social and organizational capital are possible to gain the desired outcome.

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Each component of intellectual capital may play unique roles in the process of acquiring, sharing and integrating new knowledge (Yang & Lin, 2009). The next subsections will discuss how HR SSCs combine human, social, and organizational capital for the provision of HR shared services to improve HR delivery, and how end-users apply their human capital in consuming these HR shared services.

INTELLECTUAL CAPITAL OF THE HR SSC

HR SSCs are regarded as "centers of expertise", as they bundle a wide range of knowledge resources and from which firms can benefit economies of scale (Janssen & Joha, 2006). The intellectual capital dimensions reflect these knowledge resources. Within this thesis, the intellectual capital of the HR SSC is conceptualized as the combination of human, social and organizational capital that the HR SSC offers for the end-user's usage (Meijerink et al., 2013a).

The HR SSC's human capital is embedded in the skills and expertise of HR staff (Cooke, 2006). One of the main tasks of the HR SSC is to supply information and advice on HR policy and practice to the end-user via a call center and/or the intranet (Cooke, 2006; Reilly, 2000). Managers perceive the competences of the HR SSC staff as the most critical factor for success, and HR SSC staff without updated knowledge fails in satisfying end-users needs (Farndale et al., 2009; Meijerink & Bondarouk, 2013). Ulrich, Brockbank, Yeung and Lake (1995) found that HR professionals are perceived as more effective, when they show competences in HR delivery, business knowledge, and change management. To conceptualize the HR SSC's human capital, the *HR competences concept* is borrowed as it mirrors the underlying knowledge, skills, and abilities of HR professionals (Boselie & Paauwe, 2005; Han, Chou, Chao, & Wright, 2006). Research into HR competences has shown that that the human capital of the HR SSC staff for the delivery of HR shared services may be distinguished into two dimensions. HR SSC staff should have, on the one hand, competences to execute functional HR shared services (e.g. recruitment, compensation and benefits, training, and payroll), and on the other, competences to use HR technology systems (e.g. HR information systems, HR processes, and databases) (Boselie & Paauwe, 2005; Cooke, 2006; Farndale et al., 2009; Han et al., 2006; Meijerink et al., 2013b; Ulrich et al., 2008; Yeung, Woolcock, & Sullivan, 1996). For this thesis, the human capital of the HR SSC is therefore distinguished into *HR functional human capital* and *HR infrastructural human capital*. HR functional human capital is conceptualized as the knowledge, skills, and ability to execute and deliver HR services, and HR infrastructural human capital is conceptualized as the knowledge, skills, and ability to apply HR information technologies (Meijerink et al., 2013b).

Social capital within an HR SSC is concerned with the sharing of best practices and cross-group learning among HR SSC staff (Reilly, 2000). HR SSC staff exchanges

knowledge in order to develop a shared interpretation of how to implement HR policies and processes in a consistent way (Meijerink & Bondarouk, 2013). Knowledge exchange within an HR SSC is valuable, because it may improve the quality and uniformity of HR service delivery to end-users. For example, in the study of Tuli, Kohli, and Bharadwaj (2007) HR employees shared knowledge about the end-user's needs to effectively satisfy them. Therefore, social capital of the HR SSC is conceptualized as the sharing of knowledge among HR SSC staff aimed on both individual and organizational learning.

Finally, the HR SSC's organizational capital contains the organizational knowledge, which is codified, stored, or embedded within in the processes and databases (Bukh et al., 2001; Youndt, et al., 2004). These processes and routines are automated through information technologies (i.e. eHRM) and integrated in online databases and intranets, aimed on helping HR SSC staff to "acquire, store, manipulate, analyze, retrieve and distribute pertinent information regarding an organization's human resources" (Tannenbaum, 1990, p. 27). Organizational capital is essential for service firms to create value for end-users, because it provides the HR SSC staff guidelines on how they can satisfy their end-user's needs (Cooke, 2006; Ruta, 2009; Tuli, et al., 2007). Value can be created when HR SSC's document the end-user's service experiences in their databases, so that they can easily find back how end-user's experienced certain services in the past to make their service offerings more effective in the future (Tuli et al., 2007; Youndt et al., 2004). Within this thesis, the organizational capital of an HR SSC is conceptualized as the knowledge embedded in HR processes, HR information systems, databases, and manuals.

HUMAN CAPITAL OF THE END-USER

End-users apply HRM-specific human capital, which is shown to relate positively to employee perceptions of HR service value (Meijerink et al., 2013b). HRM-specific human capital is defined as the knowledge, skills, and ability that enable end-users to utilize HR shared services (Meijerink et al., 2013a). HRM-specific human capital enables end-users to enhance service quality by better aligning the provided services to their own needs during the production and consumption process. Further, as customer's knowledge and skills grow, they gain experience benefits, meaning that they have to spend less time and effort (i.e. non-monetary costs) in consuming the service. As such, HRM-specific human capital give end-users the ability to control and influence the HR SSC value, by increasing the quality of the offered HR shared services and by reducing the costs in realizing it (Meijerink et al., 2013b; Priem, 2007; Ratchfort, 2001). As end-users perceive the delivery of services based on the functional service product (i.e. service outcome) and interaction with the HR SSC (i.e. service process), end-users must have *HR functional human capital* and *HR interaction human capital* (Meijerink et al., 2013b;

Parasuman et al., 1991) to be able to effectively consume the HR shared services. Meijerink et al. (2013b) found empirical evidence that both HR functional human capital and interactional human capital have a positive effect on the value of HR SSCs. Therefore, in this research, HR functional human capital is conceptualized as the end-user's knowledge, skills, and ability to perform HR activities, and interaction human capital as the end-user's knowledge, skills and ability to communicate, interact, and collaborate with the HR SSC.

THE VALUE CREATING PROCESS

The application of the HR SSC's intellectual capital and the end-user's human capital does not automatically lead to value creation. Value is perceived and determined by the customer. It is the customer who is in charge of its own value creation, and it is therefore the customer who is the *value creator* (Grönroos, 2011b). According to Grönroos (2011b), value creation for the customer refers to "the customer's creation of *value-in-use*" (p. 282). Value-in-use emerges when the customer makes physically or mentally use of its own and acquired resources and integrates these at the time of consumption (Grönroos, 2011b; Grönroos & Voima, 2013; Gummesson, 1998; Lusch & Vargo, 2006). But usage comes with a price (e.g. money, time, and effort). The costs a customer has to make for consuming the service is referred as *value-in-exchange*, a function of value-in-use (Grönroos, 2011b; Grönroos & Voima, 2013; Priem, 2007). If the customer cannot create the desired value, he or she will not be willing to pay the price to the service provider. Hence, the customer's creation of value involves increasing value-in-use or reducing value-in-exchange (Priem, 2007). There are multiple possible ways (i.e. equifinality) in which the end-user may perceive value. The way to take depends on the end-user's and HR SSC's need in each other's resources for value creation and therefore may ask for interaction (Vargo et al., 2008). This can result in different combinations of the HR SSC's intellectual capital and end-user's human capital, which requires taking different roles for both actors.

VALUE PROPOSITIONS

In S-D logic, service systems are connected by single or multiple *value propositions* (Ballantyne & Varey, 2006; Spohrer et al., 2008; Vargo & Lusch, 2004). Value propositions are "reciprocal promises of value, operating to and from suppliers and customers seeking an equitable exchange'' (Ballantyne & Varey, 2006, p. 334). According to Vargo and Lusch (2011), the service provider cannot create and add value for the customer, because the customer actually determines what is of value. The service provider can only make offers that have potential value (Prahalad & Ramaswamy, 2004). The value proposition can only be realized through usage of the offered services. Vargo &

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Lusch (2004) imply that the value proposition does not guarantee value, as it is the customer who determines what value is. Nevertheless, the service provider must offer at least a value proposition, since otherwise the customer cannot create value at all.

Hence, the HR SSC depends on its end-users for the delivery of HR shared services, because it is the end-user who decides which services to receive and at which level (Farndale et al., 2009; Reilly, 2000; Reilly & Williams, 2003; Ulrich, 1995, p. 14). This means that HR shared services are not value laden; HR SSCs cannot create anything of value without the engagement of their end-users (Prahalad & Ramaswamy, 2004). End-users will not utilize the service when they perceive it cannot satisfy their needs, resulting in a service without value (Priem, 2007). The HR SSC can only make value propositions (Ballantyne & Varey, 2006). Value propositions must at least be present, and are therefore necessary conditions for creating perceived value. After all, without a value proposition there is nothing for the end-user to create value from. Following Meijerink et al. (2013a), HR shared services offered by HR SSCs are conceptualized as "value propositions that have the potential to result in HR shared services value when used by employees" (p. 159).

As said earlier, HR shared services are provided through the HR SSC's intellectual capital. Hence, when end-users make use of the HR SSC's professionalism through call center services or HR technologies like the HR intranet, they actually make use of the HRM-specific human capital and HR SSC's organizational capital, respectively. In other words, the HR SSC's intellectual capital is reflected in the HR shared services it offers, and is therefore a value proposition, which the end-user may use in order to create perceived value. In this consumption process, the end-user relies on its own human capital. The end-user needs knowledge to know how to handle the HR systems and to find his or her way to contact the HR SSC. Hence, value will be only perceived when the end-user has the human capital to be able to make use of the HR shared services. To summarize, the HR SSC must offer a value proposition in the form of its intellectual capital and the end-user must have high-level human capital to be able to consume to value proposition in order to create value (Priem, 2007). Based on this logic, the first proposition reads as follows:

Proposition 1: The HR SSC's intellectual capital and the end-user's human capital are necessary conditions for a high end-user perception of HR SSC value

VALUE CREATOR AND VALUE FACILITATOR
Value creation is not an all-encompassing process (Grönroos, 2011b; Grönroos & Voima, 2013). Whereas the customer is in charge of the consumption process, the service provider is in charge of the production process. The process of production includes

activities such as the design, development, manufacturing, and delivery of HR shared services. These activities occur prior to consumption and are not part of the value creation process (Grönroos, 2011b; Hilton & Hughes, 2008; Vargo & Akaka, 2009). Initially, the end-user is not engaged in the production process and therefore the HR SSC functions as a *value facilitator*: the resources developed within the production process facilitate value-in-use for the customer, which ultimately enable customers to create value (Grönroos, 2011a, 2011b; Grönroos & Voima, 2013; Priem, 2007). Within the production process the HR SSC merely generates a value proposition, whereas in the consumption process the end-user transforms the potential value into real value (Grönroos, 2011b; Grönroos & Voima, 2013).

The HR SSC and the end-user reflect the roles of value facilitator and value creator in the value creation process. After the implementation of the HR shared services by the HR staff, end-users directly shape the offered services for their own purposes by making use of their human capital. End-users make use of the HR SSC's intellectual capital when they perceive high value. To create value-in-use, they rely on their human capital. For example, the end-user must know how to operate with HR technologies (e.g. online HR portal) in order to be able to make use to make use of the HR SSC's organizational capital. Also when end-users make an appeal to the HR SSC's HRM-specific human capital (e.g. knowledge on payroll), they must be knowledgeable to find a way to get the question at the right person, to make their question or problem clear, and to understand the HR SSC's advice or answer, in order to create value-in-use. When end-users do not have the required level of human capital, they are unable to use the service (Priem, 2007). They will not be able to realize the value proposition and will perceive the HR SSC as low, resulting in a service without value. In other words, the HR SSC's deployment of intellectual capital for high perceived value is dependent on the human capital of the end-users to use this intellectual capital.

