Nijmegen School of Management
Department of Economics and Business Economics
Master's Thesis Economics (MAN-MTHEC)

Structuring Control: Management Control Systems in Non-Hierarchical Organizational Structures

By Jasper van Dijk (S1022016)

Nijmegen, 29 June 2024

Program: Master's Program in Economics
Specialisation: Accounting & Control
Supervisor: Dr. M. Visser (Max)

Radboud Universiteit

Abstract

Non-hierarchical organizational structures (NHOS) are emergent in practice in response to the increased need for flexibility and adaptability. However, there has been few attention in the literature for contingent design and implementation of management control systems (MCS) in NHOS, despite many calls for interdisciplinary research on these topics (Martinez & Himick, 2023; Lee & Edmondson, 2017; Otley, 2016; Malmi & Brown, 2008; Merchant & Otley, 2006; Chenhall, 2003). The goal of this research is to contribute to the development of literature on MCS in NHOS by reviewing literature about the influence of key elements inherent in NHOS on the contingent design and implementation of MCS, operationalized by the levers of control framework (Simons, 1994).

Team size, task design, coordination, decision making, and resources are characteristics of NHOS found to influence the contingent use of LoC in organizations with self-managing teams, holacracy and temporary organizations. This structured literature review points out similarities and differences with regards to contingent design of MCS in each of the three types of NHOS. Thereby, it validates the arguments that there is no one best way of organizing (Burnes, 1996).

This research extends the levers of control framework by Simons (1994) to include informal control mechanisms (Simons, 1995). Furthermore, it proves possible to apply the levers of control framework to operational levels, responding to the critique of Ferreira & Otley (2009).

In the tabulations of literature on NHOS and MCS, several cells remain empty. This provides opportunities for future research. Furthermore, demarcation of the categories, including Management, Business, and Business Finance was necessary, given time and resource constraints. Future research can extend this SLR by including literature in other categories.

Keywords: Management control, levers of control, organizational structure, non-hierarchical, structured literature review

Table of Contents

1 Introduction

1.1 Problem formulation

Organizations are confronted with an increasing speed of change in today's business world. It is a challenge for organizations to swiftly and accurately respond to changing circumstances and to build a sustainable competitive advantage in order to maintain a separate and meaningful existence in their environment (i.e. meaningful survival) (De Wit, 2019; Achterbergh & Vriens, 2019, p40).

In response to the increased need for flexibility and adaptability, organizations attempt to change their organizational structure (De Sitter, Den Hertog & Dankbaar, 1997; Nijholt & Benders, 2007; Benders, Missiaen, & Hootegem, 2013; Renkema, Bondarouk & Bos-Nehles, 2018) and new types of organizational structures emerged (De Sitter, 1994; Kuipers, Van Amelsvoort & Kramer, 2020; Minnaar & Van Vondelen, 2022; Land & King, 2014; De Geus, 2014). The organizational structure is the way in which tasks are defined and coupled in a network of tasks (De Sitter, 1994; Achterbergh & Vriens, 2010; 2019). Large traditional organizations in relatively stable contexts often have a hierarchical structure, whereas smaller and younger organizations in relatively uncertain and complex environments often have a flatter and more decentralized organizational structure (Burns & Stalker, 1961; Burton, Obel & Håkonsson, 2017).

The notion that specific types of organizational structures fit well in certain contexts, is well-established in contingency research (Burton et al., 2017; Chenhall, 2003). Contingency theory is centered around the belief that there is no single best way of organizing, but effective choice of elements depends on the fit between them (Burnes, 1996; Chapman, 1997; Chenhall, 2003; Merchant & Otley, 2006).

The organizational structure is considered an important contingency factor for the design and implementation of management control systems (MCS) (Chenhall, 2003; Merchant & Otley, 2006; Otley, 2016). Organizations utilize MCS to assure organizational goal accomplishment (Anthony, 1965; Langfield-Smith, 1997).

In practice, an increasing number of organizations has tended to change their organizational structure to non-hierarchical types (Nijholt & Benders, 2007; Benders, Missiaen, & Hootegem,

2013; Renkema et al., 2018; Minnaar & Van Vondelen, 2022; Schell & Bischof, 2022). In that sense, non-hierarchical organizational structures (NHOS) are emergent in organizational practice. However, changes in the organizational structure are often pursued without consideration of MCS (Minnaar & Van Vondelen, 2022; Kuipers et al., 2020; Chenhall, 2003). Also in the literature, there has been few attention for the relation between NHOS and MCS, despite many calls for interdisciplinary research on these topics (Martinez & Himick, 2023; Lee & Edmondson, 2017; Otley, 2016; Malmi & Brown, 2008; Merchant & Otley, 2006; Chenhall, 2003). Both in practice and in the literature, it is often neglected that "*the design of [a management control] system and the design of an organizational structure are really inseparable and interdependent*" (Otely, 2016, p46).

1.2 Research goal

Contemporary organizational practice in which NHOS are emerging in the pursuit of meaningful survival, however often disregarding the design and implementation of MCS both in practice and in the literature, provides impetus for advancing contingency research on NHOS and MCS (Otley, 2016; Malmi & Brown, 2008; Merchant & Otley, 2006; Chenhall, 2003; Dijksma & Welten, 1998).

This thesis is a literature review (Jackson, 1980; Cooper, 1988) with the aim of contributing to the development of literature on MCS in NHOS by reviewing literature about the influence of key elements inherent in NHOS on the contingent design and implementation of MCS. More specifically, the goal of this research is to identify key elements inherent in NHOS which influence the requirements for contingent design and implementation of MCS in order to contribute to the literature and research on MCS in NHOS.

1.3 Research question

The research question that fits the goal of this research is *How do key elements inherent in non-hierarchical organizational structures influence the requirements for contingent design and implementation of management control systems?*

1.4 Relevance

As argued in the problem statement, the importance of contingency between organizational structures and MCS is well-established (Chenhall, 2003; Merchant & Otley, 2006; Otley, 2016). However, literature on MCS in NHOS is under-developed (Martinez & Himick, 2023; Lee & Edmondson, 2017; Otley, 2016; Malmi & Brown, 2008; Merchant & Otley, 2006; Chenhall, 2003). This thesis is academically relevant by responding to repeated calls for developing contingency research on MCS and NHOS. Furthermore, this research extends the levers of control framework by Simons (1994) to include informal control mechanisms and it addresses the critique by Ferreira and Otley (2009) by applying the levers of control framework to operational levels.

Drawing attention to the contingency between NHOS and MCS is also relevant to practitioners involved in (re)design of organizational structures, to understand the importance of a contingent MCS in order to enhance organizational performance.

1.5 Outline

This thesis is structured as follows. In section 2, the theoretical background of key concepts is explained. In section 3, the methodology of this research is described, after which the analysis is performed in section 4. The conclusion and discussion is presented in section 5.

2 Theoretical background

As explained in the previous chapter, the goal of this research is to identify key elements inherent in NHOS which influence the requirements for contingent design and implementation of MCS. The first step in achieving this goal is defining and explaining the key concepts and thereby identifying key elements of NHOS. In this chapter, the theoretical background of meaningful survival and contingency theory are explained, after which both contingency factors central to this research, NHOS and MCS, are defined and explained.

2.1 Meaningful survival

Organizations can have all sorts of objectives and goals. The overarching goal of each organization can be formulated from a systems theory perspective as aiming for meaningful survival (Achterbergh & Vriens, 2019). It entails providing a contribution to the environment that is valued, which can be operationalized in a narrow sense as providing shareholder value or in a broader sense as providing stakeholder value or *"contributing to creating conditions for societal members to live a fulfilled life*" (Achterbergh & Vriens, 2019, p.41). Organizations can formulate and reformulate more specific goals that operationalize meaningful survival. If goals are met or no longer seen as providing a valuable contribution to the environment, goals should be reformulated, or organizations may decide to stop existence (Achterbergh & Vriens, 2010; Moorkamp, 2018).

2.2 Contingency theory

Organizations can employ an infinite amount of configurations in pursuit of meaningful survival. Organizational configurations with high internal and external fit, i.e. with contingent elements, are considered most effective (Burnes, 1996). Contingency theory has been developing since Fiedler (1964) found that different leadership styles could be equally effective in different organizations and that similar leadership styles could differ in effectiveness between organizations. The conclusion of his research was that the effectiveness of leadership is contingent upon the fit with other factors in the specific context of the organization.

In the decades that followed, contingency theory has expanded to include more factors, such as environment, strategy, technology, culture, structure, and MCS (Chapman, 1997; Chenhall, 2003; Merchant & Otley, 2006). Contingency research on each of these factors "*Seeks to discover when specific techniques might be most appropriate for particular organizations in their specific circumstances*" (Otley, 2016, p47). It is found that the effectiveness of any factor is dependent upon the specific circumstances in the context of which it is employed. In that sense, there is no one best way of organizing (Burnes, 1996).

In contingency research, the effectiveness of some dependent variable is contingent upon its fit with one or more independent variables. As a specific instance of contingency research, it is found that effective design and implementation of MCS is contingent upon the organizational structure (Chenhall, 2003; Merchant & Otley, 2006; Otley, 2016). In this thesis, the fit between NHOS and MCS is studied. In the following sections, both of these elements are explored in more detail.

2.3 Non-hierarchical organizational structures

The organizational structure is the way in which tasks are defined and coupled in a network of tasks (De Sitter, 1994; Achterbergh & Vriens, 2010; 2019). Traditional organizations often have a bureaucratic structure in which tasks are grouped on a functional basis (Kuipers et al., 2020; Christensen, Grossman & Hwang., 2009; Mintzberg, 1980). Formalization, fragmentation, and a large hierarchy of regulators are characteristics of a bureaucratic organization. Problems that often occur in such organizations are inflexibility to respond to customer demands and disturbances, many expensive middle managers, and problems related to the quality of work (Kuipers et al., 2020; Christensen et al., 2009; Achterbergh & Vriens, 2010; 2019). In response to those problems and ever-increasing uncertainty and complexity in the organizational environment, organizations have attempted to change their organizational structure, resulting in the emergence of NHOS (De Sitter, 1994; Kuipers, Van Amelsvoort & Kramer, 2020; Robertson, 2015; Minnaar & Van Vondelen, 2022; Land & King, 2014; De Geus, 2014).

There are different types of NHOS, but these are all low parameter value structures, considering De Sitter's (1994) design theory. De Sitter (1994) describes seven so-called design parameters for

designing and diagnosing an organizational structure (Achterbergh & Vriens, 2010). Three design parameters are about the allocation of operational activities, three about the allocation of regulatory activities, and one about the relation between operational and regulatory activities (De Sitter, 1994; Achterbergh & Vriens, 2010). Operational activities involve performance of the primary process, and include preparing, performing, and supporting. Regulatory activities include strategic, tactical, and operational regulation.

Each of the seven design parameters can have a high or low value, resulting in two ideal typical organizational structures; a high parameter value structure (HPVS) and a low parameter value structure (LPVS). Both of these ideal typical structures are described here.

In an HPVS, operational tasks are differentiated into preparing, performing, and supporting. Activities are split into short-cycled sub-tasks, and each task of the same type is concentrated in specialized departments and potentially relates to all types of orders, products, and services (Achterbergh & Vriens, 2010). The guiding principle in designing the organizational structure is to create small repetitive tasks to enhance efficiency. Each small operational task also has its separated small regulatory task. This results in a large hierarchy with many small and separated regulatory tasks. Such an organizational structure is also labelled as a complex structure with simple jobs (De Sitter, Den Hartog & Dankbaar, 1997).

In an LPVS, operational tasks are grouped in relation to a specific order flow, type of product or service, that are as independent from each other as possible (Achterbergh & Vriens, 2010). There are broad tasks, preferably containing a complete process, including preparing, performing, and supporting. Regulatory activities are integrated into operational activities, which results in a flat organizational structure with broad and integrated tasks. The guiding principle in designing the organizational structure is to decentralize as many activities possible into broad tasks, and centralize activities only if deemed necessary. Such an organizational structure is also labelled as a simple structure with complex jobs (De Sitter et al., 1997), in this research considered NHOS.

This thesis focusses on three types of NHOS, which are structures with self-managing teams (De Sitter, 1994; Achterbergh & Vriens, 2010; 2019; Kuipers et al., 2020), holacracy (Robertson, 2015; Farkondeh & Müller, 2021; Minnaar & Van Vondelen, 2022), and temporary organizations (De Geus, 2014; Williams, 2018; Moorkamp, 2018). The choice for including these three types of

organizational structures in this thesis is motivated by the increasing implementation of these structures in organizational practice and the limited literature on the design and implementation of MCS in these emergent NHOS. The three types of organizational structures aimed at increasing flexibility and adaptability are especially well-suited in an uncertain and complex organizational environment (Englehardt & Simmons, 2002; Kuipers et al., 2010). Hence, the continuous increase in environmental uncertainty over the recent years can, at least partially, explain the emergence of organizations with self-managing teams, holacracy, or temporary organizations (Otley, 2016).

