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Characterising Human Capital in the Craft Industry

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Abstract: Small and medium enterprises (SMEs) play a significant role in Europe's economy. Since SMEs have distinct organisational practices and structures (e.g. owner-run, continuity over several generations, regional engagement), their intellectual capital (IC) differs from large enterprises. However, there is little research on IC in SMEs. Placing special attention on the craft industry, this research aims at closing this gap. It will present a cross-disciplinary review of research on craft to explore the role of knowledge and human capital in the craft industry. The findings point to overall characteristics which can guide future research and inform policy-making in the craft industry.

Keywords: craft, small and medium enterprises, knowledge, human capital, intellectual capital

1. Introduction

The shift towards the knowledge-based economy resulted in an emphasis on intangibles. The creation, transfer, and use of knowledge are considered essential for economic success. In that regard, intellectual capital (IC) provides a perspective to analyse and evaluate the intangible value of organisations. IC has been divided into three components: human capital, structural capital, and relational capital; they can be analysed on a micro level (e.g. individuals or companies) as well as on a macro level (e.g. industries or countries) (Arenas, Griffiths, & Freraut, 2013; Stähle, Stähle, & Lin, 2015).

Small and medium enterprises (SMEs) greatly contribute to the global economic output. Most often, these enterprises engage in the knowledge- and labour-intensive craft industry. Only recently, IC research shifted its attention to SMEs in general, but has not yet taken into account the particularities of the craft industry. I stress the role of knowledge, and try to understand the nature of human capital in the craft industry. Thus, the research pursues the following research question: *What characterises human capital in the craft industry?*

To answer this question, I present a cross-disciplinary structured literature review (Denyer & Tranfield, 2009; Massaro, Dumay, & Guthrie, 2016).

The paper is structured as follows. In the following, I will present a general introduction to SMEs and subsequently focus on the craft industry in Austria. I will argue that an IC perspective on the craft industry is crucial. In the second part, I will present key findings of the structured literature review. Finally, I will summarise implications and point to directions for further research.

2. Theoretical background

2.1 Small and medium enterprises (SMEs)

Small and medium enterprises (SMEs) play an essential role in national economies. They represent more than 90 % of enterprises worldwide and, thus, they yield social and economic importance (Khaliq et al. 2015).

In Austria, two out of three employees work for SMEs; these enterprises are the backbone of the national economy (European Commission, 2011).

Despite the diversity of the Austrian economy (divided into economic sectors of "industry", "commerce", "banks and insurance", "transport", "tourism", and "information and consulting"), 44.6 % of all Austrian companies belong to the craft industry. In particular, the so-called "micro-enterprises" play an outstanding role, as they represent 87.2 % of all Austrian companies. A micro-enterprise employs less than 10 people, makes less than € 2 million turnover, and has a balance sheet total less than € 2 million (European Commission, 2011). Most often, these micro-enterprises engage in (traditional) craft and trade.

SMEs in the craft industry generate moderate revenues, as they can hardly profit from economies of scale, and employ few employees on average (2.1 employees on average). In most cases, they are family-owned and run by the owner(s) (WKO Wirtschaftskammer Österreich, 2017). Unlike large enterprises, these companies are

unable to react to increasing cost pressure by volume growth or relocation due to their structure and characteristics.

Greiner (1998) and Cohen and Kaimenakis (2007) argue that SMEs exhibit different organisational practices compared to large enterprises, such as informal and retaining management practices, little effort on coordination and communication, or flat hierarchies. As a result, informal systems of knowledge management are in place (Desouza & Awazu, 2006) and the importance attributed to each IC component may be different (Cohen & Kaimenakis, 2007). In light of this, it becomes obvious that research on IC should pay particular attention to SMEs.

2.2 Craft industry

At this point, it is important to define what kind of economic activities should be considered as craft. The boundaries are fuzzy and related concepts such as craftsmanship, handicraft, or trade may overlap. Mills (1969) names six major features of craftsmanship: (I) The ulterior motive in work is the product being made and the process of its creation; (II) details of daily work are meaningful, as they are attached to the product of work; (III) the craftsperson is free to control his own working action; (IV) the craftsperson learns from/in her daily practice and develops capacities and skills; (V) there is no split of 'work and play' or work and culture; (VI) the craftsperson's "way of livelihood determines and infuses his entire mode of living" (p. 220). Similarly, Sennet (2006) defines "craftsmanship" as "doing something well for its own sake". Besides this emphasis on the process of generation, he argues that craft should also be evaluated in terms of its outcome. This means that the effort of doing things well becomes visible in the quality of the product created. This is what Sennet (2006, p. 104) calls "objectification": "a thing made to matter in itself".