To conclude, the HR SSC is a value facilitator by offering intellectual capital in order to facilitate the end-user in the creation of value-in-use. The deployment of high-level intellectual capital is complemented by the human capital of the end-user, so that the end-user becomes a value creator. This combination can be considered as a *synergistic relationship*; attributes are interdependent such that the effectiveness of one attribute depends on other attributes in place (Jiang, Lepak, Han, Hong, Kim, & Winkler, 2012).

CO-PRODUCER AND CO-CREATOR
Besides value creation processes in which both the HR SSC's intellectual capital and the end-user's human capital have a high level, there are also possibilities in which end-users are not able to create value-in-use due to a low level intellectual capital or a low level

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human capital. In such situations, end-users might seek for alternatives. When end-users cannot create value due to their low level human capital, they will experience difficulties in effectively consuming the HR services provided by the HR SSC. An easy way to overcome this problem is for the end-user to check a manual or quick guide for troubleshooting in order to learn how to work to use the HR shared services (Cooke, 2006). Here, the end-user replaces his or her lack of human capital by relying on the HR SSC's organizational capital (i.e. manual). As end-users can manage themselves in learning how to use the service, they do not need to interact with the HR SSC.

However, there are also situations in which there are no manuals present and thus the creation of value-in-use requires an interaction in the form of co-production. In more recent articles about the S-D logic, Lusch and Vargo (2006) used the term *co-creation* instead of *co-production* (Lusch & Vargo, 2004) to conceptualize this interaction, and thereby caused confusion in literature. The difference between the two concepts is complex and lacks clarity, while they are not intended to be used interchangeably (Grönroos, 2011b; Hilton & Hughes, 2008; Segelström, 2012). Grönroos (2011b) reconsidered some of Vargo and Lusch's (2004) foundational premises. Within the consumption process, the customer can choose to collaborate with the service provider to get support. Instead of merely providing the customer with the right resources as a value facilitator, the service provider gets actively involved in maximizing the customer's value-in-use in a way that the customer can create value. Here, Grönroos (2011b) contradicts Vargo and Lusch (2008) by arguing that the service provider is the actual *co-creator* and not the customer, because it is the provider who gets invited by the customer to join in customer's value creation process. Still, the service provider can also decide to invite the customer to participate within the production process. Through this interaction, the production activities become part of value creation, because it gives the service provider the opportunity to understand and meet the needs of the customer and the customer to influence the value proposition. The customer is therefore considered as a *co-producer*. The customer as a co-producer functions as a resource in the provider's production process, while the provider as a co-creator functions as a resource in the customer's consumption process. When these processes are integrated and take place simultaneously, they become *dialogical processes* (Ballantyne & Varey, 2006). Within this thesis, the end-user is conceptualized as a customer who creates HR SSC value for him or herself during the consumption process and becomes a co-producer during direct interactions with the HR SSC. The HR SSC is conceptualized as the service provider that facilitates the end-user in creating value by producing HR shared services and becomes a co-creator during the direct interactions with the end-user.

Interactions within the HR SSC context also always become dialogical processes. For example, when end-users make use of the call-center services, they directly interact

with the HR SSC and become involved in the production process (Grönroos, 2011b). In other words, the end-user co-produces call center services with the HR SSC (Grönroos, 2011b). Within this consumption process, the end-user might make a call to ask a question, and thus relies on the HRM-specific human capital of the HR SSC to fill its own lack human capital. The role of co-producer gives end-users the control to determine and develop HR services together with the HR SSC to such an extent that it gives them the opportunity to translate and influence the offered value propositions to their own specific needs (Hunt, 2004; Meijerink et al., 2013a). The end-user's production activities become part of the value creating process and aid the creation of value. At the same time, the HR SSC shares its own human capital by answering the end-user's question and maximizes end-user's consumption. The HR SSC becomes a co-creator in the end-user's consumption process.

End-users can also initiate interactions when they actually have the required high-level human capital, but can't create value due to the lack of high level intellectual capital of the HR SSC. When the end-user's human capital is present, it may function as an essential resource for the HR SSC. HR SSCs that lack high-level intellectual capital do not have the knowledge resources to provide services that meet the needs of the end-users. The end-user may response to this by contacting the HR SSC to inform an HR professional about his or her needs of the offered HR shared services (Gouthier & Schmid, 2003). During this interaction, the end-user becomes a co-producer as he or she has the control to determine the services the HR SSC has to offer, and thus to reshape the value propositions to his or her own specific needs (Hunt, 2004; Meijerink et al., 2013a). Eventually, the HR SSC staff will become more aware of the end-user's expectations and will improve the services to the end-user's satisfaction as a co-creator. When the HR SSC does this effectively, the end-user will rethink his or her perceptions of the service.

Finally, the lack of intellectual capital can also be noticeable in the HR SSC itself. When the HR SSC employee cannot provide high-level HR services towards end-users due to the low HRM-specific human capital, the service employee can do two things. First, he or she can rely on the knowledge of his or her colleagues. Through knowledge exchange among colleagues the HR SSC employee may gather new knowledge and insights to effectively satisfy these end-user's needs (Tuli et al., 2007). Second, the service employee can also decide to rely on the organizational capital of the HR SSC. Within a case study, Meijerink and Bondarouk (2013) found that service employees made use of "knowledge containers", including online law books, online documents and a FAQ-database to retrieve relevant information.

The described examples show that the HR SSC's intellectual capital can be replaced by the human capital of the end-user, but also the end-user's human capital can

be replaced by the intellectual capital of the HR SSC. These value-creating processes are *substitutive relationships*; one attribute is replaceable with another attribute (Jiang et al., 2012). In some situations substitution requires direct interaction between the end-user and the HR SSC in order to make value-in-use for the end-user possible. Here, they respectively become co-producers and co-creators. Still it is important to note that in a dialogical process, the HR SSC can only become a co-creator when the end-user initiates a direct interaction, and thus co-production is a pre-condition for co-creation to take place.

Since the S-D logic suggests that value creation rests on both the HR SSC and the end-user (Meijerink et al., 2013a; Vargo & Lusch, 2004), it is likely that the end-user's human capital and the HR SSC's intellectual capital interrelate. As the described examples showed, there are multiple possible combinations in which knowledge resources of the end-user and HR SSC substitute and/or complement each other to guarantee value. However, when the end-user cannot create value out of the offered HR shared services, he or she seeks for interaction with the HR SSC and becomes a co-producer (Gouthier & Schmid, 2003). It is therefore believed that the combination (i.e. configuration) of certain attributes is *sufficient* for the outcome to occur instead of one attribute in isolation (Delery & Doty, 1996 Greckhamer, 2011). In other words, only a *combination* of intellectual capital, human capital, and possibly co-production will lead towards a high end-user's value perception. Based on this logic, the second and third proposition of this thesis read as follows:

Proposition 2: Multiple combinations consisting of the HR SSC's intellectual capital and the end-user's human capital are sufficient for the end-user to perceive high value of the HR SSC.

Proposition 3: Co-production by the end-user becomes part of a combination when the HR SSC lacks high level intellectual capital or the end-user lacks high level human capital, and thus contributes to the sufficiency of that combination for a high value perception by the end-user.

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DATA AND METHODS

This chapter includes a specific description of the research design, sampling method, data collection, used measures, and data analysis.

RESEARCH DESIGN

For the purpose of this research, a survey research has been applied. Surveys allow collecting a large amount of data from a large population (Saunders, Lewis, & Thornhill, 2007). The surveys were useful for the purposes of this research as they captured variation of the causal conditions and the outcome of interest. Variation measures how spread out the responses are. The outcome of interest is "high" perceived value, and thus indicates that perceived value might vary in certain different levels (e.g. high or low). However, value is an abstract concept and it is therefore unclear when end-users perceive value as high or low. The use of surveys allows adding indicators for the attributes in order to capture that variance. For example, Farndale et al. (2009) argue that organizations apply different organizational structures for operating their HR SSC. Therefore, the degree of control of the end-users to develop HR services might differ among organizations. So, the extent of co-production varies across organizations, which can be measured by indicators in surveys.

SAMPLING AND DATA COLLECTION

The sample was drawn from a sampling frame of all the existing 95 Dutch organizations with HR SSC's. The sampling procedure consisted of three phases. First, all the 95 organizations were invited to participate the research. From these organizations, 19 decided to participate, representing an inclusion rate of 20%. To indicate if this sample was representative for the entire population, the sample of the 19 participated HR SSCs was compared with 27 HR SSCs that decided not to participate. Results from the t-test showed that the participating HR SSCs did not differ significantly from those which did not participate on HR SSC lifespan (t (44) = .583, p = .56), number of employees served (t (44) = 1.11, p = .27), industry (t (44) = 1.77, p = .09), and profit/non-profit (t (44) = -1.59, p = .12) (Meijerink et al., 2013a). Besides that, the sample characteristics of the participating organizations were similar to those presented in other studies into Dutch HR SSCs (Farndale et al., 2009; Meijerink et al., 2013c). Based on these findings, it may be concluded that this sample of HR SSCs is representative for the entire population of Dutch HR SSCs. Second, intake interviews were held to identify all the HR SSC managers. At the end, all the identified HR SSC managers were asked to participate. A total of 65 questionnaires were sent out to these managers. Third and last, a total of 6578 end-users were randomly selected to invite to participate. Both the number of

invited HR SSC managers as end-users reflected the entire population of HR SSC managers and end-users working in a Dutch organization with an HR SSC. It can be concluded that the generated findings are generalizable as the sample is representative for the whole population of Dutch HR SSC's.

The data have been collected between November 2011 and June 2012 using online questionnaires. The management team members of the HR SSC were asked to fill in a paper-and-pen questionnaire containing the items that measured intellectual capital and co-production. Multiple managers were invited where possible to reduce the possibility of single response bias. End-users received an online survey via e-mail with items that measured the HRM-specific human capital and perceived value. Several techniques were used to reduce non-response. First, the respondents received a pre-notification of the research by letter. Second, a cover letter was added to the questionnaire stating the usefulness and benefits. Third, two follow-up e-mails were sent as a reminder to fill in the questionnaire. Fourth, the length of the questionnaire was reduced. Forced entry was used to limit missing values. The responses of the end-users, who did not fill in the questionnaire completely, were excluded and used for the non-response analysis instead. The respondents had four weeks to complete the survey.

