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The Competence Mapping Model: A Framework for Bridging Strategic Competency Modelling and Job Analysis

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ABSTRACT

Purpose – This paper proposes a novel conceptual framework for bridging the theoretical fields of strategic competency modelling and job analysis to close the gap between the two fields.
Aim(s) – The proposed framework seeks to combine the two research areas in a simplified and easy to apply manner that allows small and medium sized organizations to adapt the model to their needs and thereby working strategically with competence mapping.
Design/methodology/approach – This research builds on a review conducted by using the block method resulting in a total of 1.233 sources from four databases. After a selection process a total of 37 sources were identified relevant for the research. Additional 20 sources were added via keyword search and cited articles resulting in a total of 51 retrievable sources.
Findings – The study found that from a fundamental managerial approach, the key consideration lies in the fit between people and strategy. Thus, strategic decision making require clarity and strong interdependence between the overall business objectives, strategy, and the needed and available competencies of the human resources of the organization. Hence, the paper proposes a novel conceptual framework for mapping competence bridging the overall strategic objectives with the available competencies of the organization.
Limitations of the study – Further studies may research the applicability of the framework regarding the type and size of the organization. This would contribute to the usability of the model, and value added by the model. Furthermore, case studies on applying the proposed model will help clarify how the model will comply with the strategic business planning framework.
Originality/value – While current models primarily focus on either competency modelling or job analysis, this conceptual paper proposes a novel conceptual framework for competence mapping that bridges strategic competency modelling and job analysis contributing to strategic decisions on HRD and HRM.

KEY WORDS

Competence Mapping, Competencies, Competence Framework, Competency-Based Modelling, Strategic Competency Modelling

JEL Code: J24, M12, O15

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1 INTRODUCTION

For years, both scholars and practitioners have increased their focus on the company's competitive advantage (e.g., Kansal & Jain, 2019; Prahalad & Hamel, 1990; Yang, 2015) and as part of this process, a view on core competence as the root of competitiveness is developing and starting to connect the organization's core competencies to knowledge on markets and demands of costumers (e.g., Clardy, 2008; Grasser et al., 2021, p. 8; Laakso-Manninen & Viitala, 2007). With an increased focus on core competence, naturally, competence in general receives increased attention in the pursuit of reaching organizational goals to increase its value (e.g., Clardy, 2008; Eden & Ackermann, 2000; Sinha et al., 2016). Throughout literature, this has raised questions on the definitions and identification of both core competence and competence in general (Stevens, 2013; Stoof et al., 2002). Where some tend to primarily focus on the individual level of competence, others have a more macro level focus (Stevens, 2013). The distinction between micro and macro level also brings a question on the difference between job analysis and competency-based models (Naquin & Holton, 2006). The theoretical path on competence splits in two

directions within the Human Resource Development (HRD) community (Sanchez & Levine, 2009). One going in the direction of identifying specific working tasks to fill an individual function of the organization, and the other moving towards the overall strategic aim of the organization, linking core competence and organizational competence to the overall strategic objectives. While the former has a detailed and mathematical approach rooted in the job analysis theory (e.g., Ali et al., 2021; Russo, 2016) the latter is strategically based (e.g., Buller & McEvoy, 2012; Clardy, 2008; Kansal & Singhal, 2018) and can be connected to the schools of strategic management with a strong focus on the resource based view (RBV). The split path has some connecting strings, highlighting the importance of aligning the workforce with the business objectives and strategy (Buller & McEvoy, 2012; Díaz-Fernández et al., 2014; Leme Fleury et al., 2005), but also leaves the field with a conceptual framework gap on making this connection (Sanchez & Levine, 2009; Stevens, 2013; Stoof et al., 2002).

This conceptual paper aims to link the overall objectives of the organization, the core competencies, and the competencies in general by bridging the fields of strategic competency modelling and job analysis. On this basis, a conceptual model framework for mapping competence that combines knowledge on markets, customer demands and organizational strategic objectives with core competencies and competencies in general will be proposed.

The proposed framework bridges the gap between the individual level details and the organizational level strategic perspectives by incorporating individual competency measurement from the job analysis field into the strategic competency modelling framework. This results in a competence mapping model heavily focusing on strategic alignment with the overall organizational objectives throughout the organization.

By integrating knowledge from both competence-based modelling (e.g., Buller & McEvoy, 2012; Clardy, 2008; Kansal & Singhal, 2018; Vaz et al., 2010) and job analysis (Ali et al., 2021; e.g., De Coi et al., 2007; Russo, 2016) with the purpose of enabling the organization to make strategic HRD decisions aligned with the overall objectives (e.g., Buller & McEvoy, 2012; Díaz-Fernández et al., 2014; Eden & Ackermann, 2000; Leme Fleury et al., 2005), the proposed framework can form the basis for decision making on organizational structure, recruitment, training and development, or even mergers and acquisitions.