Although the boundaries of craft in today's diversified economy may be vague, we can argue that knowledge constitutes a crucial and unifying constant in all craft practices. In traditional craft, in particular, knowledge has been evolving and accumulated over generations. How can this knowledge be conceptualised? How does it come about? Various disciplines explore specific aspects and traditions of craft. In order to build a comprehensive understanding of craft, we need to consider variety and synthesise different perspectives.

2.3 Intellectual capital (IC) in small and medium enterprises (SMEs)

IC research emerged from the observation that intangibles provide competitive advantage but can hardly be measured in financial terms (Albert & Bradley, 1996). The ongoing challenge for academia has been to define and establish theoretical grounds for the phenomenon (Bontis, 1998). Since the term 'intellectual capital' has been introduced by John K. Galbraith in 1969 (Bontis, 1998; Ding & Li, 2010; Feiwal, 1975), it took the field of IC another 35 years to arrive "at a crossroad" (Marr & Chatzkel, 2004). While early research has risen awareness that IC is a principal value drivers in organisations, more recent literature and studies focus on the theoretical underpinnings of IC. Only then, in its maturity state, the academic interest for IC in SMEs has begun to rise, but it is still limited (Bharathi Kamath, 2008; Cohen & Kaimenakis, 2007; Desouza & Awazu, 2006; Grimaldi, Cricelli, & Greco, 2016; St-Pierre & Audet, 2011; Steenkamp & Kashyap, 2010; Yew Wong & Aspinwall, 2004). Nevertheless, research on IC in SMEs offers insights into the impact that IC has on these enterprises, and what constitutes IC. As compared to large enterprises, SMEs deploy distinct models of organisational practices (Greiner, 1998) and differ in terms of interrelatedness of and emphasis on IC components (Cohen & Kaimenakis, 2007; St-Pierre & Audet, 2011).

IC consists of three dimensions: (I) human capital; (II) structural capital; (III) relational capital (Bontis, 1998; Hsu & Fang, 2009; Martín-de-Castro, Delgado-Verde, López-Sáez, & Navas-López, 2011; Nahapiet & Ghoshal, 1998; Subramaniam & Youndt, 2005; Swart, 2006) Human capital is the key element in this triple (Henry, 2013; Petty & Guthrie, 2000) and, in the context of SMEs, particularly important (Daou, Karuranga, & Su, 2014). Human capital refers to individual knowledge, skills, and experiences that are acquired through different learning modes, such as formal education, specific training, working experience, and personal development (Hsu & Fang, 2009; Wu, Chang, & Chen, 2008). It is often described as "the knowledge that employees take with them when they leave the firm" (Cañibano, Sánchez, García-Ayuso, & Chaminade, 2002, p. 3). Moreover, Martín-de-Castro et al. (2011) argue that abilities and behaviours are equally important and, thus, have to be included alike. While *abilities* are skills that result from an individuals' experience and practice over time (Subramaniam & Youndt, 2005), *behaviours* imply how individuals perform their work, e.g. mental models, paradigms, and beliefs (Martín-de-Castro et al., 2011). As a result, human capital is a concept that includes different knowledge categories (Brooking, 1996; Edvinsson & Malone, 1997; Sveiby, 1997).

As a complementary IC dimension, structural capital, or organisational capital (Daou et al., 2014), includes the infrastructure that an organisation provides for its human capital; for example, routines, procedures, and information technology (Henry, 2013).

While human and structural capital reflect an internal focus on the abilities in and the structure of the organisation, relational capital refers to the ties an organisation has with its environment. Of all IC components, this is the most controversial (Henry, 2013), and to stress particular kinds of external relationships, it is often named differently, e.g. network capital (Daou et al., 2014), customer capital, or external capital (Bontis, 1998; Stewart, 1997; Sullivan, 2000; Sveiby, 1997). Do Rosário Cabrita and Landeiro Vaz (2006), in trying to synthesise a number of approaches, argue that relational capital encompasses all knowledge embedded in the relationships with any stakeholders that influence the development of the organisation.

3. Methodology

3.1 Structured literature review (SLR)

Henry (2013) argues that IC is hard to define and quantify. In particular, existing literature does not provide insights into what characterises IC in the craft industry. This research aims at filling this gap. I conduct a structured literature review (Denyer & Tranfield, 2009; Massaro et al., 2016) to identify the essential characteristics of human capital in craft industry. Following the call of Massaro et al. (2016), this review intends to “offer a history, some critique and outline the future research potential of particular domains” (p. 795).

All process steps of this review were documented in detail and are briefly summarised in the following section.

The review is based on a comprehensive literature search (including ‘semantic relatives’) in three scientific databases (EBSCO, Scopus, and [partly] Google Scholar) that covered, among other fields, arts and humanities, business, management and accounting and social sciences. Articles in English which were published in peer-reviewed academic journals were considered.