Table 1: *Response rates benchmarks*

		HR SSC questionnaire			End-user questionnaire		
# Firm	Industry	# sent	# returned	response rate	# sent	# returned	response rate
1	Insurance	4	4	100%	100	41	41%
2	IT Consultancy	4	4	100%	200	70	35%
3	Aerospace	1	1	100%	260	49	19%
4	Government	5	2	40%	540	151	28%
5	Government	3	2	67%	500	90	18%
6	Government	3	2	67%	300	128	43%
7	Telecommunications	4	3	75%	314	107	34%
8	Government	4	2	50%	800	308	39%
9	Distribution	4	4	100%	550	81	15%
10	Rail transport	4	3	75%	600	140	23%
11	Steel	1	1	100%	300	128	43%
12	Recruitment	4	4	100%	250	74	30%
13	Government	6	6	100%	198	63	32%
14	Retailing	5	4	80%	72	49	68%
15	Employment services	5	3	60%	19	14	74%
16	Rail transport	1	1	100%	326	54	17%
17	Chemicals	1	1	100%	800	263	33%
18	Aerospace and defense	5	5	100%	453	187	41%
19	Building materials	1	1	100%	13	12	92%
		65	**53**	**82%**	**6595**	**2009**	**30%**

MEASURES

Data has been provided through questionnaires consisting of items with a five point likert scale ranging from "strongly disagree" (1) to "strongly agree" (5). The HR SSC managers also had the option to answer questions with "non applicable" (0). End-users were asked to fill in the questionnaire with items related to their HRM-specific human capital and perceived value. The HR SSC managers were asked to fill in the questionnaire with items related to their HRM-specific human capital, social capital, organizational capital, and co-production. Table 2 gives an overview of the first-order, second-order, and third-order constructs and their corresponding sample items. The measures for the constructs were mainly derived from existing scales. Some of these scales needed to be translated to the context of the HR SSC with regard to the validity. For HRM-specific capital of the end-user a whole new scale had to be made, since such scale did not exist yet. In order to use these constructs for the final analysis, a factor analysis needed to be conducted. Through a factor analysis one can verify if it is allowed to structure items to form a set (i.e. factor). The factor analysis was conducted in SPSS doing a principal component analysis (PCA). For the analysis the *KMO and Bartlett's test* was used. This test checks whether there is a correlation between the items. If the items do not correlate, it means that there are no sets to find (Field, 2009). The Kaiser-Meyer-Olkin (KMO) statistic should be greater than 0.5 (Field, 2009). The Bartlett's test must be significant; small values ($p < 0.05$) indicate that the correlations are significant and the factor analysis was useful for the data (Field, 2009). Next, the *communalities* table shows the proportion of variance accounted for in each variable by the rest of the variables. Because PCA works on the notion that all variance is common, the initial communalities are all 1.00 (Field, 2008). Extraction of the factors reflects the common variance. Field (2008) states that sample sizes greater than 250 should at least have an average extraction communality of .60. An individual item with communality below .50, indicates that the item might not fit well in the factor solution and should therefore possibly be dropped from the analysis. The *total variance explained* table shows the number of possible factors and the percentage of variance they explain the initial solution. This should be 45% at least. Finally, the *rotated component matrix* shows the possible factors and how the items load on these factors. When there are items that have a high loading on multiple factors, they must also be removed and the factor analysis has to start over again. If an item has close loadings in different factors, it means that it assesses both constructs. This process continues until there are a few items that load highly on one factor and low on all other factors. Besides the factor analysis, reliability tests were conducted. For each construct, the Cronbach's alpha should be at least .80. The following subsections discuss how these constructs were measured and what items were used.

Table 2: *First-order, second-order and third-order constructs, and sample items.*

First-order construct	Second-order construct	Third-order construct	Sample item
Intellectual capital: The sum of human, social, and organizational capital embedded in an HR SSC.	- **Human capital:** level of knowledge, skills, and abilities reflected in the HR functional human capital and HR infrastructural human capital of HR SSC staff.	- **HR functional human capital** level of knowledge of HR SSC staff on labor regulations, employment policies, payroll and personnel administration and its ability to execute these.	"Among the employees of the HR SSC very well-developed knowledge is present of the content of the terms of employment policies''.
		- **HR infrastructural human capital:** level of ability of HR SSC staff to use infrastructures such as HR information technologies, databases, and HR processes	"Among the employees of the HR SSC very well-developed skills are present for executing administrative HR processes''.
	- **Social capital:** Level of knowledge exchange among HR SSC staff.		"The employees of the HR SSC share information and learn from each other''.
	- **Organizational capital:** extent to which an HR SSC has embedded or codified knowledge in database routines, information technologies, HR processes and manuals		"The HR SSC embeds much of its knowledge in systems and processes''.
HRM-specific human capital end-user: level of HRM-specific knowledge, skills, and abilities reflected in the HR functional human capital and HR interactional human capital of the end-user.	- **HR functional human capital:** degree to which the end-user is able to conduct HR administration		"I know exactly where I can make requests regarding personnel administration."
	- **HR interactional human capital:** level of ability of the end-user to make requests of the HR SSC		"I am able to solve my HR-related problems with an employee of the HR SSC."
Perceived value: The end-user's overall assessment of the utility of HR shared services based on the perceptions of what is received (i.e. quality) and what is given (i.e. costs)	- **Quality:** degree of to which the end-user perceives if the HR shared services satisfy his or her needs in terms of the service outcome and the service process.	- **Service outcome:** degree of the end-user's perception about what he or she actually received from the HR shared services.	"The HR SSC performs its services right at the first time.''
		- **Service process:** degree of the end-users perceptions about the manner in which the value proposition is delivered.	"I feel safe during my interactions with the HR SSC."
	- **Costs:** amount of HR functional costs and HR interactional costs the end-user has to make for consumption.	- **HR functional costs:** amount of time and effort the end-user has to spend in using HR administration.	"I have to spend a lot of time to ensure that my personal HR information is updated as it changes."
		- **HR interactional costs:** amount of time and effort the end-user has to make to interact with the HR SSC.	"I have to spend a lot of effort to gain information from the HR SSC."
Co-production: extent to which the end-user participates in the delivery of the service offering			"The end-users intensively cooperate in the service delivery process of the HR SSC.''

(Meijerink et al., 2012, 2013a; Skaggs & Youndt, 2004; Youndt et al., 2004; Zeithaml, 1988).

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The primary outcome of interest is the end-user's perceived value of the HR SSC. As said before, end-user's perception of value is based on their perceptions of the overall utility (Meijerink, 2013). End-users make use of a product of service based upon their perceptions of the quality and costs (Novack et al., 1994; Parasuraman et al., 1985, 1991; Zeithaml, 1988). Therefore, scales have been developed to measure both quality and costs.

According to Parasuraman et al. (1991), consumers evaluate service quality based upon the quality of both service outcome and service delivery process. The former concerns with end-users' perceptions of "what" is delivered, while the latter deals with end-users' perceptions of "how" it is delivered (Parasuraman, Zeithaml, & Berry, 1985). To measure the quality of HR shared services, the HRM service quality scale of Biemans (as cited in Meijerink et al., 2013a) was adopted, as it measures both the quality of the service outcome and the quality of the service process within a HR context. Biemans (as cited in Meijerink et al., 2013a) adapted the HRM service quality scale of the SERVQUAL scale from Parasuraman et al. (1991), which originally consists of five dimensions, namely: reliability, empathy, responsiveness, assurance, and tangibles. Biemans (as cited in Meijerink et al., 2013a) excluded the tangibles dimension in the HRM service quality scale, and thus within the HRM context, HRM service quality is measured as a four-dimensional scale. For this research and in contradiction with Biemans (as cited in Meijerink et al., 2013a), HR shared service quality was measured by a two-dimensional scale with a service outcome quality factor (i.e. reliability and responsiveness) and a service delivery process quality factor (i.e. empathy and assurance) (Bos-Nehles, 2010), as the confirmatory factor analysis showed that the two-dimensional scale was significantly better fitting the data than the four-factor model $(\Delta\chi^2_{(0)} = 412.42$; p < .001) (Meijerink et al., 2013a). The service outcome quality scale consisted of ten items and the service process quality scale consisted of eleven items. Together they form the HRM service quality scale. The HRM service quality scale had a Cronbach's Alpha of α = .95, which is well above the minimum requirement of 0.8.

Items of two scales developed by Lapierre, Filiatrault, and Chebat (1999) and Petrick (2004) were adapted for measuring the costs of HR shared services. Original items that referred to monetary costs (e.g. "the service is easy to buy" (Petrick, 2004)) were left out of the questionnaire, since end-users do not pay for HR shared services. These items were reformulated so that they reflected the use and consumption of HR shared services. The new scale consisted of six items. Unfortunately, the one-dimensional scale did not fit the data and was therefore formed into two dimensions of both three items, related to the costs the end-user has to make to obtain each type of HR service. The first set of corresponded to the costs the end-user has to make for using

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HR administration (i.e. HR functional costs). The second set related to the costs the end-user has to make for using information and support provision services (HR interactional costs). The two-dimensional scale fitted the data significantly better than the one-dimensional scale ($\Delta\chi^2_{(1)}$ = 1122.58; p < .001) (Meijerink et al., 2013a). The factor analysis showed a KMO-value of .83. The Bartlett's test of sphericity $\chi^2_{(15)}$ = 6919.22, p < .000, indicated that the test is highly significant (p < .001) and thus the factor analysis was appropriate. The commonalities for individual items were > .64, which is well above the threshold of .60. The two factors explain 78.4% of the total variance, which is very high. Furthermore, the rotated component matrix showed that the first three items formed one factor, matching the HR functional costs scale, and the second set of three items formed the other factor, matching the HR interactional costs scale. All factor loadings were > .75. To test if the two scales were reliable, a reliability test was conducted. The Cronbach's Alpha for HR functional costs was .82 and the Cronbach's Alpha for HR interactional costs was .90, and thus both values were above the threshold of .80. For developing a total scale for measuring costs, the items needed to be recoded first, because they were formulated negatively. Adding up all the recoded items and dividing it by six computed the total scale for costs. The costs-scale had a Cronbach's alpha of α = .88.

As quality positively influences perceived value and costs negatively, the total scale for perceived value was measured by adding up the scores of quality and the scores of costs and dividing it by two (perceived value = (quality + costs)/2). To ensure if quality and costs may be used for measuring perceived value, the correlation between quality and costs was measured. Therefore, the Pearson's correlation coefficient was used as an alternative for the factor analysis. The Pearson's correlation coefficient showed r = .572**, which indicates that the correlation is significant at the .01 level. Hence, quality and costs are related and may be used to form the construct for measuring perceived value. The Cronbach's alpha for perceived value was α = .85.

CAUSAL CONDITIONS HR SSC LEVEL
The HR SSC managers were asked to fill in questions regarding HRM specific human capital, social capital, organizational capital, and co-production. The scores were measured at multiple individual HR SSC managers. As the scores were normally distributed, it was possible to interpret these on a HR SSC level.

For measuring the HRM-specific human capital of the HR SSC, scales of Ulrich et al. (2008) were adopted. In this research, HRM specific human capital was regarded as a two-dimensional construct, consisting of HR functional human capital and HR infrastructural human capital. A factor analysis was conducted to find out if the items were valid to form a scale. Twelve items of Ulrich et al. (2008) were inputted in the

factor analysis, because they were conceptually related to the two dimensions of HRM specific human capital. Of these items, one set of five items originally formed Ulrich et al.'s (2008) legalization and policy knowledge scale. A second set of three items measured HRIS knowledge (Ulrich et al., 2008). A third set of four items formed a scale for measuring process knowledge (Ulrich et al., 2008). It was expected that the items of the legalization and policy knowledge scale would form the first factor (i.e. HR functional human capital) and the items of both the HRIS knowledge scale and the process knowledge scale would form the second factor (i.e. HR infrastructural human capital). The factor analysis showed a KMO-value of .79, which is good. The Bartlett's test of sphericity $\chi^2_{(66)}$ = 345.7, p < .000, indicated that the test is significant (p < .001), which means that the conducted factor analysis was meaningful. The communalities had an average of .63, which indicated that all the items fit in the factor solution. The factor analysis showed that the items loaded on two factors explaining 64.9% of the total variance. As expected, the items for measuring HRIS knowledge and process knowledge had factor loadings of > .65 on the first factor, while the items for legalization and policy knowledge had factor loadings of > .75 on the second factor. These items were therefore used to measure HR infrastructural human capital and HR functional capital respectively. After testing the validity, a reliability test was conducted in order to verify if the items might be used to form a construct. The HR infrastructural human capital scale had a Cronbach's alpha of α = .88 and thus formed a reliable scale. Also the five items showed HR functional human capital to be a reliable scale with a Cronbach's alpha of α = .86. For developing a total scale for HR SSC's HRM-specific human capital, the items of both the HR functional human capital scale and the HR infrastructural scale were added up and divided by their total of twelve items (HRM-specific human capital = (HR functional human capital + HR infrastructural human capital)/2). The total scale for measuring HRM-specific human capital had a Cronbach's alpha of α = .87.