2 METHOD

To comprehensively address the field of competence mapping, a thorough review of literature was conducted using multiple approaches. First, the background for the search question was set building the foundation for a block search structure of the search word [(Competence Management OR competency mapping) AND (Framework OR Modelling OR Framework modelling)]. Each word combination was then tested systematically to find the search word combination with the most optimal search result (the aim was 150-600 results per database). The broad block searches were conducted using the electronic databases Academic Search Premier, Business Source Complete, Management & Organization Studies, and SAGE Open. In all four of these databases the search word was used. Search results were also restricted by type, returning only peer-reviews or scholarly sources; and by language, restricted to written in English.

From this broader search, Academic Search Premier returned 161 results, Business Source Complete returned 248 results, Management & Organization Studies returned 587 results, and SAGE Open returned 237 results, providing a return on 1,233 results in total from all four databases. To narrow the potentially relevant sources, a review of titles and abstracts was conducted that involved one or more of the following inclusion criteria: Competence mapping in the organization or on functional level; competence mapping linked to the strategic level of the organization, and the overall objective of the organization; competence gap analysis, and modelling of the gap analysis; identification of core competencies, and competencies as strategic advantages to the organization; and conceptual or review articles focused on defining competence, core competence or definitional issues related to competency modelling and frameworking. Exclusion criteria: Competence mapping, modelling or identification that was unrelated to organizational settings (e.g., competence identification and mapping of educational program curricula or similarly).

37 sources with relevance to the research were identified from the first screening. To supplement the search with additional relevant articles, keyword search was conducted, and relevant articles cited was

added resulting in 20 additional sources. From the total of 57 sources, 6 sources were non retrievable. On the remaining 51 sources, a full text reading was conducted to further narrow the relevance and usability of the sources in relation to the research. Each source was rated with 1-3 stars, 3 stars being the most relevant and 1 star being least relevant to the research. A research note on each source was conducted, highlighting the objective of the source, additional notes and comments on the source, source conclusions, and reflections on the source in relation to the research of this conceptual paper.

3 REVIEWING THE FUNDAMENTAL BACKGROUND OF COMPETENCE MAPPING

Before addressing a framework for competence mapping, it is essential to establish a fundamental approach to what competence is. Through the years, the terms competence and competency have been subject to extensive scholarly investigation, providing many varying definitions and suggestions on how to understand the terms (For a list of definitions of the term competence, competences, competencies and competency see below in table 1). Le Deist and Winterton (2005) state that 'competence' generally refers to functional areas and 'competency' to behavioural areas, but they also conclude that the usage is inconsistent. This is supported by Sanghi (2016, pp. 10–11), who distinguishes between the skill and standard of the performance and the behaviour by which the skill is achieved. Through a conceptual analysis of the term competence, Taatila (2004) finds that competence refers to subjects' comparative qualities to reach the defined goal of the organization. This perspective is supported by Grasser et al. (2021, p. xvii) who state that "*individual competences are defined as a combination of resources that make a person at work capable of carrying out an activity in a specific context*". A variation of the goal focus in the definition of the term is provided by Sinha et al. (2016, p. 87) who defines competencies as the "*inner tools for motivating employees, directing systems and processes and guiding the business towards common goals that allow the organizations to increase its value*". Throughout the literature, many definitions focus on a combination of knowledge, skills, and attitudes needed to perform the job (Stoof et al., 2002). The definition was further developed by Kansal and Singhal (2018, p. 288) who state that "*competence is an underlying characteristic of a person and comprises the entire body for knowledge, abilities and personal traits developed through learning*". Stevens (2013) brings forward that the definitions differ by whether competency should represent some combination of knowledge, skills, abilities and other characteristics (KSAOs) or if the term is more accurately thought of as a behavioural measure or capability. This is supported by Bellini et al. (2021, p. 604) who state that the term competence "*encompasses multiple facets, such as knowledge, skills, abilities, behaviours and personal characteristics that allow to successfully perform critical work tasks*". While the definitions of both Stevens (2013) and Bellini et al. (2021, p. 604) are variations of the KSAOs, Stevens' (2013) definition refers to the term 'competency' while the definition of Bellini et al. (2021, p. 604) refers to the term 'competence'. Recalling the statement by Le Deist and Winterton (2005), it is the term 'competency' that refers to behavioural areas, however, the definition offered by Bellini et al. (2021, p. 604) on the term 'competence' also includes behavioural aspects. Loufrani-Fedida and Aldebert (2021) also defines the term competence within the KSA (knowledge, skills and attitudes) framework, specifying that competence is the ability to mobilize and combine resources to undertake an activity or action, not just as an individual but also collectively or as a company. Defining competence as the mobilization of KSAs or KSAOs or the ability to utilize the KSAs or KSAOs on either individual, group or organizational level to perform the tasks seem to be a widely used definition of both competence and competency (e.g., De Coi et al., 2007; Ennis, 2008; Murtaza, 2015; Russo, 2016).