In the following sections, an ideal typical description of each of these three types of NHOS is provided. An ideal typical description entails that the described phenomenon is rarely encountered in this exact form in practice (Weber, 1987). Every organization has its own unique context to be taken into account when designing and implementing an organizational structures, which will always result in some deviation from the ideal typical description (Achterbergh & Vriens, 2019; De Sitter, 1994). Nevertheless, it is helpful to utilize ideal typical descriptions in order to conceptually understand the contingency between NHOS and MCS.

In the field of organizational design, the characteristics team size, task design, coordination, decision making, and resources are often discussed in defining and comparing types of organizational structures (Harkema, 2021; Kuipers et al., 2020; Nadler & Tushman, 1997; De Sitter, 1994; Mintzberg, 1980). These characteristics provide the framework for an ideal typical description of self-managing teams, holacracy and temporary organizations.

2.3.1 Self-managing teams

A structure of SMTs is the first ideal typical NHOS discussed in this thesis. A self-managing team is defined as "*a small group of people, which is responsible for the performance of all operational activities (preparation, production and support), to realize a clearly defined and complete task-segment and is, for this purpose, facilitated with the necessary resources. Besides the performance of daily operations, the group is responsible for improving daily operations by analyzing and evaluating their own achievements against the background of the organizational strategy*" (Harkema, 2021, referencing Kuipers et al., 2010 p.353).

Ideas about self-managing teams (SMTs) have been around in the literature for many years (Emery & Trist, 1965; De Sitter, 1994). The emergence in practice has significantly increased only

more recently, even being considered a 'management fashion' (Nijholt & Benders, 2007; Missiaen, & Hootegem, 2013; Renkema et al., 2018).

Literature in the field of organizational design argues that an organizational structure with SMTs is well-suited to accurately and timely respond to changing customer demands and disturbances, potentially decreasing control costs for middle management, and increasing quality of work (De Sitter; 1994, Achterbergh & Vriens, 2010; 2019).

De Sitter's design theory (De Sitter, 1994) is used in this research to elaborate on an ideal typical description of SMTs, because it provides the most comprehensive framework about the design of sociotechnical organizational structures with self-managing teams (Achterbergh & Vriens, 2019).

Regulatory capacity is amplified within SMTs by performing broad tasks including both operational and regulatory activities. It is easier for teams to oversee the whole process and understand the implications of actions, which can also be performed more quickly due to the absence of interfaces with separate regulators. Simultaneously, the chances of disturbances are attenuated by the decreased amount of interfaces between all entities. Interfaces are necessary connections between individuals, teams, or organizations to allow for interactions, which include messages, instructions, requests, or exchanged material (Achterbergh & Vriens, 2010). Each of the interfaces can be a source of disturbances by impacting the relevance, accuracy, timeliness, and completeness of interactions (Achterbergh & Vriens, 2010; Kuipers et al., 2020).

In order to understand how the characteristics of SMTs enable amplification of regulatory capacity and attenuation of disturbances, and to be able to compare an organizational structure with SMTs with other types of organizational structures, an elaboration on each of the characteristics often discussed in defining and comparing types of organizational structures is provided.

2.3.1.1 Team size

To enable effective and efficient functioning, SMTs should be small groups of people. However, the team should be large enough to perform the team task, which is ideally a complete process. To stimulate cohesion and flexibility, a team size of 8-12 workers is desirable, whereas the minimum is considered to be 4 and the maximum is 20 (Schumacher, 1973; Kuipers et al., 2020). Teams with less than 4 members are not stable enough. The impact of each member's

contribution or absence of it is then is too large. Teams with more than 20 members will face challenges with regards to cohesion. Such large groups often break up into sub-groups (Kuipers & Van Amelsfoort, 1990).

2.3.1.2 Task design

Ideally, an SMT is assigned a complete process, or as much activities as possible related to a complete process, including regulatory activities (De Sitter, 1994; Achterbergh & Vriens, 2010). A SMT can function as a team if collaboration within the team is necessary to achieve the desired outcome of a task, which is the case if the tasks of team members are interdependent (Van Amelsvoort, 1994; De Sitter et al., 1997; Kuipers & Van Amelsvoort, 1990; Harkema, 2021). A clustering of interdependent tasks is designed if the team task is broad, and individual tasks in the team are redundant and overlapping.

Broad tasks ensure a low number of interfaces with other task groups, which attenuates disturbances by decreasing chances of miscommunications and other coordination problems. redundant tasks entail that more than one team member can perform each individual task, for which they need to possess multiple skills (Nadler & Tushman, 1997). If team members are multi-skilled, they are able to understand the broad team task and to help each other. Overlapping tasks ensure the need for collaboration within the team. Overlapping tasks result in interdependence among team members, which enhances the need for coordination, communication, and collaboration within the team (Thompson, 1967; Harkema, 2021).

2.3.1.3 Coordination

Mutual adjustment is considered to be an accurate coordination mechanism in organizational structures with SMTs, given the high needs for coordination, communication, and collaboration within the team (Thompson, 1967). This entails direct horizontal communication, information sharing during the process, and collectively adapting the course of action if deemed necessary (Thomspon, 1967; Kuipers et al., 2020). In contrast to hierarchy, mutual adjustment allows for more relevant, timely, accurate and complete coordination and information sharing.

2.3.1.4 Decision making

As many operational, tactical and strategic decisions about team goals, the division of tasks among team members, employed material and technologies, and other decisions are ideally made by SMTs themselves (Achterbergh & Vriens, 2019). This is possible if SMTs can themselves analyse and evaluate their achievements (Kuipers et al., 2020). However, in an organisational context, there are limits to the possibilities of decentralisation. Some overarching organisational goals or decisions involving specific expertise which cannot be taken in an SMT are necessary and desirable to be made more centralised in the organisation (Achterbergh & Vriens, 2019).

Decentralized decision making activities are ideally shared within the SMT and should be done together in the SMT, rather than via a hierarchy (Galbraith, 1977; Achterbergh & Vriens, 2010; Kuipers et al., 2020). Employing shared leadership, team members can be and feel jointly responsible for decision making (Lambert, 2002; Achua & Lussier, 2010; Harkema, 2021). Notwithstanding informal leadership, this also entails that leadership in general should be practiced in collaboration between team members, rather than by a single person (Carrson, Tesluk & Marrone, 2007).

2.3.1.5 Resources

A distinction can be made between tangible and intangible resources. Examples of tangible resources are plants, machinery, and technological devices (Kuipers et al., 2020). Examples of intangible resources are knowledge and skills, which can be further distinguished into technical and social knowledge and skills. Technical knowledge and skills are about the process that needs to be performed, including both operational and regulatory activities (Achterbergh & Vriens, 2019; Kuipers et al., 2020). The development of technical skills is stimulated by overlapping tasks, providing the opportunity to learn new skills (Achterbergh & Vriens, 2019). Social knowledge and skills are about how to relate to others in terms of coordination, communication, and collaboration.

Ideally, all types of resources are located as close to the primary process as possible, hence in the SMT or at least in reach of the SMT (Kuipers et al., 2020). Also, it is preferable that each SMT has its own unique resources, to prevent the occurrence of interfaces with other teams.

2.3.2 Holacracy

Holacracy is the second ideal typical NHOS discussed in this thesis. There is no clear, encompassing and agreed-upon definition of a holacracy in the literature. Schell & Bischoff (2022, p1) define a holacracy as "*a self-managing organizational design with flat hierarchies, purpose-driven actions and high requirements for self-leadership*". Farkhondeh & Müller (2021, referencing Robertson, 2015) define it as "*a new method of organizational governance, which aims to distribute authority and decision-making throughout the whole organization by pushing decision-making authority down to the level of each individual in the organization for self-leadership*".

Although the ideas about alternative structures to hierarchies and self-managing teams have been around for many years (Emery & Trist, 1965; De Sitter, 1994), holacracy as the first comprehensive concept of an entire self-managed organization without hierarchy was introduced in 2007 and has been actively developed since 2015 (Kalmus, Vochozka & Formánek, 2023; Robertson, 2015). Holacracy was even called a hype in business practice (Bernstein et al., 2016).

The holacracy framework by Robertson (2015) is used in this research, because it is an exhaustive organizational framework that is not project-based, such as Kanban or Scrum (Lies, 2020), but it can be applied to the entire organization (Ackermann, Schell & Kopp, 2021; Bernstein et al., 2016).

Literature in the field of organizational design argues that a self-managing holacratic organization is well-suited in response to requirements for high-speed decision making processes, innovation and new work setting (Schell & Bischof, 2022). Holacracy is therefore mainly used in the technology sector and by start-ups (Kaduthanam and Heim, 2019).

Three aspects are central to this type of NHOS; radical decentralization, self-organization, and the 'constitution' (Robertson, 2015; Csar, 2017; Farkondeh & Müller, 2021; Ackermann et al., 2021; Minnaar & Van Vondelen, 2022).

Radical decentralization entails that all responsibilities and decision making authority are allocated at the lowest and only level in the organizational structure. All responsibilities and decision making authority are allocated to roles that individuals can take on (Gupta & Jena, 2023). Managers are no longer present in this NHOS (Ackermann et al., 2021). Radical decentralization

therefore is a means to empower workers to make independent and quick decisions (Gupta & Jena, 2023).

Self-organization entails that individuals are not assigned to tasks by some hierarchical process, but they themselves can take on one or multiple roles in the organization, and over time can let go of roles and take on other roles (Ackermann et al., 2021). In that sense, roles are no fixed, but temporary, and self-selected. What roles and responsibilities exist in the organization, is described in the so-called constitution.

The constitution functions as a rulebook, guiding internal processes and defining the field of action for every role (Ackermann et al., 2021). Decision making processes, roles and responsibilities, are described in a rigid form (Csar, 2017). Thereby, the constitution functions as a framework with absolute boundaries within which workers have the authority to take any action or make any decision to perform their role (Khoury, Jaouen & Sammut, 2024).

In order to understand how holacracy can enhance decision making and innovation, and to be able to compare a holacracy with other types of organizational structures, an elaboration on each of the characteristics often discussed in defining and comparing types of organizational structures is provided.

2.3.2.1 Team size

In a holacracy, the terms team are not used. Rather, the organization is organized in so-called circles. The broadest circle holds the purpose of the organization (Khoury et al., 2024). In case of multiple distinguishable purposes, there can be multiple circles, and each circle has potential sub circles. Each of these circles and sub circles include multiple roles, but there is no explicit consideration of an ideal size for these circles (Ackermann et al., 2021). Some roles appear to exist in most circles, but it remains difficult to determine minimum or maximum size of circles in terms of the number of individuals working in a circle, since each individual can take on multiple roles. It is assumed that the reasoning behind minimum team size of 4 and maximum team size of 20, as described in section 2.3.1.1, is also applicable to holacracy.

2.3.2.2 Task design

Task design consists of roles and positions which are described in the constitution, but are not fixed (Weirauch & Galliker, 2023). The constitution contains guidelines according to which new roles should arise and how circles relate to each other (Bernstein et al., 2016). Role descriptions are within the defined boundaries constantly adjusted and updated by employees who inhere specific roles (Ackermann et al., 2021). Each worker can participate in giving suggestions and feedback. No one tells another worker how to perform their role (Gupta & Jena, 2023). The boundaries for performance of one's role are only described in the constitution. In that sense, the constitution is the formal power-holder in the organization rather than a person (Ackermann et al., 2021).

Workers can take on multiple roles, which are organized in circles. Roles in purpose centered circles include supporting and regulatory tasks (Gupta & Jena, 2023). All circles are semiautonomous in the sense that they can function relatively independent from other circles (Khoury et al., 2024). Circles and sub circles employ double links, with a lead and rep role (Robertson, 2015; Ackermann et al., 2021). A lead role is aimed at maximizing the circle's outcome in relation to its purpose. A rep role is aimed at formulating the circle's developments and desires to other circles.

As employees are self-motivated, they also set, prioritize, and execute personal goals independently (Gupta & Jena, 2023). Therefore, workers can decide to relinquish their role and take on new roles (Ackermann et al., 2021). Choices to take on and relinquish roles are in negotiation with each other and alignment with the lead link, a role whose responsibility it is to have the roles in the circle occupied by suitable and qualified workers, also to maximize the circle's outcome in relation to the purpose (Bernstein et al., 2016; Ackermann et al., 2021).

2.3.2.3 Coordination

Formalization is the main coordination mechanism in a holacracy. This occurs through the constitution. Guidelines on how circles communicate with each other, including roles, responsibilities, and processes are specified (Bernstein et al., 2016; Csar, 2017). Managers are no longer present, ruling out hierarchical coordination (Ackermann et al., 2021). Rather, roles of the

rep link and lead link are considered crucial in coordination between subcircles and supercirle (Robertson, 2015).

Furthermore, regular circle meetings are used as coordination mechanism (Khoury et al., 2024). Governance and tactical meetings can be distinguished (Kalmus et al., 2023; Ackermann et al., 2021). In a governance meeting, individuals occupying a role in the circle voluntarily meet at least once a month to update the governance regarding roles and procedures. This is considered "working on" the organization (Ackermann et al., 2021; Bernstein et al., 2016). In a tactical meeting, progress towards the circle's purpose is discussed. The aim is to create an environment with a certain peer pressure, where workers with a role in the circle are accountable to each other for their responsibilities, projects, metrics and activities (Ackermann et al., 2021).