To measure social capital, the social scale of Reed et al. (2004) was adapted. This scale originally consists of seven items. However, four of these items showed a low face validity and did not fit in the context of the HR shared services. For example, one of the items measured human capital instead of social capital and was more focused on external relationships ("How adequately do your employees have the capacity to partner with customers, suppliers, alliance partners, etc., to develop business solutions?"). Items that did not fit in this research were excluded from measurement. The remaining three items were reformulated to fit the context of this research. As only three items were left, two self-constructed items were added. The factor analysis showed that the five items form a valid scale for measuring social capital. The KMO-value was .81, which is more than acceptable. The Bartlett's test sphericity $\chi^2_{(10)}$ = 144.00, p < .000 was significant (p < .0001). The commonalities table showed that all the items had a communality of >.50.

Moreover, all the five items loaded highly on one factor explaining a total variance of 69.2%. The *rotated component matrix* was not displayed by SPSS, as there was only one factor. To examine if it is allowed to merge the items into an underlying construct, a reliability test was conducted. The Cronbach's alpha for social capital was α = .89.

Organizational capital was measured by using the organizational capital scale of Reed et al. (2004), which included eight items. Also here some of the items exposed a low face validity and did not fit the context of this research. For example, one item asked if there was a budget for organizational capital ("How adequately has your area received an annual information technology budget (for personnel, hardware, software, etc.)?"). Since this research focuses on how knowledge is embedded in technology and processes, there is no interest in measuring budgets. Two items were excluded from measurement. Six items remained for testing and were reformulated to the context of this research. The factor analysis showed an acceptable KMO-value of .83. The Bartlett's test of sphericity $\chi^2_{(15)}$ = 106.39, p < .000, indicated that the test is significant (p < .001). The third item ("The HR SSC embeds much of its knowledge in systems and processes") had a communality < .50. It is unclear what the reason of this low value is. From a theoretical point of few, the item showed high face validity as it measured what it is intended to measure. However, from an empirical point of few it was decided to drop this item. The results need therefore to be interpreted with caution. All the items loaded on one factor explaining 54.0% of the total variance. The factor loadings were > .58. With a Cronbach's alpha of α = .75, the items were combined to form the organizational capital construct.

Co-production was measured by using the construct of Skaggs & Youndt (2004). The original construct consisted of six items. Four of these items were dropped, because they did not fit to the context of the HR SSC. Those items were more focused on the co-production of external customers, who may also visit the firm ("Relative to our competitors our firm is conveniently located near customers"). In the context of the HR SSC, end-users only have contact with the HR SSC through e-mail or telephone and thus not in person. The remaining two items were translatable for the context of the HR SSC and therefore used for this research. Additionally, one item was adopted from Auh, Bell, McLeod, and Shih (2007) and was also translated to fit this research. Also four new items were self-constructed and added to the questionnaire. Eventually, seven items were used for further testing. The first factor analysis showed that the items loaded on two factors explaining 64.7% of the total variance. However, the items had to load on one factor, so a second factor analysis was conducted. The second factor analysis was restricted to extract only one factor. The commonality table of the second factor analysis showed that the second item ("The HR SSC requires a great deal of information from each end-user before producing an HR service") and the fifth item ("The end-users themselves have a

lot of responsibility for keeping up with their personal HR administration") had unacceptable communalities of .23 and .35 respectively, indicating that these items do not fit the factor solution. A theoretical reason of why these items do not fit in the factor solution is that they are formulated in a passive way. A HR SSC can require information, but that does not mean that the end-user actually provides that information. Also having responsibility in keeping up their HR administration does not have to mean that the end-user actually bears responsibility. Contrary to these items, the remaining five items are formulated in an active way (e.g. "The end-users intensively cooperate in the service delivery processes of the HR SSC"). Therefore, it was decided to drop the two items from further research and to conduct a third factor analysis with the five remaining items. The third factor analysis showed an acceptable KMO-value of .70. The Bartlett's test of sphericity $\chi^2_{(10)}$ = 84.95, p < .000, indicated that the test was significant (p < .001) and thus the factor analysis was useful. The communalities table showed that three items were > .50, but still two items were < .50. However, as these two items were slightly below the threshold (.485 and .452) and had a high face validity, it was decided to continue the analysis. The factor explained 55.8% of the total variance. Because there was only one component extracted, the solution could not be rotated and thus the individual factor loadings were not presented by SPSS. The reliability test showed that the Cronbach's alpha was α = .79, which means that the scale is reliable.

CAUSAL CONDITION END-USER LEVEL

Besides perceived value, end-users were asked to fill in questions about their HRM specific human capital. Since a scale for measuring HRM-specific human capital of end-user did not exist yet, a new scale was developed. Literature about HR competences has been reviewed and eight employees have been interviewed and observed while co-producing and utilizing HR shared services. This resulted in two scales for measuring HR functional human capital and HR interaction human capital, consisting of seven and three items respectively. The factor analysis confirmed that HRM specific human capital consisted of two scales. However, the first factor analysis showed that the fourth item ("I know exactly who to turn to when I have a problem with my personnel administration") had a close loading on both factors, which means that this item assesses both HR functional human capital and HR interaction human capital. When considering this item again the outcome seems logical, as "knowing who to turn to" relates to HR interaction human capital, while "having a problem with personnel administration" relates to HR functional human capital. A second factor analysis was therefore conducted, in which the fourth item was excluded. This analysis showed better results. The KMO-value was .86 and the Bartlett's test was significant (p < .0001). The communalities table shows that all the items have communalities of > .50 and thus fit in the factor solution. The items

load on two factors explaining 63.9% of the variance. Six items for HR functional human capital had factor loadings > .60 on the first factor, whereas the three items for measuring HR interactional human capital had factor loadings > .70 on the second factor. Because of these results, it was not necessary to conduct a third factor analysis. Besides the factor analysis, a reliability analysis was conducted. The Cronbach's alpha for HR functional capital was α = .85 and for HR interactional human capital α = .84. The Cronbach's alpha for the HRM specific human capital scale of end-users was α = .87.

DATA ANALYSIS

The purpose of this research requires a different analysis technique than conventional methods that are focused on finding effects of independent variables in linear models (Ragin, 2008). Within the current study, a fuzzy set Qualitative Comparative Analysis (fsQCA) has been employed to analyze data. The fsQCA is a case-oriented analytic method that allows analyzing how combinations of causal conditions contribute to an outcome over a limited number of cases (Berg-Schlosser, De Meur, Rihoux, & Ragin, 2009; Fiss, 2007, 2011; Löwik, 2013). In fsQCA all cases are calibrated into set membership values ranging from 0 to 1. By comparing the cases one can explore how the membership of cases in combinations of causal conditions is linked to membership of cases in the outcome. These linkages are identified by clarifying the necessary or sufficient conditions for the presence of an outcome (Thygeson, Peikes, & Zutshi, 2013). Instead of conventional statistical methods, fsQCA uses "Boolean algebra and algorithms for logical reduction of a number of complex causal conditions into a reduced set of configurations that lead to the outcome" (Fiss, 2011, p. 402). According to Ragin (2008), fsQCA offers a middle path between qualitative and quantitative research as it transcends both their limitations. On the one hand, calibration into fullmembership and nonmembership corresponds to a qualitative technique; fuzzy coded categories arise from qualitative data (Kent, 2009). On the other hand, calibration is simultaneously quantitative, as it precisely measures variance. To explain what configurations lead to high value for the HR SSC, members of the set of high valued HR SSCs were examined and combinations of knowledge resources and co-production were identified and associated with high value.

There are several reasons why the fsQCA is especially appropriate for this study. First, it accommodates the concept of equifinality; there are many pathways to the same outcome (Fiss, 2007; 2011). In contrast, classical linear regression does not take equifinality into account (Fiss, 2007; 2011). The fsQCA analyses equifinality through truth tables, which represent all theoretical possible configurations for a given outcome. Hence, each configuration of knowledge resources represents a possible path towards high value (Ragin, 2008). Second, the fsQCA assumes that each of these pathways may

contain different combinations of causal conditions (i.e. conjunctural causation), rather than one condition alone (Schneider et al., 2010). It explores in what way the knowledge resources are interrelated for high value to occur. Third, fsQCA enables to compare the similarities and differences between configurations (Schneider et al., 2010). Because these configurations are asymmetric in nature, they cannot be reformulated in correlational relationships (Ragin, 2008). Asymmetry means that "the idea that causes leading to the presences of an outcome of interest may be quite different from those leading to the absence of the outcome'' (Fiss, 2007, p. 394). Therefore, with the aid of this method it is possible to uncover the necessity and sufficiency for high value to occur.

Within this study, fsQCA was applied through three steps (Löwik, 2013). First, each value of was calibrated into a set of membership. Second, the necessary causal conditions were analyzed. Third the sufficient causal conditions were analyzed and the final configurations were determined. For these steps, the fsQCA 2.0 software was used (Ragin, Drass, & Davey, 2006).

RESULTS

This chapter contains the analysis of the results of the collected data. The data was inputted in the fsQCA 2.0 software. The chapter starts with the calibration of the data, followed by the necessary and sufficiency analysis.

CALIBRATION

After data collection, the first step in fsQCA is to construct the attributes to be used in analysis (Rihoux & Lobe, 2009). The concepts used in the current research are theory centered, making them verbal and abstract in nature. For example, it is unclear when value is perceived as high for full membership in the set of high perceived value. In fsQCA, data must be calibrated towards external standards to make them interpretable (Ragin, 2008). Calibration enables to convert data of both the outcome and causal conditions into degrees of membership in a set by using values in the interval ranging from 0.0 to 1.0. A score of 0.0 indicates *full nonmembership* in a set, while a score of 1.0 indicates *full membership* in a set. A value near 0.0 (e.g. 0.4) indicates that the case is more out the set, than in, but is still weak member of the set (Ragin, 2008). A value close to 1.0 (e.g. 0.8) means that the case is more in the set, than out, but not a full member of the set. Cases with a score of 0.5 are in-between and thus they are neither fully in nor fully out of a set. This score, also known as the *cross-over point*, indicates maximum "fuzziness'' (Ragin, 2008). Hence, practices can have continuously varying degrees of membership in a given set. Substantive knowledge provides the external criteria that make it possible to calibrate measures into conceptually grounded set

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memberships (Ragin, 2008). The descriptive values of the causal conditions and outcome of interest are summarized in table 3. Table 3 lists the mean value, the standard deviation (SD) the range of the values between the lowest value (Min) and the highest value (Max), the percentiles (25%, 50% and 75%) and the scores of the Kolmogorov-Smirnov (K-S test) normality test. Following the studies of Fiss (2011), Löwik (2013), and Ragin (2008), percentiles were used as a threshold to determine what values constitute for the three breaking points. The upper 25 percentiles were used as a threshold for full membership, the lower 25 percentiles were used as the threshold for full nonmembership, and the 50 percentiles were used as a threshold for the cross-over point. Percentiles can only be used when the mean values of the constructs are distributed normally. This is justified by the Kolmogrov-Smirnov test, which tests the null-hypothesis of non-normality. As table 3 shows, none of the outcomes are significant, meaning that the data is distributed normally and the percentiles may be used for calibration and further analysis.