Table 1. Definitions of the terms competence, competences, competencies and competency

Term	Cite	Definition
Competence	Bellini et al. (2021, p. 604)	**Competence** encompasses multiple facets, such as knowledge, skills, abilities, behaviours and personal characteristics that allow to successfully perform critical work tasks.
	Foss and Knudsen (1996, p. 1)	**Competence** is to be understood as a typical idiosyncratic knowledge capital that allows its holder to perform activities – in particular, to solve problems – in certain ways, and typically do this more efficiently than others.

	Kansal and Singhal (2018, p. 288)	**Competence** is an underlying characteristic of a person and comprises the entire body for knowledge, abilities and personal traits developed through learning.
	Leme Fleury et al. (2005, p. 1642)	**Competence** is not merely knowledge or capability but knowledge and capability in action.
	Loufrani-Fedida and Aldebert (2021, p. 508)	**Competence** is the ability of an individual, a collective or a company to mobilize and combine resources (knowledge, skills and attitudes) to undertake an activity or action.
	Sanghi (2016, p. 10)	**Competence** means a skill and the standard of performance reached.
	Taatila (2004, p. 16)	**Competence** refers to subjects´comparative qualities to reach the defined goal.
Competences	Grasser et al. (2021, p. xvii)	**Individual competences** are defined as a combination of resources that make a person at work capable of carrying out an activity in a specific context.
	Sanghi (2016, pp. 10–11)	**Competence** refers to the range of skills that are satisfactorily performed.
Competency	Ennis (2008, p. 4)	**Competency** is the capability of applying or using knowledge, skills, abilities, behaviours, and personal characteristics to successfully perform critical work tasks, specific functions, or operate in a given role or position.
	Sanghi (2016, p. 8)	**Competency** refers to the inputs, or underlying attributes, required of a person to achieve competent performance.
Competencies	Diaz-Fernández et al. (2014, p. 206)	**Competencies** define and specify the knowledge and skills required to efficiently perform the job.
	Sanghi (2016, p. 11)	**Competencies** refers to the behavior adopted in competent performance.
	Sinha et al. (2016, p. 87)	**Competencies** are the inner tools for motivating employees, directing systems and processes and guiding the business towards common goals that allow the organizations to increase its value.

source: Authors work

For this research, just establishing a fundamental understanding of the terms competence and competency is not sufficient. The terms job analysis and competency modelling both appear as fundamental terms in the literature on the field (e.g., Sanchez & Levine, 2009; Stevens, 2013) and should therefore undergo further investigation as well (for a list of definitions on job analysis see below in table 2, and for a list of definitions on competency modelling see below in table 3). While the main focus of job analysis tends to be on describing work activities as they currently exist, competency modelling is more strategic, focusing on maximizing performance in roles aligned with the strategic plan of the organization (Sanchez & Levine, 2009; Stevens, 2013). This understanding is supported by Bellini et al. (2021) who states that competence models help align the behaviour of the employees with the strategic goals of the organization. It appears, however, that it is necessary to distinguish between competency modelling and competency models since the strategic aspect is not always present in the definitions of competency models. An example of this is the definition given by Ennis (2008, p. 5), who defines competency models as "a descriptive tool that identifies the competencies needed to operate in a specific role within a(n) job, occupation, organization, or industry". This perspective is supported by Kansal and Jain (2019) who in their definition also focus on identifying the competences needed to operate a specific role or function. Where the definitions of Stevens (2013) and Bellini et al. (2021) are on the macro level, the definitions of Ennis (2008, p. 5) and Kansal and Jain (2019) are on the micro level, focusing on the needed individual level competences or functional level competences. However, reviewing the definition provided by Grasser et al. (2021, p. 3), the difference on the macro vs. micro level approach does not lie in whether the definition uses "modelling" or "models" but in whether it uses "competence/competences" or "competency/competencies", the former referring to a micro level focus and the latter referring to a macro level focus. Although they support the strategic focus of competency models, Rodriguez et al. (2002, p. 310) open up the possibility that this is not always the case by using the word 'often' when stating that one of the strengths of competency models is "that they are often linked to the business goals and strategies of the organization". This implies that the competencies are not always linked to the overall objective and strategies of the organization. Naquin and Holton (2006, p. 146) also distinguish between job analysis and competency-based models, stating that job analysis "identifies the specific tasks that are required" while the competency-based model identifies the KSAOs needed to effectively perform the job or role, assisting the organization in achieving its strategic goals. Even though this definition of competency models has a strategic focus, it also focuses heavily on the individual level or functional level