In these meetings and in coordination in general, open communication between individuals is key. The possibility to ask others for guidance, support, resources and tools enhances the circle's achievements towards its purpose (Gupta & Jena, 2023). Whenever problems arise, team members should communicate openly and step up to lead solutions based on their skills and expertise (Gupta & Jena, 2023). Leadership then occurs naturally by example and according to expertise and responsibility, rather than hierarchy (Powers, 2019 [183]; Ackermann et al., 2021). Since expertise and responsibilities develop and shift over time and leadership is contextual. Leadership responsibilities continually shift as the work changes and as teams create and define new roles, leadership responsibilities also continually shift. In that sense, leadership in a holacracy is contextual (Bernstein et al., 2016). Every individual can and should take leadership within their role end expertise.

2.3.2.4 Decision making

The same argumentation holds true for decision making. Due to radical decentralization, there is full decision making authority for the individual within its role and expertise (Robertson, 2015). Individuals have the authority to take any action or make any tactical decision to fulfil their role as long as they adhere to the constitution (Khoury et al., 2024).

For governance related decisions, the purpose driven self-organized circles are centers of decision making, emphasizing self-organization, distributed authority and the use of collective intelligence (Csar, 2017; Weirauch & Galliker, 2023). Decisions within circles are required to be

made democratically (Ackermann et al., 2021). However, this does not mean that every individual has to vote for each decision, nor that there should be a majority in favor of a decision, but decisions are made when none of the individuals present in a meeting suggests perspectives that need to be integrated into the proposal (Khoury et al., 2024). This is called integrative decision making (Gupta & Jena, 2023). Once decisions are made and put into practice or formalized in the constitution, it is possible and desirable to reconsider and refine decisions according to the emergence of new information (Khoury et al., 2024).

2.3.2.5 Resources

With regards to intangible resources in holacracy, it is for both managers and subordinates especially important to unlearn old behaviors (Bernstein et al., 2016). Only then can each individual acquire the social knowledge and skills required for functioning in a holacracy. It is a shift to an enabling mode, encouraging individuals to make decisions on their own within their role and responsibilities (Bernstein et al., 2016). Training to work both 'in' and 'on' the structure is suggested (Robertson, 2015; Bernstein et al., 2016).

Developing technical knowledge and skills is stimulated by the ability to take on new roles if proficiency at a certain level is developed and proven in another role. Due to transparency in the open roles and purpose driven initiatives for allocating roles to certain individuals, technical knowledge and skills can be more effectively employed. With regards to tangible resources, the organization in circles could lead to an equal and fair distribution of resources, due to transparent and collective decision making (Robertson, 2015; Weirauch & Galliker, 2023).

2.3.3 Temporary organizations

Several terms are used for non-hierarchical temporary organizations, including ephemeral organizations (Lanzara, 1983), emergent organizations (Drabek & McEntire, 2002), temporary organizations (Moorkamp, 2018), crisis response organizations (Graham, 2008) and project organizations (El-Sayegh et al., 2016). They are in this thesis combined in the term 'temporary organizations'.

The commonalities are that workers deconstruct and reconstruct key elements of the organizational structure in response to a crisis or problem situation with high degrees of

uncertainty and requirements for direct action (Kalkman, 2023; Moorkamp, 2018). These organizations tend to dissolve when the crisis or problem situation is restrained (Lanzara, 1983). They can form from one or multiple umbrella or parent organizations and start with deconstructing key elements of the organizational structure to arrive in a non-hierarchical situation, or different actors may come together and start in an anarchy (Kalkman, 2023; El-Sayegh et al., 2016). Anarchy, as an unprogrammed means of coordinating activities is well-suited for interventions by temporary organizations in uncertain emergency situations (Argote, 1982).

Anarchism is "*a social, economic, and political philosophy, whose ideas are pursued by various antiauthoritarian social movements*" (Williams, 2018, p1). However, there is no encompassing definition of anarchy, since anarchism is a combination of "*various and complicated strands*" (Williams, 2018, p1). What is central to the idea of anarchy, is the absence of central governance and focus on self-regulation (De Geus, 2014; Williams, 2018). These characteristic do not mean that anarchy can be equated with "*chaos, mindless violence, a complete lack of rules and authority and an ethics of 'anything goes'*" (Swann & Stokborod, 2014, p.595).

Although the political critique is well-developed, little research on anarchism and its principles has been done within management studies (Swann & Stokborod, 2014). The literature does not provide a comprehensive framework on anarchy as an organizational structure (Swann & Stokborod, 2014). Therefore, the focus of this SLR is on the commonalities of temporary organizations as described above and literature on ephemeral, emergent, temporary, crisis and project organizations in studied.

Literature in the field of organizational design argues that non-hierarchical temporary organizations are well-suited to provide individual and collective liberty, as well as increasing organizational effectiveness by ensuring that those who are most closely involved in the operational activities, and hence are aware of the most details and situational factors, can make decisions (De Geus, 2014; Moorkamp, 2018).

Individual and collective liberty are necessary in highly uncertain environments, with unprecedented or ever-changing circumstances, ambiguity with respect to goals, uncertainty concerning the functioning and outcomes of technology and structure, and fluidity of participation (Cooper, Hayes & Wolf, 1981). In such occasions where cause-effect relationships of

actions cannot not determined a priori, it remains unclear what actions are necessary to be performed, let alone have a hierarchy decide on the allocation and control of activities (Thompson, 1967). However, there is in such uncertain contexts often the necessity to act; the desire for action is greater than the desire and possibility of analysis (Mintzberg, 1973; Cooper et al., 1981).

To achieve the desired degree of flexibility and capacity to act, central aspects of temporary organizations are minimal central control, and complete political and economic decentralization (De Geus, 2014; Moorkamp, 2018). In order to understand why temporary non-hierarchical organizations are well-equipped in a highly uncertain environment, and to be able to compare temporary organizations with other types of organizational structures, an elaboration on each of the characteristics often discussed in defining and comparing types of organizational structures is provided.

2.3.3.1 Team size

Temporary organizations consist of an interwoven network of communities and can exist in all sizes and degrees (De Geus, 2014). It is difficult, if not impossible, to determine a priori what tasks are necessary to be performed and what team size and composition is suitable (Moorkamp, 2018). Furthermore, what is considered a suitable team size and composition, can change over time, due to changes in the highly uncertain environment.

2.3.3.2 Task design

To adapt to the circumstances in the environment, loose, flexible and federate framework with complete decentralization is desired (De Geus, 2014). Given the ambiguity with respect to goals, uncertainty concerning the functioning and outcomes of technology and structure due to unprecedented or ever-changing circumstances, it is difficult, if not impossible, to define and allocate tasks a priori (Kalkman, 2023). Once defined on the job, task definitions and allocations are unstable and can change over time (Majchrzak, Jarvenpaa & Hollingshead, 2007; Kalkman, 2023). Despite the inability to define tasks a priori, there is a need for direct action (Williams, 2018). Appeal to a hierarchical entity is in such a situation undesirable.

2.3.3.3 Coordination

Organizational units are autonomous entities that should cooperate on the basis of free agreements (De Geus, 2014). There are subunits (e.g. municipalities or operations centres) which possess local autonomy and which can federate on a voluntary basis with the other units.

Impermanent or limited leadership is suitable in a crisis context (Williams, 2018). Leadership is not predefined and allocated to certain individuals, but an emergent process that occurs in anarchy, exemplified by TAO and social movements (Marinez & Himick, 2023; Swann & Stokborod, 2014). This should be combined with inclusive communication styles (Donadelli et al., 2023), enabling everyone to contribute diverse perspectives and to feel committed, since those who are most closely involved in the operational activities, and hence are aware of the most details and situational factors, can make the most effective decisions (De Geus, 2014; Williams, 2018)

2.3.3.4 Decision making

Decision making by those closely involved in operational activities without orders or commands from the top is considered self-regulation in anarchy. No centralized actor could ever be better-informed about the details and situational factors. Anarchy therefore provides individual and collective liberty by self-guidance (De Geus, 2014).

There is in TAO a premium on actions rather than processes of decision making (Majchrzak, Jarvenpaa & Hollingshead, 2007; Kalkman, 2023; Mintzberg, 1973; Cooper et al., 1981). Action in organizational situations where goals and the causes of outcomes are ambiguous cannot have detailed prescriptions, only rough guidelines. Previous experience and learning provide such guidelines (Cooper et al., 1981). In order to better understand goals and cause-effect relations, action must take place to enable learning by reflective practice (Kramer, Moorkamp & Visser., 2021; Kramer & Moorkamp, 2019). In that sense, decision making can be individual or in the decentralized unit and without elaborate process or voting.

Autonomous decentralized units aim at collectivist and broad goals, such as resolving a crisis situation, which can contain divergent sub goals (Williams, 2018). If a joint decision making process is initiated within decentralized units, decision making is ideally directly democratic to enable consideration of all important factors and for workers to feel included. Consensus decision making strategies, similar to a holacracy, are manifestations of direct democracy within anarchist organizations.

2.3.3.5 Resources

Since it is unclear what goals of TAO are and how cause-effect relations work, it is often unclear what resources are necessary in such an anarchistic organization (Cooper et al., 1981; Moorkamp, 2018). Tangible resources and technical skills can be selected and trained only to a certain degree, for example in case a TAO is formed from a parent organization in a specific industry or with a specific expertise, such as a military organization (Kalkman, 2023). However, it remains unclear exactly what is required and will work in a highly uncertain crisis context. To allow for swift supply of accurate resources as demands and become clear in the crisis situation, tangible resources are ideally provided by small scale factories and workshops, or basecamps, evenly dispersed in the country and situated near to the local fields and gardens (De Geus, 2014, Moorkamp, 2018).

With regards to social knowledge and skills, it is desirable to learn by play (Weick, 1977; Cooper et al., 1981). Combining thinking and doing, opportunities to pursue new branches of art and knowledge can be provided (De Geus, 2014; Kramer et al., 2021; Kramer & Moorkamp, 2019). This entails training scenario's, learning by doing, and reflective practice.

2.4 Management control systems

In the previous section, three ideal typical organizational structures were described, as well as their potential benefits for meaningful survival by their flexibility and adaptability in a highly uncertain organizational environment. However, the degree to which these benefits can be realized is to a large extent dependent on the design and implementation of a contingent MCS (Otley, 2016; Harkema, 2021). In the following sections, it is attempted to define a MCS, understand MCS as a package, and literature about different typologies of MCS is reviewed.

2.4.1 Defining MCS

There are many definitions of MCS with different focus and scope (Malmi & Brown, 2008; Merchant & Otley, 2006). Differences relate to including (e.g. Gould & Quinn, 1993) or excluding (e.g. Merchant & Van der Stede, 2007) strategic regulation, focus on shareholders (e.g. Rapp et al., 2011) or stakeholders (e.g. Durden, 2008; Conaty & Robbins, 2021), and focus on planned and rigid (e.g. Gould & Quinn, 1993) or emergent and adaptive controls (e.g. Merchant, 1987).

One of the early definitions of MCS is by Anthony (1965): "*the process by which managers ensure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives*" (Langfield-Smith, 1997). This definition leaves room for both shareholder and stakeholder value as organizational objectives, as well as both planned and emergent controls, where it is assumed that some overarching goal exists outside of the MCS, which is meaningful survival.

2.4.2 Management control systems as a package

The provided definition includes the notion that a MCS involves processes and hence a combination of activities. Management control activities do not operate in isolation, but are part of a broader system of practices. The use and impact of a specific element of a MCS is related to the functioning of the broader MCS package (Malmi & Brown, 2008; Otley, 1980). Studying and arguing for the effects of management control practices in isolation is potentially a model under specification (Chenhall, 2003). Elaborating on individual management control elements would be of limited theoretical and practical relevance, because the effectiveness of an element is related to the functioning of the broader MCS (Malmi & Brown, 2008). Understanding MCS as a package

allows for better theorizing on how to design a range of controls aimed at meaningful survival and improves the generalizability of contingency results (Malmi & Brown, 2008; Bedford & Malmi, 2015). Therefore, this study about effective design and implementation of a MCS in NHOS is performed by utilizing a typology of MCS rather than studying an individual management control element.

2.4.3 Typologies of management control systems

Several typologies exist and the goal of this section is not to provide a comprehensive overview of the literature (see e.g. Merchant & Otley, 2006; Chenhall, 2003). In this section, literature on four typologies of MCS is reviewed. The first typology discussed is an early one by Bruns and Waterhouse (1975), after which typologies are discussed that iteratively answer the critique of the previously discussed typology. Thereby, it is argued that the levers of control framework by Simons (1994) is suitable for this research about MCS in NHOS.

2.4.3.1 Administrative and interpersonal controls

Bruns and Waterhouse (1975) found in a study of twenty-five organizations that organizational control practices that are contingent with organizational context and structure can be dichotomized in administrative and interpersonal controls. The first being found in ‘decentralized but structured organizations’ in stable environments, the second being found in ‘centralized organizations’ in turbulent environments.

Administrative controls are formalized and standardized operating procedures. Behaviour is governed by explicit and rigid rules. Decentralization of decision making whilst maintaining a high degree of control is perceived possible due to the narrow boundaries of these rules. The downside of administrative controls that it is limiting innovation and flexibility, but that is considered less necessary in a stable environment.