Table 3: *Descriptive values and Kolmogorov-Smirnov normality test*

	Mean	SD	Min	Max	25%	50%	75%	K-S
PERC_VAL								
Perceived value	3,3382	0,5866	1,0000	4,9800	3,0000	3,3070	3,7519	.000
HC_EU								
Human capital end-user	3,0914	0,8669	0,0000	5,0000	2,6667	3,1667	3,6667	.000
HC_HRSSC								
Human capital HR SSC	3,7736	0,5733	1,9714	4,9286	3,4750	3,8143	4,0929	.534
SC_HRSSC								
Social capital HR SSC	3,6906	0,6968	1,0000	5,0000	3,4000	3,8000	4,0000	.186
OC_HRSSC								
Organizational capital HR SSC	3,6164	0,69074	2,3333	4,8333	3,0000	3,8333	4,1667	.004
COPRO								
Co-production	3,0377	0,7391	1,8000	5,0000	2,6000	3,0000	3,6000	.796

K-S = Kolmogorov-Smirnov normality test, which tests the null-hypothesis of non-normality. *** p<.001, **p<.01, *p<.05. N = 2055

NECESSARY CONDITIONS

The second step is to apply the first analytic strategy to search for commonalities, which is the assessment of *necessary conditions*. A combination of causal conditions is considered as necessary when it must be present for an outcome to occur. The instances of the outcome constitute a subset of instances of the causal combination (Ragin, 2008). This means that for each case, the set membership value of the outcome Y should be consistently less than or equal to the set membership of the causal combination R ($Y_i \leq R_i$) (Ragin, 2008). To assess whether a condition is necessary, cases sharing a given outcome were examined and their causal conditions were attempted to identify. In order

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to do so, the *consistency value* was established to quantify the extent how closely the subset relation is perfect (Ragin, 2008). Consistency is equivalent to significance in conventional research; when the subset relation is inconsistent, the theory cannot be supported (Ragin, 2008). The consistency value ranges from 0 to 1.00. A score of 1.00 indicates perfect consistency where the causal combinations are a subset of the outcome. When there are many inconsistent scores present, with membership values of the causal condition greatly exceeding their corresponding membership scores for the outcome, consistency can decline below 0.5. According to Ragin (2008), the minimum recommended threshold for consistency is .75. Therefore within this research, a condition or combination of conditions is considered as necessary if the consistency value exceeds the cut-off value of .75 for the creation of high value.

After determining the consistency value, the *coverage rate* was calculated. Coverage assesses the extent to which a cause or causal condition accounts for instances of the outcome and is analogous to strength in conventional research. Hence, coverage assesses the relevance of the necessary condition (Ragin, 2008). The coverage rate also ranges from 0 to 1.00. A coverage rate near 1.00 indicates that all cases included in the data set fall into the set that represents the combination of causal conditions, meaning that the necessary condition is highly relevant for reaching the desired outcome. On the other hand, a score near 0 explains that the combination of causal conditions does not occur in any of the cases. It is important to note that the coverage rate is only interesting to analyze when the cause or combination of causes is a consistent subset of the outcome (Ragin, 2008).

The analysis for necessary conditions is conducted by taking high-perceived value as the desired outcome and human capital of the end-user, the dimensions of intellectual capital of the HR SSC, and co-production as the causal conditions of interest.

Table 4: *Analysis of necessary conditions for high perceived value*

	Consistency	Coverage
HC_EU		
Human capital end-user	0.709194	0.695445
HC_HRSSC		
Human capital HR SSC	0.654408	0.555348
SC_HRSSC		
Social capital HR SSC	0.621252	0.551181
OC_HRSSC		
Organizational capital HR SSC	0.531350	0.516524
COPRO		
Co-production	0.714897	0.543354
HC_HRSSC + SC_HRSSC + OC_HRSSC	0.829260	0.513738

+: Presence of either condition or multiple conditions.

Table 4 presents the results of the analysis of necessary conditions. Each causal condition individually had a consistency value below the threshold of .75, which means that none of them are individually necessary for high value. Yet, with a consistency value of .71, human capital of the end-user is close to the cut-off point and thus almost necessary for high perceived value. Because the individual causal conditions are inconsistent, there is no further interest in analyzing the coverage rate. The second step was therefore to analyze if combinations of causal conditions might be necessary for high value. In proposition 1 it was stated that intellectual capital may form a necessary condition for high value, as the HR SSC at least must offer a value proposition for the creation of value by the end-users. It was also argued that the HR SSC's human capital, social capital and organizational capital are intrarelated and may substitute each other. In order to test this, *substitutable necessary conditions* were assessed. In fsQCA, the test measures if two or more causal conditions can be joined through logical "or" (Ragin, 2008). Also here the consistency value of .75 was used as a threshold for consistency. Table 4 shows that the combination of human capital, social capital, and organizational capital of the HR SSC has a consistency score of .83. This score indicates that this combination may be considered as necessary; either the presence of high level human capital, social capital, or organizational capital of the HR SSC may yield to high value as they can substitute for each other. The coverage rate is .51, which implies that this combination of causal conditions does not occur in all cases.

Besides the necessary analysis for the presence of high perceived value, the necessary analysis of the absence of high perceived value was conducted, which is shown in table 5. The analysis of the negation of the outcome allows crosschecking the findings (Koole & Vis, 2012). It is interesting to also take a look at these results, because configurational approaches as fsQCA assume asymmetry (Rihoux & Ragin, 2008).

Table 5: *Analysis of necessary conditions for low perceived value (negation)*

	Consistency	Coverage
HC_EU		
Human capital end-user	0.408970	0.402221
HC_HRSSC		
Human capital HR SSC	0.664428	0.565511
SC_HRSSC		
Social capital HR SSC	0.581992	0.517868
OC_HRSSC		
Organizational capital HR SSC	0.584187	0.569557
COPRO		
Co-production	0.700948	0.534321
HC_HRSSC + SC_HRSSC + OC_HRSSC	0.854249	0.530776

+: Presence of either condition or multiple conditions.

As expected, none of the individual causal conditions showed to be necessary for the negation of the outcome, as all the consistency values were below the threshold of .75. However, the combination of either the presence of high human capital, social capital or organizational capital of the HR SSC is with a consistency value of .85 far above the threshold score. Hence, the presence of either these intellectual capital dimensions may also account for low perceived value. This indicates that the intellectual capital of the HR SSC is trivially necessary for a high value perception of the end-user (Braumoeller & Goertz, 2000); in all cases, high value perception or no high value perception, at least one of the intellectual capital dimensions is present. This does not have to mean that the first part of proposition 1, the necessity of intellectual capital for high perceived value, has been falsified. According to Braumoeller and Goertz (2000) it indicates that "X is constant for all values of Y" (p. 220). They illustrate this by arguing that armies cannot operate without gravity; gravity is always present and necessary for everything in live. Gravity is therefore an empirical irrelevant necessary condition for starting wars (Downs as cited in Braumoeller & Goertz, 2000). Hence, the necessity of intellectual capital for a high value perception can be somewhat supported, however, it is a trivally necessary condition as its contribution for a high value perception is modest.

SUFFICIENT CONDITIONS

The third step is to apply the second strategy to search for commonalities, which is the assessment of sufficient conditions. This strategy is aimed to examine cases sharing a specific combination of causal conditions and assess whether these cases exhibit the same outcome (i.e. causal complexity) (Ragin, 2008). In other words, this strategy is an examination of whether instances of a specific combination of causal conditions constitute a subset of instances of an outcome. Here, membership in the outcome Y is consistently more than or equal to membership in the causal combination R ($R_i \leq Y_i$) (Ragin, 2008).

A key-tool for set-theoretic analysis and assessing causal complexity is the truth table (Ragin, 2008). The truth table is a data matrix consisting of 2^k rows, where k stands for the number of causal conditions used (Fiss, 2011). Each row in this table represents a possible configuration that might lead to the outcome in question. In other words, the truth table lists all logically possible combinations of causal conditions, either their presence or absence, to identify whether they are connected to the same outcome, and is therefore aided to assess sufficiency (Ragin, 2008).

The truth table is reported within table 6 and showed 32 causal combinations (2^5 logically possible combinations with five conditions) sorted by case frequency represented in the number column. The second till sixth column shows the presence or absence of the causal conditions. Each causal condition has a degree of membership in a

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configuration leading to high perceived value (i.e. PER_VAL). It can have a strong membership, determined by assigning a value of 1.00 to fuzzy membership values > .50, or weak membership, determined by assigning a value of 0 to fuzzy membership values < 0.5. The last column shows the consistency of the possible configurations. The configurations exceeding the cut-off consistency value of .75 are categorized as sufficient. In these cases, the configurations represent a subset of the outcome, and were therefore assigned a value of 1.00 in the outcome column (PER_VAL). The outcome was assigned a value of 0, when the causal combinations had consistency values below the cut-off point. These configurations are insufficient for the creation of value.

Table 6: *Truth table*

Config. #	HC_EU	HC_HRSSC	SC_HRSSC	OC_HRSSC	COPROD	number	PER_VAL	raw consist.
1	0	1	0	1	1	215	0	0.420635
2	1	1	1	1	1	159	0	0.731665
3	0	0	0	0	0	135	0	0.554358
4	0	0	1	0	1	132	0	0.546596
5	1	0	1	0	1	129	1	0.800732
6	1	1	0	1	1	122	0	0.646847
7	1	0	0	0	0	121	1	0.757621
8	0	1	1	1	1	111	0	0.315349
9	1	1	0	0	1	95	1	0.822309
10	1	1	1	0	1	86	1	0.756272
11	0	1	0	0	1	79	0	0.643582
12	0	1	1	0	1	78	0	0.607044
13	1	1	1	1	0	58	1	0.747881
14	1	1	0	1	0	46	0	0.675827
15	0	1	1	1	0	42	0	0.563054
16	0	0	0	0	1	42	0	0.667713
17	1	0	1	1	1	40	0	0.732866
18	1	0	0	1	1	40	0	0.739762
19	1	0	1	0	0	34	0	0.700760
20	0	1	1	0	0	34	0	0.621394
21	0	0	0	1	1	30	0	0.617007
22	0	0	1	1	1	27	0	0.587773
23	1	0	0	0	1	26	1	0.821696
24	1	1	1	0	0	21	1	0.756883
25	0	1	0	1	0	15	0	0.547316
26	0	0	1	0	0	11	0	0.632722

1: presence of the causal condition or outcome; 0: absence of the causal condition or outcome; N=2062 individuals (end-users and HR SSC managers).

From the 32 possible causal combinations, six did not empirically exist. These remainders were not listed in table 5 and therefore excluded for the sufficiency analysis. Thus 26 of the 32 logically possible configurations are represented by "strong members" (Greckhamer, 2011, p. 96) in the data. From those 26 listed configurations, seven configurations consisting of 536 cases in total were exceeding the cut-off point and thus were sufficient for a high perception of HR SSC value. These seven configurations all contain the presence of high end-user human capital for the creation of high value, which is consistent with the results of the analysis of necessary conditions. The configuration occurring most frequently for high perceived value contains 129 cases including the presence of high end-user capital, high HR SSC social capital and co-production, and the lack of high HR SSC HRM-specific human capital and high organizational capital. The second most frequently occurring configuration contains only the presence of high end-user human capital, while lacking the HR SSC's intellectual capital dimensions and co-production.