It is important to note that there exist different conceptions of knowledge (epistemologies) which were broadly considered in the literature search. More specifically, the search terms covered human capital in terms of content (i.e. knowledge) and acquisition. ‘Knowledge’ served as the “analytical construct” (Krippendorff, 2018). I followed a broad definition of “craft” as “an activity involving skill in making things by hand” (Oxford dictionary). This includes any professional activity in the realm of production or services, as well as non-commercial activities which might be referred to as handicrafts or art.

I processed the 402 unique search results in three stages. First, I analysed all titles, abstracts, and keywords of the articles to see whether the use of the word ‘craft’ complies with the chosen definition. I excluded all articles which use the term differently (homonym), i.e. as a metaphor or with different meaning (e.g. articles on craft breweries). This selection process resulted in a subset of 117 articles (Selection-1). Second, I revisited the titles, abstracts, and keywords to identify those articles that deal with craft practice and focus on knowledge (intellectual capital) aspects and, thus, are relevant for the scope of the research at hand. This selection process resulted in a list of 42 articles (Selection-2). Table 1 summarises the three stages of the selection process.

Table 1: Three stage selection process

Scientific database	Number of unique search results (initial sample)	Selection-1	Selection-2
Scopus	326 articles	97 articles	34 articles
EBSCO	37 articles	6 articles	0 articles
Both	39 articles	14 articles	8 articles
<i>TOTAL</i>	<i>402 articles</i>	<i>117 articles</i>	<i>42 articles</i>

3.2 Problem-driven content analysis

I conducted an in-depth analysis of the relevant sample (Selection-2). I followed the “problem-driven content analysis” approach (Krippendorff, 2018) that is “motivated by epistemic questions about currently inaccessible phenomena [...] that the analyst believe texts are able to answer.” Pursuing the defined research question aimed to “find analytical paths from the choice of suitable texts to their answers” (Krippendorff, 2018, p. 340). The analysis was aligned to the research question and the analytical construct (i.e. knowledge). I used the software ATLAS.ti to facilitate the research process.

In several rounds of coding, starting with an in-vivo approach followed by conceptual and categorical coding, several content clusters emerged. Thereby, I identified descriptive categories that reflect essential characteristics of human capital in the craft industry. They are presented in the next section.

4. Results: Human capital characteristics of the craft industry

I summarise the results along four statements. I metaphorically use the terms ‘head’ and ‘hand’ to contrast the two major knowledge types that are involved in the craft industry: rational knowledge (explicit knowledge) versus knowledge-in-practice (tacit knowledge) (see also Spender, 2005).

Hand and head are equal

Descartes advocated for an epistemological divide between knowledge and action (mind-body dualism). He argued that mind and body are distinct and separable entities. This Cartesian dualism is deeply implemented in formal schooling (Marchand, 2008; Niedderer & Townsend, 2014) and in industrially organised economic sectors (Carr & Gibson, 2016). However, “crafting often reconnects ‘mind’ and ‘body’ in the sites and processes of production, therefore potentially reconstituting labour processes in ways that ascribe agency to workers” (Carr & Gibson, 2016, p. 300). Portisch (2009, p. 490) argues that “the separation of reflection from action, of concept from practice, of cognition from embodiment, is a distinction that is not borne out in practice.” Thus, Cartesian dualism cannot be simply applied to craft activities (Marchand, 2008; Niedderer & Townsend, 2014), as it is an ongoing “dialogue between concrete practices and thinking” (Chan, 2014, p. 316) that employs “the intimate connection between hand and head” (Sennett, 2008, p. 9). Hence, the distinction of knowledge and action collapses; craft practice utilises ‘knowledge *for* and *from* action’ (Brinkmann & Tanggaard, 2010; Gherardi & Perrotta, 2014).

The hand knows more than the head

Techne is a predominant knowledge category in craft. The term was promoted by Plato, Aristotle, and others who contrast it from episteme, i.e. theoretical knowledge (Eyferth, 2010; Johansen, 2017). Techne refers to practical knowing which leads to things being produced and the knowledge about the products’ usage (Johnson, 2010). It primarily originates from experience (Lehmann, 2012). However, craft is seen as a practice that goes beyond techne. Several authors conceptualise “craft knowledge” as a synthesis of techne and phronesis (Eyferth, 2010; Petersen, 2013; Portisch, 2009; see also Nonaka & Toyama, 2007). Phronesis is practical wisdom that represents the normative dimension of “craft knowledge” which is in its entirety “the knowledge of the why, the what, the how-to, and the role of the maker and the thing made within its resident culture” (Johnson, 2010, p. 679).