of competence mapping. Based on the above literature research, job analysis refers to the analysis of a specific job or function on individual level, whilst competency modelling refers to mapping competencies and competences from organizational level to individual level, linking competence to the strategies and overall objective of the organization. Consequently, job analysis cannot be separated entirely from competency modelling since mapping competence on the individual level will require some job analysis to add detail (Sanchez & Levine, 2009; Stevens, 2013).

Table 2. Descriptions of the term job analysis

Source	Description
Le Deist and Winterton (2005, p. 32)	Competency assessment [Le Deist and Winterton (2005) distinguish between competency modelling and competency assessment, where competency assessment is used to analyse the competencies required for performing the individual job. The term competency assessment is therefore equivalent to the term **job analysis** used in this paper] is used to determine the extent to which individuals have these critical competencies.
Naquin and Holton (2006, p. 146)	**Job analysis** identifies the specific tasks that are required.
Sanchez & Levine (2009, p. 54)	The purpose of **job analysis** is to better understand and measure work assignments.
Sanghi (2016, p. 5)	**Job analysis** focuses on understanding tasks and the skills needed to perform each task.
Stevens (2013, pp. 93–94)	**Job analysis** tends to focus on describing work activities as they currently exist, establishing typical performance for those activities, often without addressing issues of alignment within the organization.

source: Authors work

Table 3. Descriptions of the term competency modelling

Source	Description
Ennis (2008, p. 5)	A **competency model** is a descriptive tool that identifies the competencies needed to operate in a specific role within a(n) job, occupation, organization, or industry.
Kansal and Jain (2019, p. 22)	**Competency model** is a descriptive tool that identifies the competencies/skills needed to operate a specific role within a job, occupation or organization
Kansal and Singhal (2018, p. 289)	The **competency model** is an indispensable tool to align all processes of the HR towards enhancing organizational effectiveness. A competency model identifies the knowledge, skills and attitudes needed for people within an organization.
Le Deist and Winterton (2005, p. 32)	**Competency modelling** is used to identify the critical success factors driving performance in organizations.
Naquin and Holton (2006, p. 145)	A **competency-based model** can be a descriptive tool for identifying the knowledge, skills, and behaviours needed to effectively perform a role in an organization in order to assist this organization in achieving strategic goals.
Sanchez & Levine (2009, p. 54)	The purpose of Competency modelling (CM) is to influence how such assignments are performed in a manner aligned with the organization's strategy.
Sanghi (2016, p. 5)	**Competency modelling** focuses on personal characteristics needed for success in a broader job role
Stevens (2013, p. 94)	**Competency modelling** focuses heavily on future roles that align with a strategic plan and defining maximum performance in those roles through worker attributes.

source: Authors work

4 Bridging Job Analysis and Strategic Competency Modelling

As seen in the above review, there is a heavy, but not exclusive, focus on the individual level of mapping competence. Naturally, the individual level is an important part of mapping competence, however, this paper suggests that the identified competence need on the individual level should be linked to both the overall objective of the organization, the knowledge on the market and costumer demands. The proposed link to the overall objective of the organization is supported by Vaz et al. (2010) who in their model link intellectual capital, business process and strategic planning to both organizational competences and individual competences. Leme Fleury et al. (2005) suggest that the interplay between organizational