Interpersonal controls are based on simple or narrowly defined measures. Subordinates have more interactions with their superiors, to explain methods of meeting measures, or explain variances. A high degree of interactions between superiors and subordinates, and hence centralization of decision making is perceived necessary to maintain control in a complex or uncertain environment.

The dichotomy of controls is linked to a dichotomy of organizational structures. It would be interesting to study how this typology of MCS applies to types of organizational structures that have been developing more recently, such as team-based organizations (Chenhall, 2003).

Although the distinction between administrative and interpersonal controls can be a useful starting point for categorizing MCS, it remains relatively general. The dichotomization of controls is also a limitation in contemporary society where the environment and organizational structure can no longer be dichotomized, but involve more complexity (Chenhall, 2003). Several more specific typologies were developed more recently.

2.4.3.2 Control of actions, results, and personnel

Management control is by Merchant (1982) argued to be needed, since workers are sometimes unable or unwilling to act in the best interests of achieving organizational goals. Management control is introduced with the goal to have no unpleasant surprises in the future and to assure goal achievement. This can be done by avoiding control problems or addressing them by implementing one or more of three categories of controls; control of actions, results, and personnel.

Control of specific actions aims at ensuring that "*individuals perform (or do not perform) actions that are known to be desirable (or undesirable)*" (Merchant, 1982, p.45). This includes behavioural constraints, action accountability, and pre action review. Such controls are suitable in situations in which it can be established which specific actions are desirable, with either a high or low ability to measure results.

Control of results aims at ensuring that specific desirable results on predefined dimensions are achieved. This includes results accountability. Such controls are suitable in situations in which there is a high ability to measure results and it either can or cannot be established which specific actions are desirable.

Control of personnel aims at providing necessary assistance to workers. This includes upgrading capabilities, improving communications, and encouraging peer control. Such controls are suitable in situations in which it cannot be established which specific actions are desirable, and there is low ability to measure results.

In contrast to the dichotomization of Bruns and Waterhouse (1975), Merchant (1982) allows for the conceptual combination of types of controls. However, it shifts further from the ideas of MCS as a package (Malmi & Brown, 2008; Otley, 1980), since each control problem can be considered in isolation and this typology does not necessarily categorize MCS as a package.

Reasoning that the ability to measure results and ability to establish desirable actions are important considerations for choices regarding MCS are valuable insights. However, these two aspects are complemented with more considerations in other frameworks.

2.4.3.3 Management control of public and not-for-profit activities

Hofstede (1981) argues that management controls are usually not suited for public and not-for-profit organizations. For these types of organizations, choices regarding MCS depend on the existence or absence of four criteria; unambiguous objectives, measurable outputs, known effects of interventions, and repetitiveness of the activity (Hofstede, 1981, p.193). Based on the judgements of these criteria in a control problem, one or more of six different types of MCS can be selected.

These six types of MCS can be distinguished into cybernetic and non-cybernetic model. A cybernetic model comprises a system in which deviations from desired outcomes are detected through feedback mechanisms, which then trigger corrective actions to maintain control towards the achievement of organizational goals. Cybernetic controls include routine control, expert control, and trial-and-error control. A non-cybernetic model cannot rely on feedback loops, but requires reliance on other means to regulate behaviour. Non-cybernetic controls include political control, judgemental control, and intuitive control.

Given this distinction, a careful study of the nature of the situation in which the control problem occurs is required before an accurate choice can be made regarding what model to use. Two types of errors can occur in this choice. A Type I error entails that a non-cybernetic approach is chosen where the situation meets the conditions for a cybernetic one. A Type II error entails that a cybernetic approach is chosen where the situation does not meet the conditions for it.

Although this typology of MCS provides very specific insights on tackling control problems, considering four contextual variables, and therefore being more specific than Merchant (1982), it also shifts even further from the ideas of MCS as a package (Malmi & Brown, 2008; Otley, 1980).

2.4.3.4 Levers of control framework

Simons (1994) argues that MCS can be clustered into four types of systems, so-called levers of control; belief systems, boundary systems, diagnostic control systems, and interactive control systems.

Belief systems are aimed at inspiring and motivating workers by articulating the values, purpose and directions that senior managers want their employees to embrace. It can be used as a system to guide patterns of desirable behaviour. However, formulations are often broad to appeal to a broad audience in the organization and are therefore criticised for lacking substance.

Boundary systems are aimed at risk avoidance by formulating limits and rules which must be respected, typically stated in minimum standards and negative terms. Such boundaries on what not to do, rather than prescriptions on what to do, unleash initiative and creativity to allow for innovation within clearly defined limits. Boundaries are themselves not motivating for workers and too strict boundaries can be a burden on initiative and creativity. Therefore, they are ideally combined with belief systems (Simons, 1995).

Diagnostic control systems are aimed at monitoring goal achievement and correcting deviations from standards of performance by tracking the progress of individuals, departments, or organizations towards strategically important goals. If the control activities in a diagnostic control system are repeated in a structured manner, it can be made an interactive control system.

Interactive control systems are aimed at organizational learning by focussing attention, participation in the decisions of subordinates, and forcing dialogue on key strategic issues. Information is considered to be best interpreted and discussed in face-to-face meetings of superiors, subordinates, and peers. Thereby, interactive control systems are a catalyst for an ongoing debate about available information, underlying assumptions, and action plans.

Combinations of the four levers of control are possible and generally desirable, the extent to which each of the levers is used can differ. By finding a suitable combination, an organization can reap the benefits of innovation and creativity, without compromising on control (Simons, 1995).

Furthermore, the levers of control framework is diagnostic of MCS in its entirety and therefore in close alignment with ideas of MCS as a package (Malmi & Brown, 2008; Otley, 1980).

Although the levers of control framework is a relatively broad framework and directs organizational focus on strategic issues affecting control, it is criticized for neglecting informal controls, which typically exist and play a role at lower levels in the organization (Ferreira & Otley, 2009). In defining MCS, Simons (1994) excludes informal control processes from his definition of management control. Therefore, his examples of the four types of systems are solely formal control processes. Informal processes are especially important in NHOS, for example mutual adjustment in SMTs (Thompson, 1967). The exclusion of informal control processes in the initial definition by Simons (1994) is not problematic for using the levers of control framework in this thesis. It is possible to extend the definition of MCS in the framework to include informal processes, as Simons (1995) himself already did.

A further critique is related to neglecting the operational levels in the framework, and implicit assumption that control activities are solely or at least mainly performed by managers in hierarchical positions (Ferreira & Otley, 2009). This research could contribute to responding to this critique by studying the levers of control in NHOS.

3 Methodology

As explained in the first chapter, the aim of this research is to contribute to the development of literature on MCS in NHOS. A literature review is considered an appropriate methodology for achieving the goal to map and review current research in order to contribute to the development literature and research on MCS in NHOS (Massaro, Dumay, and Guthrie, 2016; Jackson, 1980; Cooper, 1988). Literature on both NHOS and MCS is well-developed, but there has been few attention for the relation between NHOS and MCS. Hence "*the need for a new study is not as great as the need for the assimilation of already existing studies*" (Massaro et al., 2016, referencing Light and Pillemer, 1984, p. 169).

A structured literature review (SLR) is adopted as a systematic methodology (Massaro et al., 2016). It is required for an academic piece of writing, including a literature review, to have a logical structure and well-defined plan (Hart, 1998). A literature review protocol consists of a search strategy, inclusion and exclusion of literature, and the analysis (Massaro et al., 2016). Each of these elements is discussed in turn.

3.1 Search strategy

Massaro et al. (2016) distinguish three types of search strategies; a keyword search, highest citated article search (citation classics), or search in a single journal. A keyword search is selected as search strategy for this research, because it can help to find "*relevant articles that extend existing topics in a particular field*" (Massaro et al., 2016, p. 777). Citation classics and single journal search are considered less suitable, because the aim of this research is neither to establish which article is most impactful in a field, nor to critically reflect on the development of a scientific dialogue within a single journal.

3.1.1 Database

The literature search is performed in the Thomson Reuters' Web of Science database (WoS). This database is generally considered suitable for research evaluations given the extensive and interdisciplinary coverage of academic literature (Mongeon & Paul-Hus, 2016). WoS consists of academic publications, books and conference papers, whereas other databases such as Google

Scholar are more extensive, including more non-peer reviewed and non-academic articles. Furthermore, it is possible to select by categories in WoS and manage references in End Note, linked to WoS.

3.1.2 Keywords

The search string for this research is formulated in an iterative way, altering with synonyms and inclusion or exclusion of different parts. Thereby, the aim is to be as inclusive as possible, to minimize the likelihood of missing literature with valuable insights. Furthermore, experts in the field of organizational design as well as in management accounting were consulted to enhance construct validity (Massaro et al., 2016). The search strings are presented here.

Definitions of the theoretical concepts NHOS and MCS, as well as the literature discussed in chapter 2 provides insights into keywords to be used in search strings. Three types of NHOS are of interest in this thesis; organizations with SMTs (De Sitter, 1994), holacracy (Robertson, 2015), and temporary organizations (De Geus, 2014; Moorkamp, 2018). Eleven keywords representing these three types of organizational structures were formulated after an iterative process and consulting three experts in the field of organization design: "self#manag* team*" OR "self#manag* group" OR "self#organi* team*" OR "self#organi* group" OR holacra* OR "temporary organi*" OR "crisis organi*" OR "synthetic organi*" OR "ephemeral organi*" OR "emergent organi*" OR "project organi*".

In analysing MCS, the levers of control framework (Simons, 1994) is used. Two general keywords on control and regulation were formulated and each of the four levers of control was operationalized with two keywords, resulting in ten keywords on management control: control* OR regul* OR values OR purpose OR boundar* OR limit* OR diagno* OR monitor* OR learn* OR interact*.

For results to fit within the definition of an organizational structure as used in this research, the keywords ‘structur* OR task*’ were added. It was established by using ‘NOT structur* OR task*’, that the articles excluded are related to the levers of control, but in contingency with factors which do not fit within the definition of the organisational structure as used in this research. Hence the decision was made to include these two keywords in the search string to restrict the search results.

The three partial search strings presented here were combined with AND operators, resulting in the full search string: ("self#manag* team*" OR "self#manag* group" OR "self#organi* team*" OR "self#organi* group" OR holacra* OR "temporary organi*" OR "crisis organi*" OR "synthetic organi*" OR "ephemeral organi*" OR "emergent organi*" OR "project organi*") AND (structur* OR taks*) AND (control* OR regul* OR values OR purpose OR boundar* OR limit* OR diagno* OR monitor* OR learn* OR interact*). Filters for relevant articles in the categories Management, Business, and Business Finance were applied. This search resulted in 217 articles.

3.2 Inclusion and exclusion

Once the literature search is performed, it is required to carefully select relevant articles (Massaro et al., 2016; Dixon-Woods, 2011). It is established by perusing titles and abstracts which articles relate to the concepts NHOS (SMTs, holacracy, temporary organizations) and MCS (lever of control). Articles that do not fit the operationalisation of the types of NHOS or MCS framework used in this research were excluded from the analysis. The research approach schema including the number of articles included and excluded is presented in Figure 1.

86 articles did not relate to the topics NHOS and MCS, whereas 19 articles did not discuss NHOS as a variable or did not fit in the definitions used in this research. 82 articles did not discuss MCS as a variable or did not fit in the definitions used in this research. Two conference papers and one journal article could not be accessed, and hence were also excluded from the analysis. This resulted in a total number of 27 articles included in the literature review for analysis, which are presented in Appendix 1.

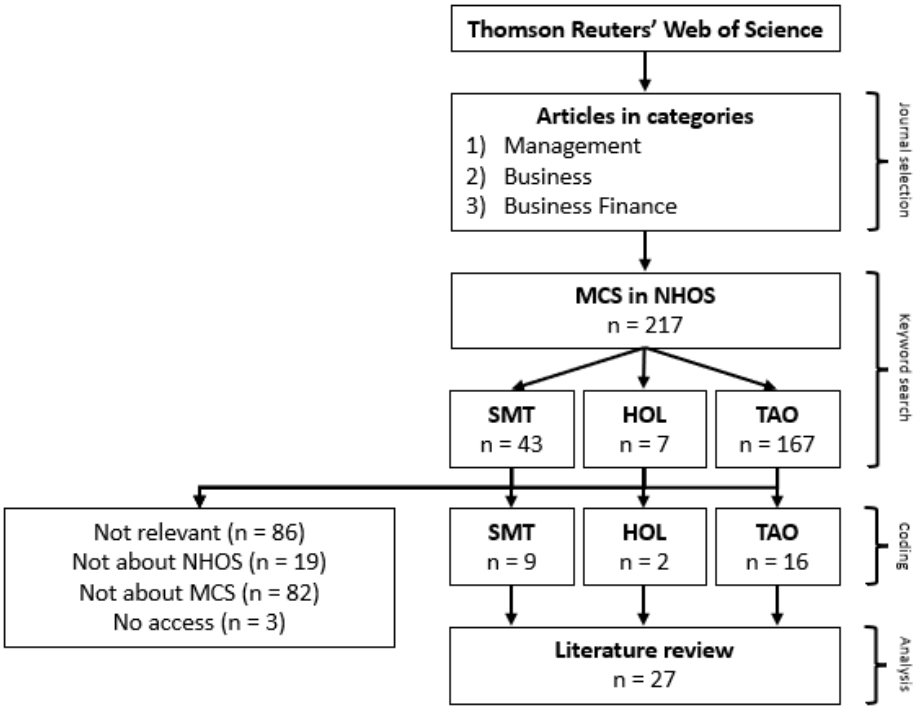

Figure 1. Research approach schema

3.3 Analysis

In this SLR, academic articles and book chapters are the unit of analysis (Massaro et al., 2016). Analysing the included literature is done by identifying important characteristics of the articles and to code them. Thereby, codes are related to characteristics of types of NHOS (team size, task design, coordination, decision making, and resources) and the levers of control framework (belief systems, boundary systems, diagnostic control systems, and interactive control systems). The description of these codes in the analysis is organized conceptually, so that works relating to the same ideas appear together (Cooper, 1988).