The head cannot tell what the hand does

The skills involved in craft practice strongly depend on tacit knowledge (Gamble, 2014; Polanyi, 1958) which is internalised and inherent to the craft practitioner. As this knowledge is difficult or even impossible to articulate, it is mainly passed over by demonstration and imitation, i.e. learning-by-doing, trial-and-error, and training (Blundel & Smith, 2013; Wood, Rust, & Horne, 2009). Knowledge becomes “embodied through long-term practice” (Nasseri & Wilson, 2017). It is associated with experiential knowledge that remains tacit and elusive (Niedderer & Townsend, 2014) and includes “skills acquired through hands-on experience” (Firth, Stoltenberg, & Jennings, 2016), which others call “haptic knowledge” (Carr & Gibson, 2016), “epistemology of the hand” (Brinkmann & Tanggaard, 2010), or “embodied knowledge” (O’Connor, 2017). Related concepts which point at the practical dimension of applying and acquiring knowledge are discussed in literature as “procedural knowledge” (Pirttimaa, Husu, & Metsärinne, 2017), “secret knowledge” (Blundel & Smith, 2013),

“nonarticulated and hidden knowledge” (Petersen, 2013), “gandal” (Dilley, 2009), “working knowledge” (Petersen, 2013), or “experiential knowledge” (Niedderer & Townsend, 2014).

There is more than the hand and the head

A craftsperson’s knowledge is multidimensional: It includes knowledge about the body, tools/equipment, and material (Chan, 2014; Gherardi & Perrotta, 2014; Lasser, 2013). The craftsperson uses her body as the main sensory instrument (Petersen, 2013) and takes advantage of tools which extend her repertoire of interactions with the world (Marchand, 2008). She is familiar with the opportunities and constraints of the material and how it can be shaped (Carr & Gibson, 2016; Chan, 2014; Gherardi & Perrotta, 2014). However, her knowledge goes beyond pure technical skills and, thus, includes other knowledge types, such as “aesthetic knowledge” (Chan, 2014), “emotional knowledge”, “intuition” (Niedderer & Townsend, 2014), or “phronesis” (Johnson, 2010).

Metaphorically speaking, knowledge is stored both in the hands and heads of practitioners and often remains non-verbalised (Dilley, 2009; Eyferth, 2010; Patchett, 2016). As a result, knowledge in the craft industry is highly context-sensitive, local, and difficult to transfer. Knowledge is sensible to the context of its origin and application (Gherardi & Perrotta, 2014). It needs to be aligned to current circumstances by adapting its conjunctions of the past (Patchett, 2016). Moreover, it is embedded in spatial local interactions (Blundel & Smith, 2013). The tacit nature of most knowledge impedes the transfer outside of small-scale personal environments (Chang & Koo, 2017; Eyferth, 2010; Patchett, 2017).

5. Conclusion and further research

By conducting a structured review of trans-disciplinary literature, I identified key characteristics of knowledge and contributed initial insights into the nature and content of human capital in the craft industry.

Human capital is the “capacity to act” (Sveiby, 1997) that enables craftspersons to interact with the world. Knowledge enables action and is primarily acquired through action. The distinction between knowing and doing, as it has been suggested by Cartesian dualism, cannot be applied to the craft industry. The concept of “craft knowledge” bridges this divide. It can be described as a tacit “knowing-in-practice” (Gherardi & Perrotta, 2014). It embraces *techne* (practical knowing) and *phronesis* (practical wisdom), which allows for judging what is ethically good. Both are often uncodified and shared in non-linguistic ways (e.g. observation and imitation). However, human capital in the craft industry goes beyond technical skills. It includes knowledge about/of the body, tools, and materials as well as aesthetic and emotional skills that constitute a way of knowing that differs from but complements traditional rationality (Mumby & Putnam, 1992). Knowledge, here, is highly context-sensitive, locally embedded and difficult to transfer; it requires small-scale personal learning environments.

As a direct implication of this research I suggest that craft businesses as well as policy makers should provide environments that support the creation, acquisition and transmission of craft-specific knowledge.

In this vein, further research should investigate learning in the context of IC, i.e. identifying learning structures and systems that lead to craft-specific knowledge. This might help to establish a structural capital perspective on craft. Complimentarily, the external capital in the craft industry, particularly the knowledge about customers and their needs, should be studied. Furthermore, IC might provide a framework for measuring the effectiveness of educational systems (apprenticeship) in the craft industry.

This study has some limitations. Despite the fact that the search query was iteratively developed to incorporate as many relevant terms as possible, it cannot be ruled out that some keywords have been overlooked and, thus, are missing in the analysed sample. Although the results are coherent across the trans-disciplinary literature sample, they must not be seen as complete. Furthermore, the review did not account for books and non-English literature.

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