competencies and the competitive strategy of the organization is determining the organization's competitiveness. In their work they suggest that both the core competencies and organizational competencies consist of a combination of resources and of the portfolio of individual competencies making the collective competencies greater than the sum of the individual competencies and thereby suggesting that the individual competencies must be aligned with strategy (Leme Fleury et al., 2005). This strong linkage between organizational strategy and the employees' individual competencies is also supported by Diaz-Fernández et al. (2014) who suggests that "organizational strategies will determine the ideal profile of competencies to be developed by individuals, and that employees' competencies will vary in different strategic contexts." The connection between different levels of competence going from the individual level to the organizational level and the importance of linking competences on all levels to the overall strategic goals of the organization is also emphasized by Loufrani-Fedida and Aldebert (2021), who find that this connection is crucial to reach the overall objective of the organization. Furthermore, Laakso-Manninen and Viitala (2007, p. 27) state that focus should be on competencies required by a company's strategy, emphasizing the need for a strong link between the competencies and the overall objectives of the organization. This is supported by Loufrani-Fedida and Aldebert (2021) who argues that competency management plays a critical role in the alignment of the workforce with the firm's organizational and strategy goals. Leme Fleury et al. (2005) suggests that the sustainable competitive advantage of the organization will be associated with the management of organizational competencies and that the organizational competencies thereby will be vital in repositioning the competitive strategies of the organization. The 'Line of Sight' model proposed by Buller and McEvoy (2012) shows how HRM practices contribute to both achieve and sustain superior performance and thereby link competence mapping as part of the HRM practices to a strategic market and costumer perspective. This role of HRM is also supported by Leme Fleury et al. (2005) who state that in order to attract, maintain and develop the competencies required to achieve the organizational strategic objectives, HRM should play an important role in the development of the strategy. This is supported by Clardy (2008) who states that superior market performance is linked to the sustained competitive advantage of the organization. In addition, Clardy (2008) and Leme Fleury et al. (2005) link the sustained competitive advantage to the organization's core competencies. This linkage is interesting since it too brings both a strategic, market and costumer perspective to the competence modelling framework. Having linked competence mapping to both organizational strategy and market perspectives, this paper suggests that the overall strategic objective of the organization should be the foundation for competence mapping. Further, it is suggested that the overall strategic objective is formed in the crossing fields of market knowledge, costumer demands and the vision, mission, and values of the organization.

4.1 Defining the Core Competencies of the Organization

In the preceding section, we saw that both Clardy (2008) and Leme Fleury et al. (2005) connect the overall objective and the core competencies of the organization. Bringing the core competencies to the equation raises the question on both how to define the core competencies and when having settled on a definition, how to identify the core competencies of the organization. If one should look at a theoretical foundation for understanding the concept of the corporation's core competence, one could look in the direction of Prahalad and Hamel (1990). In their work, they describe the diversified corporation as a tree with the core competencies being the roots providing nourishment, sustenance, and stability. In their definition, they focus on the collective learning in the organization, coordination, and integration, i.e. the interaction and sharing and accumulation of knowledge, skills and abilities amongst the people and teams of the organization. Foss and Knudsen (1996, p. 61) continue in this direction stating that "*it is the accumulated organizational and social capital which makes coordination and integration possible*". In their perspective, core competence is both organizational- and social capital [linking back to the collective learning mentioned by Prahalad and Hamel (1990)] and serves as foundation for the competitive advantage. Leme Fleury et al. (2005) suggests a definition of core competence as being the activities of the organization which are "*key for the firm's survival and are central for its strategy*". In addition, they propose that assuming the core functions of an organization is considered being operations, product development

and sales and marketing, one of these core functions should be considered core competence and the remaining two supportive competencies (Leme Fleury et al., 2005). This perspective is consistent with the definition given by Teece et al. (1997) who define the core competences as those competences that define a firm's fundamental business. Laakso-Manninen and Viitala (2007, p. 34) agree on core competence being of outmost importance to the corporation by stating that "*at any level, core competencies are the most critical and most distinctive resources a company possesses*". Yang (2015) states that the company's ability to develop core competencies serves as the foundation for competitiveness. This is supported by Clardy (2008) who states that "*core competencies are organizational routines and capabilities that generate sustained superior organizational performance*". Teece et al. (1997) also link the core competences to the competitiveness of the organization. Again, the core competence is linked to the development of innovative core products as suggested by Prahalad and Hamel (1990). Laakso-Manninen and Viitala (2007, p. 30) state that the definition of core competence should be based on knowledge of customers and markets and provides a definition where the company's core competencies "*relate to the achievement of its vision through the value-added it intends to produce in the future*". In this definition, there is a strong connection between the core competencies of the company and the marked demands supporting the proposed foundation for competence mapping from the preceding section. This connection is also seen in the test proposed by Prahalad and Hamel (1990) that can be applied to identify core competencies. In the test, Prahalad and Hamel (1990) suggest that access to a wide variety of markets, significant contribution to the perceived costumer benefits and difficulty on imitation by competitors helps identify the core competencies. This market perspective on identifying the core competencies is supported by Laakso-Manninen and Viitala (2007, p. 32) who suggest four questions identifying what the customers are purchasing, why the customer chose the company, what is unique and valuable and what the customer is paying for. In contrast to the customer focus of Laakso-Manninen and Viitala (2007, p. 32) Clardy (2008) suggest focusing more directly on the competitive advantage of the organization with his four diagnostic questions for identifying core competencies and their specific nature. Based on the above review, core competence tends to have a strong connection to the organization's strategic advantages in the market and can be linked to the core products/services of the organization being the collective learning, interaction, knowledge, and integration of the organization including both organizational- and social capital of the organization. In conclusion, it is of outmost importance to understand the market, the costumers and the organizational- and social capital of the organization when identifying the core competencies.