Coding is done in Atlas.ti, which also allows for tabulation of quotations. Findings are interpreted based on the tabulation and interpretation of the content of the articles (Massaro et al., 2016). The findings are summarized in tables, tabulating the characteristics of types of NHOS against the levers of control. Thereafter, conclusions and avenues for future research are discussed.

4 Analysis

Literature is analyzed to identify requirements for contingent design of MCS based on the described characteristics of NHOS as described in chapter 2. Coding was done in Atlas.ti, allowing for tabulation of quotations by characteristics of NHOS against levers of control. This tabulation is presented in Appendix 2. In the following sections, the coded articles are analyzed and interpreted for each of the types of NHOS to identify the influence of key elements in NHOS on the requirements for contingent design and implementation of MCS.

4.1 Self-managing teams

In this section, the requirements for the design and implementation of a contingent MCS in an organizational structure with SMTs are described, by analyzing how key elements of an organizational structure with SMTs are in the literature related to the design and implementation of a MCS.

4.1.1 Team size

In the included literature for this SLR, there is no consideration of team size as an element in the contingent design and implementation of a MCS.

4.1.2 Task design

Broad tasks, ideally including a complete process and regulatory capacity, requires that workers have access to accurate information to make progress on the task visible and to be able to adjust the course of action if deemed necessary (Annosi et al., 2020b). Especially because workers in SMTs are “close to action”, they are better able to interpret diagnostic information and establish the cause of potential deviations or interferences (Johnson et al., 2013). Due to task design with a high degree of interdependencies within an SMT, the team can develop routines based on a diagnostic control system, which allow for accurate coping with interferences when they arise (Bitter et al., 2013). This enables and requires learning by doing (Annosi et al., 2020b).

Furthermore, a high degree of interdependencies within an SMT stimulates double loop learning by learning from each other (Annosi et al., 2020b; Bitter et al., 2013), especially in a

multidisciplinary setting, with cross-functional tasks (Johnson et al., 2013; Bitter et al., 2013). Such multidisciplinary collaboration stimulates challenging professional basic assumptions. Double loop learning and the related control mandates are important for continuous improvement and result in higher-performing teams (Bitter et al., 2013).

However, due to the low degree of interdependencies with other teams, there remains a "Lack of routines for transforming the knowledge developed at team level from tacit into explicit or for aggregating teams' knowledge at organization level" (Annosi et al., 2020b, p.11). Hence, interactive control systems should be stimulated in SMTs.

4.1.3 Coordination

Coordination in an organizational structure with SMTs is partly done by the definition of tasks and responsibilities in the organizational structure as a boundary control system (Randolph & Sashkin, 2002; Martela, 2023; Millward, Banks & Riga, 2010).

By defining responsibilities, workers in SMTs "*do not have to worry about stepping on one another's toes or about getting permission before taking action to achieve desired results*" (Randolph & Sashkin, 2002, p.104). Thereby, the organizational structure makes certain types of action possible and defines expectations about the behavior of others, which functions as a coordination mechanism (Millward et al., 2010).

Although defining an organizational structure and responsibilities is helpful, it is for organizations with SMTs destructive to formulate too strict boundaries (Martela, 2023). Strict boundaries would result in a decrease in flexibility to respond to environmental uncertainty and change. Therefore, coordination in organizational structures with SMTs also requires another mechanism.

A belief system with shared values and goals among team members set directions and help in coordinating team activities (Annosi et al., 2020b). Thereby, "goals focus attention and energize goal-relevant activities, predicting persistence in the face of obstacles" (Millward et al., 2010, p.6). This entails workers share basic assumptions and norms which form the blueprint against which possible actions in response to interferences are reviewed. However, a too strong belief system in which norms and accepted behavior are highly specific, results in the situation that individuals

cannot select behavior other than that which is legitimated by the team, thereby inhibiting learning (Annosi et al., 2020b).

Hence, feedback on the progress and suitability of legitimated behavior is also crucial to sustaining goal-relevant coordination and in guiding the potentially required adjustment of behavior (Millward et al., 2010). However, feedback can at the same time have a negative effect on SMTs by "*fostering the repetition of the same behaviors and reducing their motivation to learn new things*" (Annosi, Monti & Martini, 2020a, p.539).

Workers in SMTs often have access to an information system to access diagnostic information they need (Martela, 2023). Beyond single-loop learning from diagnostic control, active and systematic reflexivity in SMTs is also crucial as it "*can not only pre-empt or address negative team processes (group think, social loafing, intra-team conflict, negative response to repeated failure) it can facilitate more strategic action and also learning from mistakes*" (Millwards et al., 2010, p.15). Sharing leadership in SMTs promotes a critical attitude and fosters team learning behaviors "*including challenging assumptions, reflecting on past performance, and providing high-quality feedback*" (Wang et al., 2017, p.2).

4.1.4 Decision making

The decentralization of decision making in organizational structures with SMTs, requires that relevant and understandable information is available to all workers involved in decision making in a timely manner (Bitter et al., 2013; Millward et al., 2010; Randolph & Sashkin, 2002). Without a diagnostic control system to ensure information sharing as input for decision making, "*empowerment will go nowhere*" (Randolph & Sashkin, 2002, p.104). SMTs need both numeric and verbal input for decision making and the ability to perform root cause analysis (Giordan & Ahern, 1994), because they are in the position to decide on team goals and determine how to continuously improve processes and output. Being close to the primary process allows for enhanced access to insights into making improvements, as well as enhanced interpretation possibilities of available information (Bitter et al., 2013). SMTs which receive more extensive feedback on their internal functioning are more likely to make accurate changes in their operations and improve performance (Johnson et al., 2013).

When the team takes full responsibility for deciding on and accomplishing their own tasks, hierarchical management control is replaced by self-management, leveraging team reflexivity and double loop learning (Martela, 2023). Thereby, it is important to understand each other's role to foster mutual respect and prevent destructive conflict in the decision-making process (Bitter et al., 2013; Randolph & Sashkin, 2002). A shared vision and goals further allows employees to keep focus on the overall results if a difference in opinion arises between employees (Bitter et al., 2013).

Decision making is inherently linked to conflict, but it does not have to be destructive. It can be rather helpful to stimulate reflexivity and thereby enhance the quality of decision making (Millward et al., 2010, Bitter et al., 2013). Decentralization of decision making stimulates the involvement of multiple perspectives and development of reflexivity in SMTs. When SMTs are implemented in an organizational structure, there is "*an important role to be played by the leader as a facilitator of team reflexivity and in the use of this to build up collective efficacy by integrating performance feedback into the self-correcting cycle*" (Millward et al., 2010, p.22).

Although decision making in organizational structures with SMTs is ideally decentralized, the decision to implement SMTs in an organizational structure is often a centralized decision of highly visible CEOs who have an important role in creating a shared vision on the implementation of SMTs (Bitter et al., 2013; Giordan & Ahern, 1994; Martela, 2023).

4.1.5 Resources

A belief system centered around the internal implementation of SMTs in the organizational structure is ideally accompanied by a belief system with external customer focus, to marshal resources effectively (Giordan & Ahern, 1994). Although decision making is decentralized, ideally also with regards to resource deployment in pursuit of common goals, SMTs are constrained by resource availability (Bitter et al., 2013). SMTs ideally have themselves diagnostic insights into their resource constraints and as few prespecified boundaries possible beyond the total amounts available to them. It is perceived to be a given that workers close to the primary process have the intangible resources to best interpret diagnostic information about the process and progress, hence a diagnostic control system should be aimed at making information accessible to them (Bitter et al., 2013).

Resource constraints can also be related to available time. Noted should be that "*as deadlines draw nearer, teams become more hesitant to engage in learning behaviors*" (Wang et al., 2017, p.6). Thereby, resource constraints can exhibit limits on an interactive control system.

4.2 Holacracy

In this section, the requirements for the design and implementation of a contingent MCS in a holacracy are described, by analyzing how key elements of holacracy are in the literature related to the design and implementation of a MCS.

4.2.1 Team size

Team size and composition change relatively swiftly in a holacracy (Ackermann et al., 2021). Roles consist of multiple responsibilities and individuals can occupy multiple roles at the same time. A well-defined boundary system makes it easier to take on roles and subsequently adjust and update role descriptions if deemed necessary.

4.2.2 Task design

The organizational structure in holacracy consists of circles, which are all dedicated to a specific purpose, functioning as a belief system (Ackermann et al., 2021). Every role within the circle has a specific part to play in the achievement of this purpose. This structure of circles focusing on a specific purpose "*serve as an important antecedent for organizational commitment and identity*" (Ackermann et al., 2021, p.1290). There is no single person or team responsible for the formulation and communication of values and purposes. Rather, purpose and related roles are formulated in governance meetings. In practice, organizations can give substance to this shared responsibility by formulating a special role with the purpose to "'*Live our beliefs to the fullest' [and in this regard] raise awareness of the responsibility that each individual worker in the organization bears for himself and others*" (Ackermann et al., 2021, p.1291).

Each role is defined in great detail in the constitution, exhibiting boundary control. "*All rules can be found in the Holacracy constitution, which functions as a rulebook, guides the internal processes and defines every workers' field of action*" (Ackermann et al., 2021, p.1287). In case the

constitution cannot provide the required guidance (i.e. boundaries) for a given situation, leading to tension, it should be developed in a governance meeting, providing room for reflexivity.

The organizational structure shapes the way in which individuals act with regards to reflexivity and knowledge sharing (Cherman & Rocha-Pinto, 2016). In holacracy, reflexivity and knowledge sharing have a prominent place, to run an organization openly and democratically.

4.2.3 Coordination

Tensions not related to task design can be discussed in tactical meetings, replacing the hierarchical role of a traditional manager (Ackermann et al., 2021). In these meetings, tensions can be discussed with the goal to create strong norms as a belief system "*that exercises a certain peer pressure where all members of the circle are accountable to each other regarding their responsibilities, projects, metrics and recurring activities*" (Ackermann et al., p1288).

4.2.4 Decision making

Circles are required to run openly and democratically in order to stimulate learning and focus attention towards strategically important issues (Ackermann et al., 2021). All workers should be stimulated to advance the entire organization by contributing information and ideas in decision-making. Every member of the organization can call for a meeting if tensions are experienced.

Meetings, either governance or tactical, follow a sophisticated and fixed structure with specified roles, which is supposed to enhance transparency and agility of decision making in the circle in specific and the organization in general (Ackermann et al., 2021).

These decision making processes stimulate interactive control by inclusion of all individuals in the "*recursive construction of the organization and of their knowledge embedded in practices.*" (Cherman & Rocha-Pinto, 2016, p.432). Thereby, it is required in meetings to question "*the knowledge already established in that context and defined prior to the situation experienced*" (Cherman & Rocha-Pinto, 2016, p.432).

4.2.5 Resources

A distinction can be made between tangible and intangible resources, but there is no consideration of tangible resources in the included articles for this SLR. Only intangible resources are considered.

Providing workers in the organization with the required knowledge about the functioning of holacracy is considered a time-consuming challenge (Ackermann et al., 2021). Especially challenging is the unlearning of behaviors and routines learned in more hierarchical organizational structures and subsequently adapting to the principles of holacracy. This requires a strong interactive control system.

Such an interactive control system is also required to exist in the well-functioning of holacracy, because "*individuals at all levels need to advance the entire organization by contributing information and ideas*" (Ackermann et al., 2021, p.1288). Only then, tactical and governance meetings can be fruitful.

4.3 Temporary organizations

In this section, the requirements for the design and implementation of a contingent MCS in temporary organizations are described, by analyzing how key elements of temporary organizations are in the literature related to the design and implementation of a MCS.

4.3.1 Team size

The size of teams in temporary organizations is relatively fluent. This also entails that workers join and leave temporary organizations over time. To ensure sustained progress towards the achievement of the overall goal, it is important to work in plan-do-act-check (PDCA) cycles, which are adaptive to changing circumstances, and stable enough in altering team compositions (Rostaldes et al., 2014). To facilitate such a process, temporary organizations typically have one or more parent organizations setting norms, setting relatively abstract overarching goals, directing the utilization of PDCA cycles as a diagnostic tool, and coordinating between subprojects (Shenhar, 2001; Rostaldes et al., 2014).