The next step is to logically reduce the configurations from the truth table through Boolean algebra. In table 7, the sufficient combinations from the truth table were minimized which resulted in four remaining configurations leading to high value. The black dot indicates the presence of a high level condition, while the striped dot indicates the absence of a high level condition. It is important to note that the absence of a high level condition does not have to mean that the condition is not present at all, as the absence of a high level condition indicates the presence of a low level condition. The consistency was set at .75 and is also a precondition for assessing the set theoretic coverage. The coverage value in table 7 estimates the result's empirical importance of achieving the outcome of interest (Greckhamer, 2011). Ragin (2008) divides coverage into *raw coverage* and *unique coverage*. Raw coverage indicates which share of the outcome is explained by a certain configuration. The unique coverage evaluates to what extent the outcome is exclusively explained by a particular configuration. A small unique coverage value indicates that the configurations overlap. The combined coverage of all combinations leading to the outcome is the *solution coverage*. If the outcome is equifinal, because multiple configurations seem to be sufficient, the raw and unique coverage provide assessments of their "relative empirical importance" (Greckhamer, 2011, p. 94).

Table 7 shows four configurations consisting of multiple causal conditions and thus no causal condition alone is sufficient for the creation of high value. Each configuration represents a different causal path.

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Table 7: *Configurations for the creation of high HR SSC value (intermediate solution)*

	Configuration 1	Configuration 2	Configuration 3	Configuration 4
HC_EU *Human capital end-user*	●	●	●	●
HC_HRSSC *Human capital HR SSC*		●		Ө
SC_HRSSC *Social capital HR SSC*		●	Ө	Ө
OC_HRSSC *Organizational capital HR SSC*	Ө		Ө	
COPRO *Co-production*	●	Ө		Ө
Consistency	0.778048	0.730899	0.769085	0.731891
Raw coverage	0.293648	0.169238	0.224156	0.141118
Unique coverage	0.114384	0.089091	0.010045	0.000000

Solution coverage: 0.473342

Solution consistency: 0.745481

●: presence of a condition. The condition is the in-group of high-level capital or co-production/out the group of low level capital or co-production; Ө: absence of a condition. The condition is in the group of low level capital or co-production/out the group of high level capital or co-production; black space: indicates ''do not care''.

Configuration 1 explains that high HR SSC value is a product of the presence of high human capital of the end-user and presence of a high degree of co-production, and the absence of high organizational capital. This configuration shows that the presence of human capital of the end-user fills the absence of organizational capital of the end-user through co-production. This set thus represents a substitutive relationship, where a high level of end-user human capital substitutes for a low level of organizational capital in order to reach high levels of value. The raw coverage of .29 and the unique coverage of .11 are the highest coverage rates compared to the other configurations. However, the unique coverage is quite low, indicating that the configuration overlaps with other configurations.

Configuration 2 shows that high HR SSC value is created through the presence of a high level of human capital of the end-user and high levels social and human capital of the HR SSC and the absence of a high degree of co-production. Within this set, the human capital and the social capital of the HR SSC, and the human capital of the end-user complement each other to create value-in-use by the end-user. This set is therefore a synergistic relationship rather than a substitutive relationship.

Configuration 3 consists of the presence of a high level human capital of the end-user and the absence of high levels of social capital and organizational capital of the HR SSC. In other words the end-user's high level of human capital substitutes for low levels of the HR SSC's social capital and organizational capital. Besides that, the HR SSC's social capital and organizational capital might be an internal synergistic relationship.

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Configuration 4 shows that value is created with the presence of a high level of the human capital of the end-user and the absence of high levels of the HR SSC's human capital and social capital. Also a high degree of co-production is absent. Here, the end-user substitutes for the human capital and the social capital through low levels of co-production. The human capital and social capital of the HR SSC can also be internal synergistic relationship.

Overall, the high human capital of end-user was present in all configurations, which is in accordance with the necessary condition analysis. The configurations have a consistency score of >.73. Especially configuration 1 (.78) and 3 (.77) show an acceptable consistency score. However, configuration 2 (.73) and 4 (.73) are below the threshold of .75 for consistency. Despite this, all the configurations have similar consistency scores (.73-.78), which indicates that these different solutions similarly lead to the same outcome. Hence, there are possibly at least four paths to high perceived value. The raw coverage of the configurations seems to be relatively low. Except for the raw coverage rate of .29 of configuration 1, the remaining scores stay below .25. Overall, the unique coverage is quite low. Only for the first three configurations the unique coverage exceeds the value of 0. The unique coverage of configuration 4 does not exceed 0, which implies that it does not provide a unique contribution to the explanation of high HR SSC value.

The solution consistency of .745 explains that 74,5% of the four configurations is sufficient for the outcome to occur. The solution coverage of .4733 indicates that 47.3% of set of high perceived value is covered by the four configurations. This score indicates that almost the half of the configurations leading to high-perceived value is present within these findings. However, it also means that the remaining 52.7% consists of other configurations, which are not found in this research. FsQCA excluded these configurations as they did not meet the consistency and frequency cut-off points.

Based on these findings, the second part of proposition 1, end-user's human capital is necessary for high perceived value, can be supported. The four configurations all contained a high level human capital of the end-user. Proposition 2 can also be accepted, as the findings show that there are four configurations that are sufficient for high perceived value. The configurations included different possible combinations of end-user's human capital and the HR SSC's intellectual capital. Proposition 3 can be partly accepted. Co-production can indeed become part of a combination in which intellectual capital is lacking in order to for the end-user to perceive high value, but does not have to become part in all cases. Furthermore, when the end-user lacks high human capital, high value cannot be perceived in any case, because of its necessity. In that case, adding co-production will not change low perceived value into high perceived value.

DISCUSSION

The goal of this research was to explore the way in which the intellectual capital of the HR SSC and the human capital of the end-user combine to produce high HR SSC value. Existing literature is mainly focused on describing the HR SSC phenomenon and therefore lacks insights on why some HR SSCs fail to succeed. This research assumed that creating value for end-users could reap the HR SSC's strategic benefits. End-users are the consumers of the provided HR shared services, and thus the creators of value. They apply their human capital and make use of the HR SSC's intellectual capital to create value-in-use. When the end-users are unable to use the services, they will co-produce the services with the HR SSC. A fuzzy set analysis was applied as a method to determine what knowledge resources of the end-user and the HR SSC are necessary and how their combinations are sufficient for high HR SSC value. In the last chapter of this thesis the main findings will be discussed.

RESEARCH IMPLICATION

The research findings presented in this study provided a better understanding and new insights of end-user's perceptions of HR SSC value and thereby the S-D logic's foundational premises. FsQCA aided on clarifying the necessary or sufficient knowledge resources conditions for the occurrence of high perceived value and therefore shows promise for research in the HRM field for testing configurations. The findings explain that there are four pathways in which the knowledge resources of the HR SSC and the end-user combine for a high value perception. The first configuration combines the presence of high end-user human capital and high co-production, and the absence of high organizational capital of the HR SSC. The second configuration combines the presence of high end-user human capital, high HR SSC human capital, and high HR SSC social capital, and the absence of high co-production. The third combines the presence of high human capital, and the absence of both high HR SSC social capital and organizational capital. Finally, the fourth configuration combines high end-user human capital, and the absence of high level HR SSC human capital, HR SSC social capital, and co-production. The implications of these findings will be discussed further.

The first major implication of this research is that the results contribute to the foundational premises of the S-D logic, as it provides new insights in the role of the value proposition in the value creation process. In proposition 1 it was expected that the intellectual capital of the HR SSC is necessary for value, as the S-D logic states that a service provider must at least offer a value proposition for the end-user's consumption for the creation of value-in-use (Ballantyne & Varey, 2006; Spohrer et al., 2008; Vargo & Lusch, 2004). In line with the intellectual capital concept, the findings showed that the

intellectual capital dimensions individually were not consistent to be necessary for a high value perception of the end-user. Instead, either the HR SSC's human capital, social capital, and/or organizational must be present for the end-user's value perception to be high, and thus value follows from the interrelationship between the three sub-dimensions (Reed et al., 2006; Ruta, 2009). However, the findings also show the necessity of either the HR SSC's human capital, social capital, and or/organization capital when a high value perception was absent. This indicates that the intellectual capital of the HR SSC is trivially necessary for a high value perception of the end-user; in all cases, high value perception or no high value perception, at least one of the intellectual capital dimensions is present (Braumoeller & Goertz, 2000). An explanation for this is that organizations that establish an HR SSC always have at least one intellectual capital dimension present. An HR SSC that does not offer any services, such as the staff's knowledge and skills on certain HR domains through call-center services and/or other HR systems and processes, is basically not a HR SSC and would be nothing more than an empty unused office. Therefore, the presence of at least one intellectual capital dimension is entirely logical, because otherwise there is no point in the HR SSC's establishment. This idea was also reflected in the findings, as each configuration has an intellectual capital dimension present, although not always at a high level. Translating these findings in the S-D logic, they indicate that offering a value proposition must indeed be present for a high value perception, but it is an empirically irrelevant necessary condition. The presence of a value proposition in a service context is self-evident, because service providers will always offer a value proposition towards their customers. Therefore, the first part of proposition 1, the necessity of the HR SSC's intellectual capital for a high value perception of the end-user, can be supported, although the necessary condition is empirically irrelevant for a high value perception (Ragin, 2006).

The second major implication of this research for S-D logic is that the findings build new knowledge on the role that end-users play in the value creation process. In proposition 1, it was also expected that the end-user's human capital would be necessary for a high perception for value. The findings show that a high level human capital of the end-user is indeed a necessary condition for a high value perception of the end-user. Although the consistency score of the end-user's high-level human capital for necessity did not meet the threshold, the end-user's high-level human capital was always present in the four configurations leading towards high-perceived value, and was therefore accepted for being a necessary condition. Hence, end-users perceive high value for the HR SSC when they have a high level of knowledge and skills to use the HR shared services. Besides that, end-users with high level human capital were able to create value even with the absence of high-level intellectual capital/presence of low-level intellectual capital. The value propositions can even satisfy the end-user's needs when it is at a low

quality level. For example, the first third, and fourth configuration contain the absence of certain high intellectual capital dimensions/presence of certain low intellectual capital combined with a high end-user human capital. This is a new and interesting finding for the S-D logic, because the findings indicate that a low quality value proposition can be substituted by the end-user's high level human capital during the consumption process. This finding contradicts the S-D logic, as the S-D logic argues that the end-user will not make use of the service when the value proposition does not meet the end-user's needs. Of course, the findings also indicate that end-users in a HR SSC context simply do not have high demands in using the HR shared services and thus still meets their needs. However, the finding also explains that end-users accept low quality demands because they have a high level human capital to fill that gap. Hence, end-users are able to substitute by relying on their high level human capital. The S-D logic does not say anything about substitution possibilities of the customer. Proponents of the S-D logic merely argue that the service provider and customer are capable of improving the condition of another service system through the sharing of resources (Grönroos, 2011a), but they do not explain how this exchange actually work. So the findings of this research show that when the service provider lacks resources, the customer can overcome this gap by substituting high-level human capital and thereby adds new knowledge to the current literature of the S-D logic. The finding shows the end-user in a whole new role in the value creating process, namely the one as a substitor.