5 A Proposed Conceptual Framework for Mapping Competence

Concluding that strategic competence mapping frameworks should have a link from the overall strategic objective of the organization to the functional level in order to deliver and fulfil market demands (e.g., Buller & McEvoy, 2012; Clardy, 2008; Eden & Ackermann, 2000; Grasser et al., 2021), this paper proposes a conceptual framework for mapping competence that starts by identifying the overall objective of the organization and thereby taking a strategic top-down approach. This proposal is in line with the competency model provided by Kansal and Singhal (2018) which suggests starting by analysing organizational and individual goals. It is also proposed that the identification of the overall objective should be rooted in knowledge of the market, costumer demands and the direction of the organization (vision, mission, values etc.). Instead of steering directly to identifying the actual competences on functional level, it is proposed to identify the competence need of the organization before mapping the current actual competences of the organization (Kansal & Singhal, 2018; Russo, 2017). The reason behind this suggestion is routed in the strategic top-down approach, moreover it is not until the competences needed to reach the overall objective have been identified that it is known to the organization what current, actual competences need to be mapped. Using this approach, the identified competence need becomes a benchmark for the actual competencies of the organization. Furthermore, this approach allows the competence mapping of the organization to play a significant role in structuring the organization strategically to support the overall objective. After mapping the competence need it is suggested to map the current actual competences covering the need using a bottom-up approach. When both the competence need of the organization and the actual competences of the organization have been mapped, this paper

proposes to compare the two in a gap analysis (e.g., De Coi et al., 2007; Ranade et al., 2010; Russo, 2016, 2017). The gap analysis will then serve as the foundation for strategic decision making on how to close the competence gap and thereby enable the organization to better reach the overall objective. Based on this, it is proposed that the gap analysis generates a need for change in the organization that is of strategic interest whether it being through mergers and acquisitions, recruitment or internal training and development (Russo, 2017). Once the need for change has been identified and an action plan to close the gap has been conducted and executed, it is suggested that the process starts all over to constantly ensure that the organization is on top of its game. This perspective is supported by Russo (2016, 2017) who states that the competence need may change over time. To illustrate the described proposed framework the below figure 1 has been conducted.