4.3.2 Task design

Tasks in temporary organizations are formulated rather broadly, given the uncertainty in the environment and related need for swift adaptations (Andersen & Vidar, 2013; Danielsen, Valle & Stene, 2014). Utilising a strict boundary system by formulating and adhering to formal rules and

procedures does not enhance the well-functioning of temporary organizations, but rather hinder the necessary flexibility by creating excessive bureaucracy.

Instead, projects with a well-understood and convincing project vision enhance perceived project success (Rolstadas et al., 2014; Christenson & Walker, 2008). Typically, temporary organizations involve one or multiple 'umbrella' or parent organizations, who take responsibility for the formulation of a vision (Shenhar, 2001). Senior managers in parent companies tend to lead strategic shifts (Skilton. 2011) Thereby, it is important for managers in the parent organizations to "*back off from technical matters, developing instead a broader view of the industry, legal, environmental, and political issues*" (Shenhar, 2001, p.412). Operational and tactical regulation is thereby left to workers in temporary organizations, being in the position to improvise routines and "*interact within few and general formal procedures that emphasize roles and responsibilities*" (Andersen & Vidar, 2013, p.7). This autonomy has the potential to enhance contingent structuring mechanisms in response to crises (Li & Song, 2023).

In the absence of formal structuring mechanisms, teams develop shared mental models about the roles, functions and relations in temporary organizations (Danielsen et al., 2014). Role expectations can thereby be communicated through "*practices of enthusiastic thanking, polite admonishing, and role-oriented joking*" (Becky, 2006, p.16). If workers who develop a mental model about role expectations are subsequently part of multiple projects in the same industry, a role structure can appear to come into existence that appears to be stable (Becky, 2006).

Although general expectations about role behavior can be developed, workers in temporary organizations do not know "*exactly what will work, what elements will be crucial and what the end result will be. This requires coordinated experimentation and interpretation of ambiguous or incomplete data*" (Andersen & Vidar, 2013, p.5). An organic, flexible and decentralized structure allows for the inclusion of multiple perspectives and in turn stimulates reflection and learning (Wiewiora et al., 2019).

Task design to include multiple perspectives can stimulate learning within a project (Wiewiora et al., 2019; Danielsen et al., 2014), however learning between projects remains difficult in temporary organizations. To tackle this, top managers in parent organizations typically start "*leaning towards the adoption of control mechanisms based on hierarchy. This behavior is mostly*

dangerous in complex, knowledge-intensive settings […] in which open ended tasks risk to be restrained under top-down control" (Canonico & Söderlund, 2010, p.805).

Instead, stimulating learning and reflexivity by rotating functional roles within temporary organizations is more helpful (Danielsen et al., 2014; Skilton. 2011), as well as obliterating power differences and encouraging input and debate to promote an environment conductive to openness and sharing (Wiewiora et al., 2019). The importance of the role of top managers in parent organizations to stimulate learning between temporary organizations is established, however the way in which it is done is important factor to be considered.

4.3.3 Coordination

The environment of high uncertainty and the need for immediate problem-solving and direct action, makes it difficult to formulate codes of conduct and other rules and procedures (Hällgren & Maaninen-Olsson, 2009; Danielsen et al., 2014). These classical control tools and methods are not flexible and fast enough in the context of temporary organizations (Hällgren & Maaninen-Olsson, 2009).

By engaging in actions, also called mutual praxis, workers collaboratively build norms, values and rules (Hällgren & Maaninen-Olsson, 2009). They develop 'the way things are done' in collaboration and along the way, which is highly important in temporary organizations to overcome professional or knowledge boundaries between workers with diverse expertise (Fong, 2014). Shared mental models fulfill multiple functions in temporary organizations, including "a*llowing team members to interpret information in a similar manner (description), share expectations concerning future events (prediction), and develop similar causal accounts for a situation (explanation)*" (Danielsen et al., 2014, p.259).

Informal processes within a temporary organization provide impetus for the way in which the vision is realized. People trust that they can collaboratively interact to successfully tackle challenges in pursuit of the shared vision. Thereby, a shared working culture and mutual trust is ideally cherished (Canonico & Söderlund, 2010).

Enhancing trust means increasing the mutual belief that the actors in a temporary organization will favor actions and patterns of behavior in line with the vision. This is in temporary organizations with multiple parent companies done by careful selection of partners (Kucharska &

Kowalczyk, 2016). Rolstadas et al. (2014) show in multiple cases in the construction industry that partners were selected based on "*their perceived interest in complying with the principles […] and expressing commitment to them […]. The need to think 'no business as usual' drove this successful approach*" (Rolstadas et al., 2014, p.654-656). The approach taken is an adaptive one, with a principle-based contract form called 'integrated form of agreement'. This leaves sufficient leeway to adapt the specific goals and actions by doing (Rolstadas et al., 2014).

To ensure accurate and timely communication of goal or task adaptations to all team members, open and active lines of communication are at all times required (Danielsen et al., 2014; Wiewiora et al., 2019). Since it remains difficult to formulate specific goals for temporary organizations upfront, monitoring the progress towards achieving goals is also difficult. Communication about goal achievement in temporary organizations can include "*written information in the form of status reports, computer printouts, minutes, messages, and memos*" (Shenhar, 2001, p.403). However, most information flows are oral and informal. Workers find each other for interactions about problem solving and information sharing. Furthermore, a culture can arise in which team members "*are expected to share immediate information, and no one waited for the formal meetings and documents to report problems and difficulties*" (Shenhar, 2001, p.404). Thereby, the workers in temporary organizations believe that they can interact effectively to solve problems in order to benefit organizational outcomes and overall efficiency (Canonico & Söderlund, 2010).

The complexity and uncertainty in the environment of temporary organizations which require this high degree of alertness and adaptability, entail that *"simplistic, rational project management methods, tools, and techniques are not only inappropriate in [temporary organizations] but can also be counterproductive in terms of efficiency and effectiveness*" (Davies et al., 2011, p.10). Rather, informal communications and networks appear to be important for dealing with disturbances (Hällgren & Maaninen-Olsson, 2009; Hanisch et al., 2009; Shenhar, 2001; Wiewiora et al., 2019).

High levels of trust, flexibility, and tolerance from parent organizations with regards to actions of workers in temporary organizations are required to allow them for awareness of potential problems. Within a temporary organization with high awareness and responsiveness, the atmosphere was characterized as "*Look for trouble-it must be there; if you don't see it, you have*

a problem" (Shenhar, 2001, p.404). Teaching these principles and practicing their application entails striving for continuous improvement and requires the absence of judgement based on diagnostic control (Rostaldes et al., 2014).

Since it is unknown what will work to achieve the broadly formulated goals in temporary organizations, coordinated experimentation and trial-and-error learning is required (Andersen & Vidar Hanstad, 2013; Hällgren & Maaninen-Olsson, 2009). Therefore, a culture in which it is accepted to act and learn from mistakes is necessary. Cultural values centered around flexibility, experimentation, and risk-taking within temporary organizations are associated with highest learning outcomes (Hetemi et al., 2022; Wiewiora et al., 2019).

Both leaders and team members can contribute to creating such a learning oriented environment. Leaders can purposefully obliterate power differences and encourage input and debate to stimulate an open environment in which team members feel stimulated to raise concerns and discussions as learning opportunities (Wiewiora et al., 2019; Andersen & Vidar Hanstad, 2013). Leadership practices and informal rules in such an open environment "*support interactive routines that foster both reflection on, and reflection in, action that stimulate mutual challenging, sharing of experiences, a strong sense of shared responsibility for results and importance of relationships in applying, transferring and creating new knowledge*" (Andersen & Vidar Hanstad, 2013, p.7).

Team members can in turn stimulate collaborative learning by acknowledging and utilizing other member's perspectives and employing as well as stimulating a creative mindset (Hetemi et al., 2022). Thereby, building trust between members of a project team is key to enhance knowledge creation and sharing (Kucharska & Kowalczyk, 2016).

Although temporary organizations are aimed at achieving new objectives, difficult to specify a priori, the way in which learning processes take shape and general practices in project management can be similar in different temporary organizations. In such cases, stories and storytelling are effective modes of knowledge capture and sharing, to stimulate informal learning (Aramo-Immonen & Jussila, 2012). Workers engage in "*ongoing re-interpretations of culturally shared storylines*" (Aramo-Immonen & Jussila, 2012, p.53) and developing stories of new events as a learning process to maintain lessons learned.

Some lessons learned are captured in storytelling, but this is an organic and informal process. Creation, capture and transfer of knowledge can still benefit from deliberate efforts and incentives (Fong, 2014).

Examples of deliberate efforts for knowledge sharing in temporary organizations include applying an internal structure of networks, facilitating finding experts by appointing persons as responsible for certain knowledge areas and allowing other workers to search for a specific expertise (Hanisch et al., 2009). Other examples are boundary spanning objects to enhance collaboration across boundaries of temporary organizations (Hetemi et al., 2022). Finally, organizations can attempt to find, acknowledge and create legitimacy for a project liaison, who connects "*the formal processes and activities to the more informal using their extensive knowledge and tacit power to filter and reduce the information, and to support the dynamic problem solving through informal and spontaneous communication*" (Jacobsson, 2006, p.77).

4.3.4 Decision making

Decision making is decentralized in temporary organizations, given the ever-changing environment (Li & Song, 2023). Authority is typically delegated within broad limits with regard to time and budget (Canonico & Söderlund, 2010). Overall goals also function as limits on decision making, which are typically adjusted following a changing focus of attention by top management in parent organizations (Li & Song, 2023).

Cultures based on well-established standards and top-down decision making discourage workers from taking risks and challenging decisions, which are crucial in temporary organizations (Wiewiora et al., 2019). In contrast, cultural values in temporary organizations foster experimentation, trial-and-error learning, and risk-taking in decision making (Hällgren & Maanine-Olsson, 2009; Wiewiora et al., 2019).

Decision making in the context of dealing with disturbances and unexpected events is mostly done informally. It is recommended that "*the basic tenets of the project organizations are discussed and redefined by the team members through a constructive, participatory process*" (Danielsen et al., 2014, p.265).

Due to the occurrence of unexpected events, necessary adaptations, and hence the inability to formulate specific and measurable goals upfront, the project culture favors action (Wiewiora,

Smidt & Chang, 2019). Thereby, the focus is on "*immediate problem-solving and action, and only to a limited extent on proper decision-making procedures*" (Hällgren & Maanine-Olsson, 2009, p.61). Special software can keep track of decisions and changes to identify potential scenarios or future changes in the environment to assist in decision making (Shenhar, 2001).

Over time, regulations and standard operating procedures can become explicated given the temporary anarchical nature, however these regulations and standard operating procedures tend to be established only first after weeks of operations and are not as rigid as in permanent organizations (Li & Song, 2023; Rolstadas et al., 2014; Andersen & Vidar Hanstad, 2013). In the cases studied, "*participants were allowed to improvise them [regulations and standard operating procedures] when necessary*" (Li & Song, 2023, p.8)

4.3.5 Resources

Although it appears difficult and undesirable to formulate strict rules and standard operating procedures, there is an important boundary control system mentioned in nearly all studies on temporary organizations. It entails tight boundaries with regards to time and budget (Canonico & Söderlund, 2010; Andersen & Vidar Hanstad, 2013; Aramo-Immonen & Jussila, 2012). Authorities are delegated from parent organizations to temporary organizations, strongly decreasing interfaces and increasing regulatory capacity within temporary organizations. However, resource interdependencies between projects or temporary organizations from the same parent organizations are managed by limits with regard to time and budget (Canonico & Söderlund, 2010). These "*boundary systems are needed to avoid the risks of proliferation of project-level initiatives that are incoherent with the strategic focus of the [parent] organization*" (Canonico & Söderlund, 2010, p.804).

Diagnostic control systems in temporary organizations are only deemed helpful when they focus organizational attention on budgetary and time considerations, whilst allowing for timely intervention with corrective measures which workers in temporary organizations deem appropriate (Canonico & Söderlund, 2010).

Strict budgetary and time constraints are obstacles for knowledge management and learning in temporary organizations (Andersen & Vidar, 2013; Aramo-Immonen & Jussila, 2013; Hällgren & Maanine-Olsson, 2009; Skilton. 2011).

The main reason for advancing knowledge management by deliberate efforts is because temporary organizations do not have organizational memory once they cease to exist. If learning remains within a temporary organization, inter-project learning opportunities are missed (Wiewiora et al., 2019).

Leaders often view learning as a separate activity, for which time constraints are too strict (Aramo-Immonen & Jussila, 2013; Fong, 2014). Fong (2014) recommends a dual approach to project management is adopted, in which temporary organizations consider both short-term goals and constraints, as well as the long-term goal of learning within and between projects. Such learning is important even in the case of "*unique projects that are unlikely to be repeated in the future, because roles performed by individuals and the specific problems confronted by project teams are often similar in subsequent projects. For example, project risks can be managed more effectively before the start of a major new project by learning directly from managers who have dealt with similar risks encountered in previous projects*" (Davies et al., 2011, p.13). An interactive control system can be supported by collaborative use of repositories (Hetemi et al., 2022).

Given the non-hierarchical structure in temporary organizations, it is crucial that an interactive control system is stimulated by parent organizations, but also that individual workers push knowledge management (Hanisch et al., 2009) and stimulation of informal knowledge processes (Aramo-Immonen & Jussila, 2013).