The third implication stems from the first and second implication of this research, because these two implications put new light on the role of the HR SSC as a value facilitator. Because the necessity of the intellectual capital of the HR SSC seems to be empirically irrelevant for a high value perception and the end-user is able to substitute the possible absence of either one high level intellectual capital dimension for his or her own human capital, the importance of the role of the HR SSC as a value facilitator can be questioned. Of course, the service provider must at least offer a value proposition (Vargo & Lusch, 2011), which he also will do, but the extent to which this facilitates its less important when the end-user has a high level human capital. When the end-user does not have a high level human capital, it is more important for HR SSCs to invest in developing that end-user's human capital towards a high level, than higher quality services, because of its necessity for high perceived value. Configuration three, for example, shows that end-users are fine with the HR SSC's low level social capital and organizational capital, and are able to create value by relying on their human capital. Therefore, for the S-D logic this means that the extent to which the service provider offers resources is not as important as having highly knowledgeable and skilled end-users, and thus the role of the HR SSC as a value facilitator in the value creation process can actually be quite minimal.

Fourth, besides three novel theoretical implications, the findings also find support for the current literature of S-D logic. Although the role of the HR SSC as a value facilitator can be minimal, it does not say that this role does not exist. In line with the S-D logic, the second configuration explains that the HR SSC functions as a value facilitator, due to the presence of its high level human and social capital. These value propositions give the end-user the potential to create value out of it. The presence of a low degree of co-production could be because of the presence of high level human capital, as call-center services always require a direct interaction (Grönroos & Voima, 2013). Because the end-user has the required high-level human capital, he or she is able to consume the HR shared services and to create real value out of the offered value proposition by the HR SSC. This reflects the end-user as a value creator. Also here the end-user is a co-producer, but co-production does not serve as a step for substitution, because all the knowledge resources are present at a high level. In more practical terms, this configuration indicates that the HR SSC has the knowledge to offer their professionalism and expertise towards the end-user and to exchange knowledge internally among other HR SSC employees, whereas the end-user has the required knowledge to communicate, interact, and collaborate with the HR SSC, allowing him or her to create value. Hence, the end-user functions as a value creator when he or she is able to create value and simultaneously the HR SSC functions as a value facilitator by providing the end-user the required resources for the consumption process (Grönroos, 2011b). Due to the call-center service, giving answers and advise and being answered and advised are simultaneous processes, and thus both the HR SSC service employee and the end-user can take actions that influence each other processes and the outcome (Grönroos, 2011b). Hence, because co-production is present at a low level, the end-user becomes a co-producer and the HR SSC a co-creator. Second, the first configuration shows that the high level human capital of the end-user substitutes the absence of high level organizational capital of the HR SSC. According to S-D logic, the end-user becomes can be come a co-producer (Grönroos, 2011b; Grönroos & Voima, 2013). Configuration one demonstrates that due to the possibility to co-produce to a high extent, the end-user has the control to determine and/or develop the lack of high organizational capital in such a way that he or she is able to influence the value proposition to his or her own needs, that the HR SSC reshapes its value proposition and becomes a co-creator, and thus he end-user is able to create value (Hunt, 2004; Meijerink et al., 2013a). Hence, this configuration also acknowledges the end-user's role as a co-producer and the HR SSC as a co-creator, thereby providing support for S-D logic. However, and earlier explained as the second implication of this research, the idea of the end-user with high human capital for the low HR SSC's organizational capital, is not discussed in S-D logic and therefore contributes to the S-D logic's current literature. To conclude, the existence

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of multiple configurations provides support for proposition 2. There are multiple pathways consisting of the end-user's human capital and the HR SSC's intellectual capital that are sufficient for the end-user's value perception.

Finally, the fifth implication of this research supports the fact that co-production is context-dependent. As mentioned before, the first and second configuration are in line with S-D logic and explain that co-production takes place due to direct interactions (e.g. call-center) or the lack of high level intellectual capital. However, the third and fourth level also contain low level intellectual capital, but the presence of co-production does not care or is present at a low level, respectively. In the case of the third configuration, the presence of co-production does not care when the end-user has high level human capital and the social capital and organizational capital of the HR SSC are at a low level. Here, there are no direct interactions. Grönroos (2011) explains that in the case of no direct interactions, the customer is engaged in independent value creation through indirect interactions with the resources obtained from the service provider or those that are available to them. These resources are outputs of the HR SSC's processes, such as the HR system. Hence in the case of the third configuration and based on the findings of Tuli et al. (2007), it could be that HR SSC employees shared knowledge to a low extent aimed on creating organizational capital in the form of, for example an HR system, that could effectively satisfy the end-user's needs. Here, the HR SSC's organizational capital depends on the HR SSC's social capital and is therefore an internal synergistic relationship. Because the end-user obtains high-level human capital he or she is able to engage in an independent value creation. In the case of the fourth configuration, there could also be an internal synergistic relationship. In this case the end-user co-produces call-center services with the HR SSC employees, as the configuration shows the presence of high end-user's human capital and low HR SSC human capital. Because call-center services require a direct interaction, the presence of co-production seems to be more logical than in the third configuration. Through the high level human capital, the end-user is able to influence to HR SSC about his or her needs and to influence the value proposition. Also here an internal synergistic relationship takes place due to the presence of low level social capital of the HR SSC. As Tuli et al. (2007) suggest, the HR SSC employees could exchange knowledge on how to satisfy the end-user's needs in the best possible way, so that the HR SSC becomes a co-creator. These findings provide new a phase in the S-D logic's value creating process, as they suggest that resources can also be exchanged externally in order to enhance value creation by the end-user. Proposition 3 can partly be accepted. Co-production can indeed become part of a combination in which intellectual capital is lacking in order to for the end-user to perceive high value. However, this does not have to be the case, since end-users can also engage in independent value creation (Grönroos, 2011). Furthermore, when the end-user lacks high

human capital, high value cannot be perceived in any case, because of the necessity of high-level human capital. So, even when co-production becomes part of that combination, it will be of no use for high perceived value. Finally, co-production is also not always related with substitution effects. As explained earlier, the second configuration mirrors a synergistic relationship, but co-production still takes place. Here, end-user's initiate direct interactions due to call-center services, and thus the HR SSC's production process (e.g. delivering answers and advice) takes place at the same time with the end-user's consumption process (e.g. getting answered and advised).

PRACTICAL IMPLICATION

Besides the theoretical implications, the results have also some implications for people working in the field. As said earlier, the findings are equifinal, meaning that there are different ways in which HR SSCs can obtain high value, and none of these ways is the "best". The results provide managers guidelines in what conditions are needed and what combinations of conditions guarantee a high end-user perception of HR SSC value.

Probably the most important finding of this research is the necessity of high level human capital of the end-user for a high value perception. Therefore, the first implication for practice is to invest in end-user human capital. Investing in end-user's human capital seem to be more important than investing in the HR SSC's intellectual capital to become high qualitative. In the case study of Meijerink and Bondarouk (2013), the end-users did not have the skills and experience to use the HR SSC self-service technologies. This resulted in low HR service quality, as end-users are responsible to maintain their own personal data. Therefore, they should gain knowledge and skills through practice, which could help them for future usage (i.e. experience benefits (Priem, 2007)). The HR SSC could stimulate the end-users in using the HR shared services more often in order to increase their experiences. This implication for the case-study of Meijerink and Bondarouk (2013 suggests that HR SSCs have to develop end-user's human capital and manage the end-user's in a way that they are able to effectively maintain the HR SSC's organizational capital to such an extent that the HR SSC is able to reap their strategic benefits.

Second, based on the findings, managers have four possible and sufficient ways for the creation of high value. The way to choose may depend on the current situation the HR SSC is in. Each HR SSC is unique, and therefore the level of intellectual capital of the HR SSC and the human capital of the end-user matter in the determination of creating value. For example, the case study of Cooke (2006) showed that a line-manager was dissatisfied with the HR shared services offered by the HR SSC and performed shadow administrations instead, in which he carried out HR work by himself. Within this case, the HR SSC's organizational capital lacked cost-efficiency, as it took the line-

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manager more time to use the self-service technologies than when they just did the work by him. Conform the first configuration, the line-manager had a high level human capital, as he was able to do the HR work by himself, but the HR SSC had a low level organizational capital. According to first configuration, the combination of high end-user human capital and low organizational capital should merely be supplemented by a high degree of co-production in order to create HR SSC value. Therefore, in this particular case study, the HR SSC could support end-users to actively engage in the service production and create commitment, by emphasizing end-user's personal benefits, involving them in the HR SSC implementation process, and/or organizing trainings. Bettencourt (1997) found that perceived support has a positive effect on the degree of customers' participation in service production process. However, and as said before, there are more ways that lead to Rome. The HR SSC described in the case study of Cooke (2006) can also take a different road towards creating HR SSC value. The HR SSC can also leave the lack of co-production for what it is, and focus on the intellectual capital of the HR SSC instead. Based on the second configuration that was found in this research, the HR SSC can also invest in the HRM-specific human capital and the social capital of the HR SSC to create high service value. Skaggs and Youndt (2004) found that employee's human capital is negatively related to customer's co-production, because inputs of customer's in the production process, allows for standardization and thus reduces the need for high level human capital of the service employees. The human capital of the HR SSC staff can be improved by hiring highly educated people or through training and development. Planning weekly meetings can enhance the social capital. So conform to the findings from this study, the HR SSC in the case study of Cooke (2006) could invest in co-production as in the first configuration or human capital of the HR SSC as in the second configuration to overcome cost-inefficiencies.

Hence, the examples show that each HR SSC is unique, faces different problems, and asks for tailor made solutions. The presence and absence of the end-user's high level human capital, the HR SSC's intellectual capital, and co-production matter in the determination of which solution would suit for the creation of high perceived value.

LIMITATIONS AND FUTURE RESEARCH

The first limitation of this research is that the actual creation of value-in-use was not measured. Although this research provides answers on how value is perceived as high, it stays unclear if value is actually created in the consumption process. However, value-in-use cannot be measured through questionnaires and asks for a different research setting such as making observations in the field, which was not possible due to restrictions in time. Besides that, measuring perceptions is a widely used predictor for explaining customer behaviors (Chang, 2005). Future research could consider a more in-depth

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approach by analyzing if the end-user's perception of value leads towards the actual creation of value-in-use.

Second, this research could have provided more in-depth by also analyzing the second-order and/or third-order constructs, instead of lumping the constructs together by measuring the first-order constructs. For example, making a distinction in HRM-specific functional human capital and HRM-specific infrastructural human capital could have provided information about which is more important for the end-user to perceive value. Such analysis would incorporate even more interrelationships between attributes. To deepen the analysis, future research could contribute the theoretical field even more and provide new practical implications for firms that established a HR SSC by analyzing the dynamics of the third-order constructs.

Third, the results of the current research must be interpreted cautiously. The respondents of each separate participating organization were unevenly distributed, as the firms ranged in size. The largest firm had 308 responding end-users, while the smallest firm had only 12 end-users responding to the questionnaire. The unevenness of firm size can have influenced the results of fsQCA. The larger firm has more influence on the outcomes and could have pushed the results in certain configurations, because more cases were able to fall in that configuration.

Fourth, the coverage rate showed that 47.3% of set of high perceived value is covered by the four configurations, which is slightly less than the half of all possible ways. This means that the remaining 52.7% consists of other configurations, which are not found in this research. Further research could investigate what different configurations the other 52.7% towards high perceived value include.

Fifth, this research consisted of a large data set including 2062 cases. Although large datasets are can make the findings more representative in convential research, fsQCA has the benefit of allowing the analysis of small samples due to its comparative approach (Priem, 2007). Ragin (2008) points that the application of large datasets in fuzzy set analysis has to be done with caution. Because the great amount of cases, familiarity with individual cases may get lost to such an extent it will limit the possibilities for causal interpretations and the reasons for instances of limited diversity (Kent, 2008). Furthermore, cases can be assigned to the wrong configuration through measurement error. To overcome these problems, a relevant threshold was used so that a very few instances were excluded from the analysis.