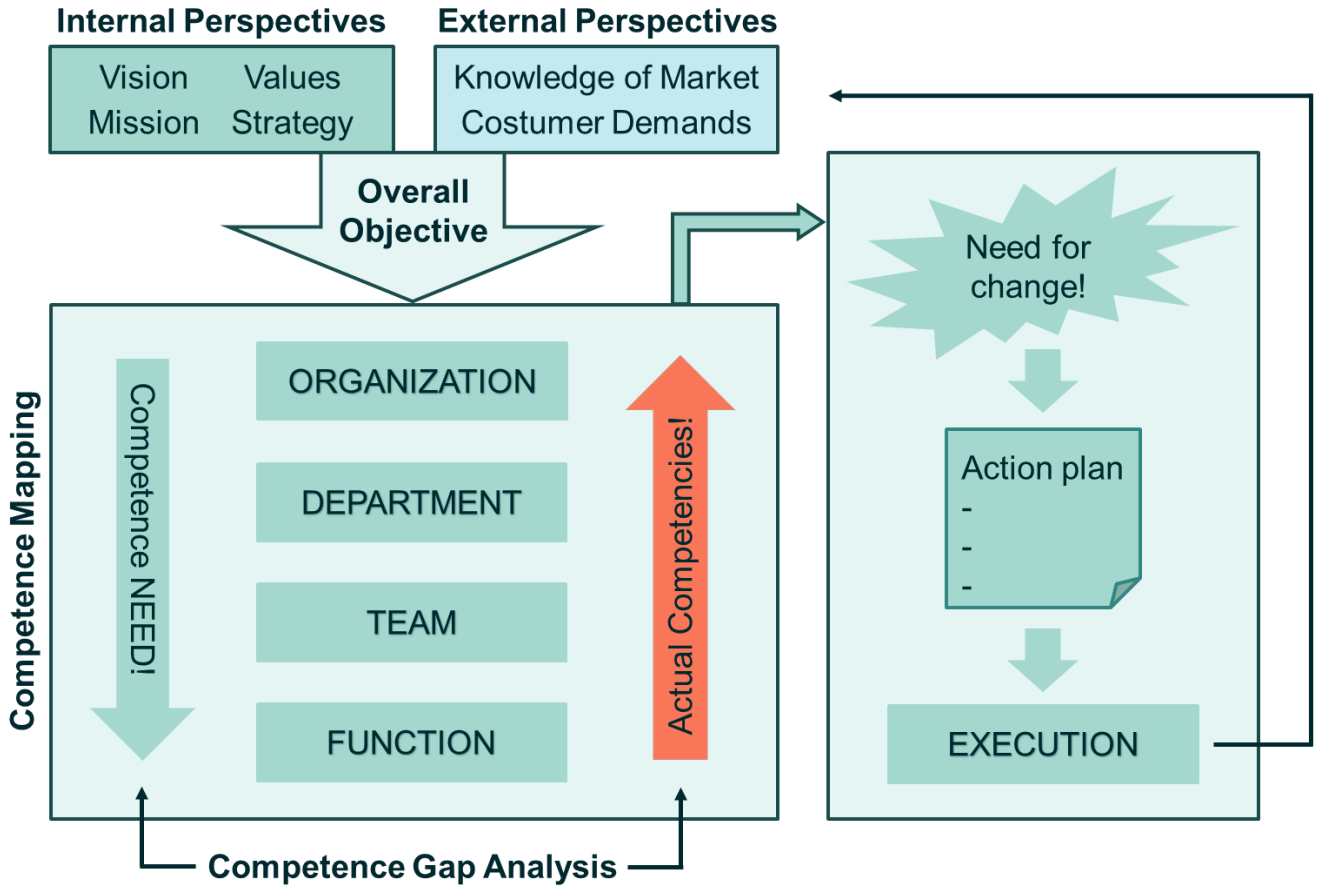

Fig. 1. The Competence Mapping Model
source: Authors work

As suggested in figure 1, the framework suggests that all competence mapping is routed in the overall objective of the organization and that the identified competence gaps are used strategically in changing the organization to better reach the overall objective. Prior to identifying the competence need and the current actual competences, this paper proposes that including a competence proficiency level scheme with both numeric levelling and a description of each level will enable the user to determine the level of each identified competence (Ali et al., 2021; Stevens, 2013). This is supported by Russo (2016, 2017), who suggest a proficiency level scheme going from 0 to 5 where 0 is none; 1 is where there are limited or no use of competency required for the job; 2 is the basic proficiency level with basic understanding or knowledge needed for the job; 3 is the proficient level with detailed knowledge, understanding, and application of the competency and thereby an ability to handle non-routine problems and situations; 4 is the advanced proficiency level with highly developed knowledge, understanding, and application of the competency required to be successful in the job and organization (total mastery); and 5 is the expert level with specialist/authority level knowledge, understanding, and application of the competency required to

be successful in the job. Russo (2016, 2017) suggests that the expert level holder is recognized by others as an expert in the competency and is sought out by others throughout the organization. A similar scheme with proficiency levels from 0 to 5 is suggested by Laakso-Manninen and Viitala (2007, p. 55). In their suggestion 0 is clueless; 1 is informed; 2 is the novice who knows the basics; 3 is the professional who knows how to make use of knowledge in tasks; 4 is categorized as an expert with deep expertise, capable of assisting professionals; and 5 is categorized as the best in field expert with national recognition. While the numeric value serves analytical purposes, the key in both examples lie in the descriptions of each proficiency level since it is the descriptions that enables the user to determine on which level to place the identified competence. This paper proposes that it is the task of the organization to agree on the number of levels, the level categorization, and the level descriptions. This methodology was similarly used by Vaz et al. (Vaz et al., 2010) in their competence mapping process and has the advantage of strengthening the organizational commitment throughout the execution phase.