5 Conclusion

In this chapter, the conclusion of this research is formulated by answering the research questions. The findings for each type of NHOS and a comparison are presented after which limitations are discussed.

5.1 Self-managing teams

Organizations with SMTs are ideally characterized by teams of 8-12 workers, who perform a complete process. There is no consideration of team size as an element for contingent design and implementation of a MCS by the included literature in this SLR. Performing a complete process is contingent with a stronger diagnostic control system. Performing a complete task enables workers to better interpret and act upon diagnostic information (Annosi et al., 2020a; Bitter et al., 2013; Johnson et al., 2013). Cross-functional tasks in multidisciplinary teams enhance interactive control within the team (Annosi et al., 2020a; Bitter et al., 2013; Johnson et al., 2013), requiring deliberate efforts to aggregate knowledge to other teams with whom there is a lack of interdependencies and hence interaction (Annosi et al., 2020a).

Coordination is performed by means of mutual adjustment (Thompson, 1967), for which a broad belief system with general goals and values functions as framework (Annosi et al., 2020a; Millward et al., 2010). Roles and responsibilities can be defined to a certain extent as a boundary system to prevent that continuous adjustment becomes necessary (Millward et al., 2010; Randolph & Sashkin, 2002), but avoiding a tight boundary system to sustain required flexibility (Martela, 2023). Monitoring the process by diagnostic control is required to allow for accurate mutual adjustment in case of disturbances (Annosi et al., 2020b; Millward et al., 2010), however, being aware of the risk that strict diagnostic control can reinforce repetitive behavior in a changing environment (Annosi et al.,2020b). Interactive control, stimulating a critical attitude, is enabled by shared leadership in mutual adjustment (Wang et al., 2017).

Decision making is decentralized in organizations with SMTs, for which a belief system with general goals and values also function as a framework (Bitter et al., 2013). Decisions about this general framework, for example the choice for SMTs as an organizational structure are often

made by a highly visible CEO, promoting the belief system (Giordan & Ahern, 1994; Martela, 2023). A boundary system with role definitions is also part of the framework governing decision making, ensuring workers know where to act with autonomy (Bitter et al., 2013; Randolph & Sashkin, 2002). It is for workers necessary to receive feedback to enable decision making in their spheres of autonomy (Bitter et al., 2013). Furthermore, decentralization of autonomy stimulates interactive control by the involvement of multiple perspectives, reflexivity, and constructive conflict (Annosi et al., 2020a; Bitter et al., 2013; Giordan & Ahern, 1994; Johnson et al., 2013; Millward et al., 2010; Randolph & Sashkin, 2002).

Both tangible and intangible resources are in organizations with SMTs ideally placed as close to the primary process as possible. A belief system with external customer focus is most suitable in this situation, rather than internal competition for resources (Giordan & Ahern, 1994). However, resources are not infinite. Constraints with regards to budgetary limits and customer demands function as a boundary system (Bitter et al., 2013). Time limitations are an obstacle to interactive control, since SMTs become more hesitant to engage in learning behaviors as deadlines draw nearer (Wang et al., 2017).

Findings about the contingent design and implementation of MCS in organizational structures with SMTs are summarized in Table 1.

SMTs	Belief system	Boundary system	Diagnostic control system	Interactive control system
Team size (8-12 workers)				
Task design (complete process)			Workers close to action are better able to interpret diagnostic information and have enhanced ability to act upon it.	Cross-functional complete tasks in multidisciplinary teams enable double-loop learning. Lack of interdependencies with other teams relates to lack of aggregation of knowledge.
Coordination (mutual adjustment)	Goals and values as framework for mutual adjustment.	Defined roles and responsibilities to prevent the need for continuous adjustment, however risk of decreasing flexibility.	Monitoring progress facilitates SMT to deal with disturbances, risk of repetitive behavior in a changing environment.	Shared leadership and active reflection to promote a critical attitude and foster learning.
Decision making (decentralization)	Goals and vision as framework for decision making. Visible CEOs decide on the implementation of SMTs.	Role definitions ensure workers to know where to act with autonomy.	Receiving feedback to enable decision making which positively affects performance.	Decentralization stimulates involvement of multiple perspectives, reflexivity and constructive conflict for double-loop learning.
Resources (close to primary process)	External customer focus rather than internal competition for effective leveraging of resources.	SMTs are constrained by budgetary limits and customer demands.		SMTs become more hesitant to engage in learning behaviors as deadlines draw nearer.

Table 1. Summary table SMTs.

5.2 Holacracy

Holacracy is characterized by circles with varying amounts of roles, and where workers can take on and relinquish roles relatively easily. A strong boundary system with well-defined roles enables workers to do so (Ackermann et al., 2021).

The organization in circles, each with a dedicated purpose, functions as a strong belief system (Ackermann et al., 2021). Roles and responsibilities within circles are described in detail in the constitution, which functions as a strong boundary system (Ackermann et al., 2021). Circles are required to run openly and democratically, allowing for interactive control by providing room for reflexivity in governance meetings (Cherman & Rocha-Pinto, 2016). Formalization of the procedure in tactical meetings creates a belief system in the environment of peer pressure (Ackermann et al., 2021).

Decision making is radically decentralized and democratic. The fixed structure of these meetings is intended to enhance interactive control by stimulating transparency and inclusion, structurally questioning information and assumptions (Ackermann et al., 2021; Cherman & Rocha-Pinto, 2016).

Understanding the framework, structure of meetings and well-defined roles is time consuming, hence a tight boundary system in terms of limited resources with regards to time is not helpful for the well-functioning of holacracy (Ackermann et al., 2021). Resource acquisition and deployment should be transparent in holacracy. Creating transparency with regards to all efforts made by individuals and responsibilities they have should enhance the contributions of all individuals to advance the organization (Ackermann et al., 2021).

Findings about the contingent design and implementation of MCS in holacracy are summarized in Table 2.

Holacracy	Belief system	Boundary system	Diagnostic control system	Interactive control system
Team size (differs)		Well-defined roles are easier to take on, adjust, and relinquish.		
Task design (roles)	Every circle has a dedicated purpose.	The constitution functions as a rulebook, describing all roles and responsibilities.		Circles are required to run openly and democratically, providing room for reflexivity in governance meetings.
Coordination (formalization)	Creating an environment of peer pressure in tactical meetings.			
Decision making (radical decentralization, democratic)				Fixed structure of meetings enhances transparency and stimulates inclusion, structurally questioning information and assumptions.
Resources (transparency)		Understanding the framework of well-defined roles is time consuming.		Contributions of all individuals are required to advance the organization.

Table 2. Summary table holacracy.

5.3 Temporary organizations

Temporary organizations are characterized by changing team composition and workers who are typically related to parent organizations. These parent organizations are often involved in setting norms as a belief system to facilitate group membership (Shenhar, 2001). To provide stability in changing group compositions, and for TEMPORARY ORGANIZATIONS being able to sustain progress, the implementation of PCDA cycles is suggested (Rostaldes et al., 2014).

Task design in temporary organizations entails a loose framework, given the inability to determine upfront exactly what activities are necessary to achieve desired outcomes (Andersen & Vidar, 2013; Danielsen, Valle & Stene, 2014). A well-understood vision, often set by parent organizations function as a belief system to guide action (Shenhar, 2001; Skilton, 2011). A relatively weak boundary system with broad tasks and without formal rules and procedures are contingent with the required flexibility (Andersen & Vidar, 2013; Hällgren & Maaninen-Olsson, 2009). General role expectations can be developed over time in projects that are relatively alike (Becky, 2006; Danielsen et al., 2014). It is recommended that temporary organizations refrain from boundary control systems given the risk of restraining open-ended tasks under top-down control (Canonico & Söderlund, 2010; Wiewiora et al., 2019). Rather, an interactive control system with job rotation, deliberate obliteration of power differences, and an open environment is conductive to reflexivity (Andersen & Vidar, 2013; Danielsen et al., 2014; Hanisch et al., 2009; Wiewiora et al., 2019).

Coordination is characterized by inclusion and enabling everyone to contribute diverse perspectives. Hence, a belief system is ideally collaboratively constructed (Danielsen et al., 2014; Fong, 2014). Careful selection of partners who share the same norms is desired (Rostaldes et al., 2014). Leeway to act in a boundary system is also required in the face of uncertainty (Canonico & Söderlund, 2010; Danielsen et al., 2014) and creating shared mental models can foster similar interpretations and hence ease coordination (Rostaldes et al., 2014). Communication and diagnostic control is mainly informal and oral, stimulating immediate information sharing (Canonico & Söderlund, 2010; Jacobsson, 2006; Shenhar, 2001). Knowledge can be captured in storytelling (Aramo-Immonen & Jussila, 2012) or interactive control can be stimulated by mutual challenging, trial-and-error learning (Andersen & Vidar, 2013; Kucharska & Kowalczyk, 2016; Li &

Song, 2023; Rolstadas et al., 2014; Wiewiora et al., 2019), as well as deliberate efforts of boundary spanners and identification of project liaison (Fong, 2014; Hetemi et al., 2022).

Decision making is characterized by a premium on action rather than processes of decision making. Therefore, a belief system with overall goals focusing attention and set by parent organizations is valued (Li & Song, 2023; Rostaldes et al., 2014; Wiewiora et al., 2019). The premium on action is contingent with a relatively weak boundary system, in which decision making is a constructive, collaborative process (Canonico & Söderlund, 2010; Danielsen et al., 2014; Hällgren & Maanine-Olsson, 2009; Li & Song, 2023). Regulations and operating procedures can become explicit over time, however not as rigid as in most organizations (Li & Song, 2023). Occurring changes and decisions made can be kept track of with software as a diagnostic tool to assist in the identification of potential changes in the environment (Shenhar, 2001). Learning is enhanced if the informal interactive control system fosters cultural values of experimentation, trial-and-error learning, and risk taking in decision making (Canonico & Söderlund, 2010; Hällgren & Maanine-Olsson, 2009; Wiewiora et al., 2019).

Temporary organizations are ideally characterized by adaptive use of resources. Time and budget constraints function as an important boundary system in temporary organizations (Canonico & Söderlund, 2010; Andersen & Vidar Hanstad, 2013; Aramo-Immonen & Jussila, 2012). Diagnostic control systems are considered helpful if it focuses attention on those constraints (Andersen & Vidar, 2013; Canonico & Söderlund, 2010; Fong, 2014; Rostaldes et al., 2014). Learning is often viewed as a separate activity, for which time and budgetary constraints are too strict (Aramo-Immonen & Jussila, 2013; Fong, 2014). A dual approach, balancing short- and long-term goals is suggested (Fong, 2014). Deliberate efforts of interactive control can include the use of repositories to support knowledge capture and transfer (Hetemi et al., 2022).

Findings about the contingent design and implementation of MCS in temporary organizations are summarized in Table 3.

Temporary organizations	Belief system	Boundary system	Diagnostic control system	Interactive control system
Team size (changing)	Parent organizations to which workers are related set norms to facilitate changing group memberships.		PDCA cycles can enable sustained progress in an open system with changing group compositions.	
Task design (loose framework)	A well-understood vision, often set by parent organizations, enhance performance	Broad task formulation, formal rules and procedures hinder required flexibility. General role expectations can be developed over time.	Risk of restraining open-ended tasks under top-down control.	Exactly what needs to be done is to be discovered along the way. Job rotation, obliterating power differences, and open environment conductive to knowledge sharing and reflexivity.
Coordination (inclusion)	Collaboratively building norms, values, and rules by engaging in actions. Careful selection of partners, fostering the same values.	Leeway in rules and procedures is required in the face of uncertainty. Creating shared mental models to foster similar interpretations.	Mainly informal and oral communication flows, stimulating immediate information sharing.	Organic storytelling, including different perspectives, stimulating mutual challenging, and trial-and-error learning as well as deliberate efforts of boundary spanners and identification of project liaison to capture and share lessons learned.
Decision making (action)	Top management in parent organizations can focus attention by setting and adjusting overall goals.	Favoring action over proper decision making procedures. Decision making as a constructive, participatory process. Regulations and operating procedures can become explicit over time, however they are not rigid.	Software can keep track of decisions and changes, assisting to identify potential changes in the environment.	Cultural values that foster experimentation, trial-and-error, and risk taking in decision making enhance learning.
Resources (adaptation)		Strict time and budgetary constraints.	Focusing attention on budgetary and time constraints.	Learning is often viewed as a separate activity, for which time and budgetary constraints are too strict. Suggesting a

				dual approach to project management, balancing short- and long-term goals. Repositories can support knowledge capture and transfer.

Table 3. Summary table temporary organizations.

5.4 Discussion

This SLR points out similarities and differences with regards to contingent design of MCS in different types of NHOS. Thereby, it validates the arguments that there is no one best way of organizing (Burnes, 1996). Different configurations of MCS fit better with certain types of NHOS (Chenhall, 2003; Merchant & Otley, 2006; Otley, 2016).

The characteristics of organizational structures with SMTs are contingent with a belief system with general goals and values and a boundary system with broadly formulated tasks. SMTs both allow for and require diagnostic control, but the downsides of strong diagnostic control are emphasized. Interactive control is enabled by performing a complete task, mutual adjustment and decentralization, however deliberate efforts are required for the aggregation of knowledge if resources, including time, are scarce.