Finally, data was collected among Dutch organizations with HR SSCs, meaning that the findings may not be generalizable among organizations with HR SSCs in other countries. However, the S-D logic that was applied in this study and could be applied in every service context over different countries, as it measures the service delivery in general.

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CONCLUSION

Involving end-users in the value creation process is crucial, as they define what value is. Especially their knowledge and skills have to be at a high level to be able to consume the services. FsQCA proved that value could be created in four different ways, in which the presence of high human capital can complement or substitute the intellectual capital of the HR SSC. The findings showed interesting results that confirmed the used theories, brought new insights, and provided suggestions for future research.

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APPENDIX 1: END-USER QUESTIONNAIRE
(Meijerink, 2013)

Services provided by the HR SSC

This part of the questionnaire concerns the services offered by the HR SSC. Could you please indicate which of the following services you used during the last 12 months?

☐ Inquiring my pay slip on paper or online.

☐ Making a request concerning personnel and payroll administration (e.g. application for leave, transmit changes in personal data, declare travel expenses, requesting study facilities).

☐ Inquiring an employee of the [HR SSC] for support in making a request concerning personnel and payroll administration.

☐ Requesting information or advice from an employee of the [HR SSC].

☐ Searching for online information regarding personnel and payroll administration, laborconditions and legal position.

Performance of the [HR SSC]

This part of the questionnaire concerns the quality of the services delivered by the [HR SSC]. Could you indicate the extent to which you agree with the theses presented below?

	Strongly disagree	disagree	neutral	agree	strongly agree
When the [HR SSC] promises to do something by a certain time, it does so.	☐	☐	☐	☐	☐
When I have a problem and take it to the <HR SSC>, the [HR SSC] shows a sincere interest in solving it.	☐	☐	☐	☐	☐
The [HR SSC] performs its services right the first time	☐	☐	☐	☐	☐
The [HR SSC] provides its services at the time it promises to do so	☐	☐	☐	☐	☐
The [HR SSC] processes my requests concerning personnel and payroll administration in an error-free manner.	☐	☐	☐	☐	☐
Employees of the [HR SSC] inform me exactly when their services will be provided.	☐	☐	☐	☐	☐
Employees of the [HR SSC] give me prompt service.	☐	☐	☐	☐	☐
Employees of the [HR SSC] are always willing to help me.	☐	☐	☐	☐	☐
Employees of the [HR SSC] are never too busy to respond to my requests.	☐	☐	☐	☐	☐
I always get feedback from the [HR SSC] when my requested services are performed	☐	☐	☐	☐	☐
The behavior of employees of the [HR SSC] instills confidence in me.	☐	☐	☐	☐	☐
I feel safe in my interactions with the [HR SSC].	☐	☐	☐	☐	☐

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	Strongly disagree	disagree	neutral	agree	strongly agree
Employees of the [HR SSC] are always courteous with me	☐	☐	☐	☐	☐
Employees of the [HR SSC] have the knowledge to answer my questions	☐	☐	☐	☐	☐
The employees of the [HR SSC] always care about my hr-related problems	☐	☐	☐	☐	☐
The [HR SSC] is always available when I need its support	☐	☐	☐	☐	☐
The [HR SSC] has employees who give me personal attention	☐	☐	☐	☐	☐
The [HR SSC] has my best interest at heart.	☐	☐	☐	☐	☐
Employees of [HR SSC] understand my specific HR-related needs or problems	☐	☐	☐	☐	☐
The [HR SSC] has user-friendly tools (e.g. manuals, website, HR portal, or online self-services).	☐	☐	☐	☐	☐
Tools used during the services provided by the [HR SSC] look professional.	☐	☐	☐	☐	☐

Cost for using the services of the [HR SSC]
This part of the concerns the effort and time you as an end-user have to spend for receiving and using the services of the [HR SSC]. Could you indicate the extent to which you agree with the theses presented below?

	Strongly disagree	disagree	neutral	agree	strongly agree
For me, it costs much effort to secure that my personal HR data (on e.g. address, bank account, working hours, sick leave or leave hours) are updated when they change	☐	☐	☐	☐	☐
For me, it costs much time to make requests concerning personnel and payroll administration, online or through paper.	☐	☐	☐	☐	☐
For me, it costs much effort to make sure that my requests concerning personnel and payroll administration are processed.	☐	☐	☐	☐	☐
have to spend much time in order to obtain an answer to a question I have for an employee of the [HR SSC].	☐	☐	☐	☐	☐
I have to spend much time in order to obtain information on personnel and payroll administration, terms of employment or legal status from the [HR SSC].	☐	☐	☐	☐	☐
For me, it costs much effort to inquire the [HR SSC].	☐	☐	☐	☐	☐

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Knowledge for using the services of the [HR SSC]
This part of the questionnaires concerns the extent to which you feel able and knowledgeable to make use of the HR services of the [HR SSC]. Could you indicate the extent to which you agree with the theses listed below?

	Strongly disagree	disagree	neutral	agree	strongly agree
I know precisely where to make requests concerning personnel and payroll administration (e.g. application for leave, declare travel expenses, requesting study facilities, life-course saving scheme).	☐	☐	☐	☐	☐
I always know which steps to follow for making requests concerning personnel and payroll administration (online or on paper).	☐	☐	☐	☐	☐
I know precisely how my personal details (e.g. private address or bank account number) can be updated if they change.	☐	☐	☐	☐	☐
I know precisely whom to turn to when I have a problem with my personnel administration.	☐	☐	☐	☐	☐
I know precisely where I can find or obtain information on terms of employment conditions.	☐	☐	☐	☐	☐
I am always able to clearly explain my HR-related problems to an employee of the [HR SSC].	☐	☐	☐	☐	☐
I am fully able to solve my HR-related problems or get an answer to my question, together with an employee of the [HR SSC].	☐	☐	☐	☐	☐

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APPENDIX 2: HR SSC QUESTIONNAIRE

(Meijerink, 2013)

Services provided by the HR SSC

This part of the questionnaire concerns the services offered by the HR SSC. Could you please indicate which of the following services you used during the last 12 months?

□ Inquiring my pay slip on paper or online.

□ Making a request concerning personnel and payroll administration (e.g. application for leave, transmit changes in personal data, declare travel expenses, requesting study facilities).

□ Inquiring an employee of the [HR SSC] for support in making a request concerning personnel and payroll administration.

□ Requesting information or advice from an employee of the [HR SSC].

□ Searching for online information regarding personnel and payroll administration, laborconditions and legal position.

Human capital

This part of the questionnaire concerns the quality of the services delivered by the [HR SSC]. Could you indicate the extent to which you agree with the theses presented below?

	Strongly disagree	disagree	neutral	agree	strongly agree
Among the employees of the <HR SSC> very well-developed knowledge is present of the content of HR legislations (i.e. tax legislation, pension laws, legal positions).	□	□	□	□	□
Among the employees of the <HR SSC> very well-developed knowledge is present of the content of the terms of employment policies of <COMPANY>.	□	□	□	□	□
Among the employees of the <HR SSC> very well-developed knowledge is present of where information on HR legislation and terms of employment policies can be found (e.g. in law books, intranet, policy documents and circular letters).	□	□	□	□	□
Among the employees of the <HR SSC> very well-developed skills are present for keeping up with changes in HR legislation and terms of employment policies.	□	□	□	□	□
Among the employees of the <HR SSC> very well-developed knowledge is present on the way in which HR legislation and terms of employment policies should be executed.	□	□	□	□	□
Among the employees of the <HR SSC> very well-developed knowledge is present of specific administrative HR processes.	□	□	□	□	□
Among the employees of the <HR SSC> very well-developed knowledge is present of which steps specific administrative HR processes are precisely constituted.	□	□	□	□	□
Among the employees of the <HR SSC> very well-developed knowledge is present of who (themselves or end-users) are precisely responsible for executing specific HR process steps.	□	□	□	□	□
Among the employees of the <HR SSC> very well-developed skills are present for executing administrative HR processes.	□	□	□	□	□

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	Strongly disagree	disagree	neutral	agree	strongly agree
Among the employees of the <HR SSC> very well-developed skills are present for using information technologies designed for performing HR-related administrations.	☐	☐	☐	☐	☐
Among the employees of the <HR SSC> very well-developed skills are present for using information from information technologies (e.g. databases) to improve administrative HR processes.	☐	☐	☐	☐	☐
Among the employees of the <HR SSC> very well-developed skills are present for using HR information systems to answer the questions of end-users.	☐	☐	☐	☐	☐

Organizational capital

This part of the concerns the effort and time you as an end-user have to spend for receiving and using the services of the [HR SSC]. Could you indicate the extent to which you agree with the theses presented below?

	Strongly disagree	disagree	neutral	agree	strongly agree
Much of the knowledge in the <HR SSC> is documented in manuals, process descriptions, (knowledge)databases, information technologies, etc.	☐	☐	☐	☐	☐
The <HR SSC> 's culture contains many valuable ideas, service delivery principles and ways of providing HR services.	☐	☐	☐	☐	☐
The <HR SSC> embeds much of its knowledge in systems and processes.	☐	☐	☐	☐	☐
The <HR SSC> standardized much of its processes.	☐	☐	☐	☐	☐
The <HR SSC> has information technologies which are well tailored to the specific situation of the <HR SSC> at its disposal (e.g. for self-services, back office administrations, handling calls, etc.).	☐	☐	☐	☐	☐
The <HR SSC> records vital knowledge and information to prevent loss in the event of (key) people leaving the organization.	☐	☐	☐	☐	☐

Social capital

This part of the questionnaires concerns the extent to which you feel able and knowledgeable to make use of the HR services of the [HR SSC]. Could you indicate the extent to which you agree with the theses listed below?

	Strongly disagree	disagree	neutral	agree	strongly agree
The employees of the <HR SSC> share information and learn from each other.	☐	☐	☐	☐	☐
The employees of the <HR SSC> exchange ideas with each other.	☐	☐	☐	☐	☐

	Strongly disagree	disagree	neutral	agree	strongly agree
The employees of the <HR SSC> mutually share relevant information about business units and end-users that the < HR SSC> serves.	☐	☐	☐	☐	☐
The employees of the <HR SSC> tune a lot into each other.	☐	☐	☐	☐	☐
The employees of the <HR SSC> share much knowledge amongst each other.	☐	☐	☐	☐	☐

Co-production
This part of the concerns the effort and time you as an end-user have to spend for receiving and using the services of the [HR SSC]. Could you indicate the extent to which you agree with the theses presented below?

	Strongly disagree	disagree	neutral	agree	strongly agree
The end-users are heavily involved in co-producing the HR service of the <HR SSC> they are acquiring.	☐	☐	☐	☐	☐
The <HR SSC> requires a great deal of information from each end-user before producing an HR service.	☐	☐	☐	☐	☐
For solving their HR-related problems, the end-users extensively cooperate with the employees of the <HR SSC>.	☐	☐	☐	☐	☐
The end-users have an extensive, operational role in the execution of the personnel and payroll administrative processes of <NAME ORGANIZATION>.	☐	☐	☐	☐	☐
The end-users themselves have a lot of responsibility for keeping up with their personal HR administration.	☐	☐	☐	☐	☐
The end-users contribute a lot to the realization of the HR services of the <HR SSC>.	☐	☐	☐	☐	☐
The end-users intensively cooperate in the service delivery processes of the <HR SSC>.	☐	☐	☐	☐	☐

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