Not yet mentioned are the reflections on how to identify the needed and current actual competences across the organization. Vaz et al. (2010) suggests a process of several steps using both workshops and interviews between the Human Resource Department and managers to identify the needed competences. A similar approach is suggested by Kansal and Singhal (2018) where they suggest involving professionals/experts within the field to identify the competences needed. As proposed above, the next step after having identified the competence need is to identify the current actual competences. This paper suggests using both manager and self-assessment for each employee to be evaluated on the identified needed competences (e.g., Camuffo & Comacchio, 2005; Russo, 2017). A similar approach is suggested by Ranade et al. (2010) on using a self-assessment form. Sanghi (2016, pp. 85–89) takes it even further and suggest the usage of Bottoms-in-seats Assessment (this is described as a curriculum-based assessment developed by position), Self-assessment and 360-degree Assessment as three methods for identifying the actual current competences of the organization. Once the self-assessment and manager assessment has been conducted this paper suggest that the manager and the employee have a dialogue based on the conducted and shared assessments to settle on a final assessment of the employee's current actual competences. The next step is to compare the needed and current actual competences by conducting a gap analysis (e.g., De Coi et al., 2007; Ranade et al., 2010; Russo, 2016, 2017). The purpose of the gap analysis is to identify competence gaps on all levels of the organization enabling the organization to take strategic action on closing the gaps. Such strategic actions could be anything from mergers and acquisitions through strategic alliances to recruitment or training and development of current employees (Russo, 2017). Another topic not yet addressed is how to accumulate the identified actual competences on functional level to get an overview of the current competences on team, department, and organizational level. This paper proposes that the accumulation of competences is done by adding the identified competence levels for each identified competence individually and then dividing with the number of times the competence in question appears in the unit/team/department to get the average/accumulated competence level for the competence in question for the unit/team/department. Let A_i represent the identified competence level, and n be the number of times the identified competence appears within the unit or department in question, then the accumulated competence level of the unit or department in question, A, can be calculated as follows:

$$A = \frac{1}{n} \cdot \sum_{i=1}^{n} A_i$$

Where:
A_i= the identified competence level
n= the number of times A_i appears

By using the proposed formular it is possible to generate a radar diagram of the competence gaps for all levels of the organization and thereby to create a visual overview of the gaps that need attention strategically. The below illustration in figure 2 is an example of a radar diagram showing a gap analysis with negative gaps on competence 2 and 4.

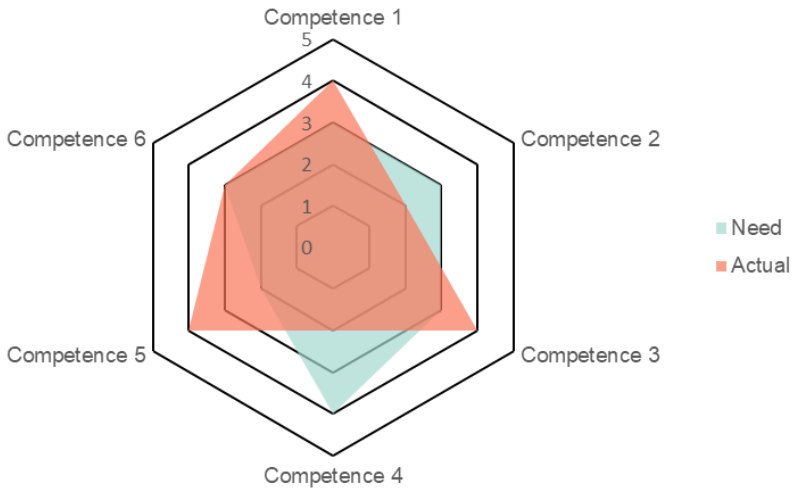

Fig. 2. Example of gap analysis visualized in a radar diagram
source: Authors work

6 Discussion and Implications

6.1 Theoretical implication

The proposed Competence Mapping Model is a theoretical contribution to the field of existing models and frameworks on strategic HRD, job analysis, competence modelling, and core competence identification. The suggested model seeks to bridge the fields of competency modelling and job analysis by combining the overall strategic perspectives with the perspectives of the individual job analysis in a framework, linking all levels of the organization with a shared focus on the overall objective. Based on this, it is the aim of the suggested framework to provide an overview for strategic decision making on organizational structure and competence management. Furthermore, the conceptual framework for competence mapping proposed in this study fills part of the conceptual framework gap by connecting the individual level competence and the overall business objectives, strategy, knowledge on markets and costumer demands (e.g., Sanchez & Levine, 2009; Stevens, 2013; Stoof et al., 2002).

6.2 Practical implication

Even though there are several comprehensive competence mapping models in the field (e.g., Ali et al., 2021; Bellini et al., 2021; Buller & McEvoy, 2012; Kansal & Jain, 2019; Russo, 2016, 2017), the proposed model seeks to combine the two research areas (competency modelling and job analysis) in a simplified and easy to apply manner that allows small and medium sized organizations to adapt the model to their needs and thereby working strategically with competence mapping.

6.3 Future research directions

Further studies may research the applicability of the framework regarding the type and size of the organization. This would contribute to the usability of the model, and value added by the model. Furthermore, case studies on applying the proposed model will help clarify how the model will comply with the strategic business planning framework. These are all questions of interest and the answers to these questions will help further develop the strategic HRD framework.

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