The characteristics of holacracy are contingent with a formalized belief system, as well as a strict and formal boundary system, explicating all roles and responsibilities in detail. Interactive control is considered to logically follow from strict meeting procedures which stimulate structurally questioning information and assumptions. There is no consideration of diagnostic control in the included literature on holacracy in this SLR.

The characteristics of temporary organizations are contingent with a well-understood vision and belief system guided by parent organizations. A loose boundary system is required to provide workers with sufficient leeway in the face of uncertainty, however, time and budgetary constraints function as a necessary boundary system. A diagnostic control system is ideally informal and focuses attention on resource constraints. Interactive control is also ideally informal, fostering values of experimentation and trial-and-error. However, it appears more difficult given the resource constraints and temporary nature, therefore also demanding deliberate efforts and balancing short- and long-term goals.

In all three types of NHOS, it is confirmed that the levers of control are valuable in its own right, but only when implemented as a package, organizational empowerment and goal achievement will result (Malmi & Brown, 2008). To illustrate; holacracy takes the most formal approach to the design and implementation of MCS with focus on strict boundary control and formal efforts of interactive control. In literature on SMTs on the other hand, the importance of a balanced combination of levers of control is stressed, whilst in temporary organizations, the absence of levers of control or informal approach towards it is emphasized.

Thereby, this research extends the levers of control framework by Simons (1994) to include informal control mechanisms (Simons, 1995). Furthermore, it proves possible to apply the levers of control framework to operational levels, responding to the critique of Ferreira and Otley (2009).

5.4.1 Limitations and suggestions for future research

In addition to the aforementioned validations of contingency theory and contributions to the literature on MCS in NHOS, this research also has certain limitations to be taken into account when interpreting the findings and which provide avenues for future research.

Whereas this research provides insights into the contingent design of MCS in NHOS, it also shows that in the tabulations of literature on NHOS and MCS, several cells remain empty. This provides opportunities for future research. Also, research on MCS in holacracy is to be advanced, since only two articles on the intersection of these topics were found for this SLR. The same holds for anarchy in temporary organizations. It proved difficult to find articles on MCS in temporary anarchical organizations, including crisis response or military organizations.

Therefore, the scope of 'temporary organizations' was broadened in this research. In consultation with dr. Moorkamp, the decision was made to include project organizations, because most project organizations fit with the identified commonalities of temporary organizations, and project organizations are broadly studied (El-Sayegh et al., 2016).

The descriptions of types of NHOS in chapter 2 are ideal typical (Weber, 1987), hence the findings should be interpreted with care when applied to practice. Ideal typical characteristics are not exactly applicable to practice in the same way, since organizations adapt ideal typical NHOS to better fit in the specific environment (Achterbergh & Vriens, 2019; De Sitter, 1994).

Furthermore, the characteristics of NHOS in empirical articles included in this SLR are also not always ideal typical. For example, the recommendation to include PCDA-cylces to sustain progress (Rostales et al., 2014) fit better in temporary organizations where, compared to other non-hierarchical temporary organizations, overall goals are more specific and less uncertain.

Furthermore, data was coded based on the characteristics of NHOS and MCS as described in chapter 2. Inter-coder reliability was not established due to the fact that one researcher conducted this study and time and resource constraints impeded the involvement of others to establish inter-coder reliability. Time and resource constraints for this research also required demarcation of the categories, including Management, Business, and Business Finance. Future research can extend this SLR by establishing inter-coder reliability and including literature in other categories.

References

Ackermann, M., Schell, S., & Kopp, S. (2021). How Mercedes-Benz addresses digital transformation using Holacracy. *Journal of Organizational Change Management, 34*(7), 1285-1299.

Achterbergh, J. & Vriens, D. (2010). *Organizations: Social Systems Conducting Experiments (2nd revised ed.)*. New York: Springer.

Achterbergh, J. & Vriens, D. (2019). *Organizational Development: Designing Episodic Interventions (1st ed.)*. Abingdon, UK: Routledge.

Achua, C. F., & Lussier., R. N. (2010). Effective Leadership (4th ed.). Mason, USA: South-Western Cengage Learning.

Alvesson, M. andWillmott, H. (1992), "Critical theory and management studies: an introduction", in Alvesson, M. and Willmott, H. (Eds), *Critical Management Studies*, Sage, London, pp. 1-20.

Andersen, S. S., & Vidar Hanstad, D. (2013). Knowledge development and transfer in a mindful project-organization. *International Journal of Managing Projects in Business, 6*(2), 236-250.

Annosi, M. C., Monti, A., & Martini, A. (2020a). Individual learning goal orientations in self-managed team-based organizations: A study on individual and contextual variables. *Creativity and innovation management, 29*(3), 528-545.

Annosi, M. C., Martini, A., Brunetta, F., & Marchegiani, L. (2020b). Learning in an agile setting: A multilevel research study on the evolution of organizational routines. *Journal of Business Research, 110*, 554-566.

Aramo-Immonen, H., & Jussila, J. (2012, April). Storytelling as a factor in increasing intellectual capital of project-based companies. In *Proceedings of the 4th European Conference on Intellectual Capital* (pp. 53-59).

Argyris, C. (1977). Double loop learning in organizations. *Harvard business review, 55*(5), 115-125.

Argote, L. (1982). Input uncertainty and organizational coordination in hospital emergency units. *Administrative science quarterly*, 420-434.

Bechky, B. A. (2006). Gaffers, gofers, and grips: Role-based coordination in temporary organizations. *Organization science, 17*(1), 3-21.

Bedford, D. S., & Malmi, T. (2015). Configurations of control: An exploratory analysis.

Management Accounting Research, 27, 2-26.

Benders, J., Missiaen, C., & Van Hootegem, G. (2013). *De innovatieve arbeidsorganisatie in de zorg*.

Bernstein, E., Bunch, J., Canner, N., & Lee, M. (2016). Beyond the holacracy hype. *Harvard business review, 94*(7), 38-49.

Bitter, J., van Veen-Berkx, E., Gooszen, H. G., & van Amelsvoort, P. (2013). Multidisciplinary teamwork is an important issue to healthcare professionals. *Team Performance Management: An International Journal, 19*(5/6), 263-278.

Bruns, W. J., & Waterhouse, J. H. (1975). Budgetary control and organization structure. *Journal of accounting research*, 177-203.

Burnes, B. (1996). No such thing as… a "one best way" to manage organizational change. *Management decision, 34*(10), 11-18.

Burton, R.M., Obel, B. & Håkonsson, D.D. (2017). *Organizational Design: A step-by-step approach (3rd ed.).* Cambridge, UK: Cambridge University Press.

Canonico, P., & Söderlund, J. (2010). Getting control of multi-project organizations: Combining contingent control mechanisms. *International Journal of Project Management, 28*(8), 796-806.

Carrson, J., Tesluk, P., & Marrone, J. (2007). Shared Leadership in Teams: An Investigation of Antecedent Conditions and Performance. *Academy of Management Journal, 50*(5), 1217-1234.

Chapman, C. S. (1997). Reflections on a contingent view of accounting. *Accounting, organizations and society, 22*(2), 189-205.

Chenhall, R. H. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Accounting, organizations and society, 28*(2-3), 127-168.

Cherman, A., & Rocha-Pinto, S. R. D. (2016). Valuing of knowledge in organizations and its embedding into organizational practices and routines. *Revista Brasileira de Gestão de Negócios, 18*, 416-435.

Christensen, C.M., Grossman, J.H., & Hwang, J. (2009). *The innovator's prescription: A disruptive solution for health care*. New York: McGraw Hill.

Christenson, D. and Walker, D.H.T. (2008), Using vision as a critical success element in project

management, *International Journal of Managing Projects in Business, 1*(4), pp. 611-622.

Conaty, F., & Robbins, G. (2021). A stakeholder salience perspective on performance and management control systems in non-profit organisations. *Critical perspectives on accounting, 80*, 102052.

Cooper, H. M. (1988). Organizing knowledge syntheses: A taxonomy of literature reviews. *Knowledge in society, 1*(1), 104.

Csar, M. (2017). Holacracy: Heilsbringer für die Organisation der Zukunft oder gut verkauftes Rollenspiel? *Zeitschrift für Angewandte Organisationspsychologie (GIO), 48*, 155-158.

Danielsen, B. E., Valle, R. K., & Stene, T. M. (2014). Exploring the impact of mental models on teamwork and project performance. *Volume One*, 258.

Davies, A., Brady, T., Prencipe, A., & Hobday, M. (2011). *Innovation in complex products and systems: implications for project-based organizing*. In Project-based organizing and strategic management (Vol. 28, pp. 3-26). Emerald Group Publishing Limited.

De Geus, M. (2014). Peter Kropotkin's anarchist vision of organization. *Ephemera, 14*(4), 859.

De Sitter, L.U. (1994). *Synergetisch produceren: human resources mobilisation in de produktie. Een inleiding in structuurbouw*. Assen, the Netherlands: Van Gorcum.

De Sitter, L. U., Den Hertog, J. F., & Dankbaar, B. (1997). From complex organizations with simple jobs to simple organizations with complex jobs. *Human relations, 50*(5), 497-534.

De Wit, B. (2019). *Strategy: An international perspective (6th ed.)*. Hampshire, UK; Ashford Colour Press Ltd.

Dijksma, J., & Welten, T. J. M. (1998). *Management accounting en sociotechniek* [Paper]. 10th fMA-Congress; Rotterdam, The Netherlands.

Dixon-Woods, M. (2011), "Systematic reviews and qualitative methods", in Silverman, D. (Ed.), *Qualitative Research. Issues of Theory, Method and Practice (3rd ed.).* Sage, London, pp. 331-346.

Donadelli, F. M., Luczak-Roesch, M., Fischer, R., & Li, N. (2023). Evidence-inclusive communication: steering crisis leadership outcomes in Portugal, Brazil, New Zealand, and the US. *International Review of Public Administration, 28*(3), 380-401.

Drabek, T. L., & McEntire, D. A. (2002). Emergent phenomena and multiorganizational

coordination in disasters: Lessons from the research literature. *International Journal of Mass Emergencies & Disasters, 20*(2), 197-224.

Durden, C. (2008). Towards a socially responsible management control system. *Accounting, Auditing & Accountability Journal, 21*(5), 671-694.

El-Sayegh, S. M., Kashif, M., Al Sharqawi, M., Nikoula, N., & Alhimairee, M. (2016). Significant factors affecting the size and structure of project organizations. In *2016 International Conference on Industrial Engineering, Management Science and Application* (ICIMSA) (pp. 1-5). IEEE.

Emery, F. E., & Trist, E. L. (1965). The causal texture of organizational environments. *Human relations, 18*(1), 21-32.

Englehardt, C. S., & Simmons, P. R. (2002). Organizational flexibility for a changing world. *Leadership & Organization Development Journal, 23*(3), 113-121.

Farkhondeh, M., & Müller, B. (2021). Holacracy. *Management Revue, 32*(4), 302-317.

Ferreira, A., & Otley, D. (2009). The design and use of performance management systems: An extended framework for analysis. *Management accounting research, 20*(4), 263-282.

Fiedler, F. E. (1964). A contingency model of leadership effectiveness. In *Advances in experimental social psychology (Vol. 1, pp. 149-190).* Academic Press.

Fong, P. S. (2014). *Can we learn from our past? Managing knowledge within and across projects*. In Knowledge Management (pp. 218-240). Routledge.

Galbraith, J. R. (1977). *Organization design*. London, UK: Addison-Wesley.

Giordan, J. C., & Ahern, A. M. (1994). Self-managed teams: quality improvement in action. *Research-Technology Management, 37*(3), 33-37.

Gould, M. & Quinn, J. J. (1993). *Strategic control: establishing milestones for long-term performance*. Reading, MA: Addison-Wesley.

Graham, J. R. (2008). *Leadership and change in a crisis organization: An exploratory analysis of the relationship between leadership style and employee perception*. Capella University.

Gupta, A., & Jena, L. K. (2023). “Respect my authority”: Spiritual self-managed teams and holacracy. *Management Research: Journal of the Iberoamerican Academy of Management*.

Hadida, A., Tarvainen, W., & Rose, J. (2015). Organizational improvisation: A consolidation review and framework. *International Journal of Management Reviews*, *17*(4), 437–459.

Hällgren, M., & Maaninen-Olsson, E. (2009). Deviations and the breakdown of project management principles. *International Journal of Managing Projects in Business, 2*(1), 53-69.

Hanisch, B., Lindner, F., Mueller, A., & Wald, A. (2009). Knowledge management in project environments. *Journal of knowledge management, 13*(4), 148-160.

Harkema, L. (2021). The influence of contextual factors on the functioning of self-managing teams in healthcare organizations. Retrieved from: theses.ubn.ru.nl

Hetemi, E., Pushkina, O., & Zerjav, V. (2022). Collaborative practices of knowledge work in IT projects. *International Journal of Project Management, 40*(8), 906-920.

Hofstede, G. (1981). Management control of public and not-for-profit activities. *Accounting, Organizations and society, 6*(3), 193-211.

Jackson, G. (1980). Methods for integrative reviews. *Review of Educational Research, 50*, 438-460.

Johnson, M. D., Hollenbeck, J. R., DeRue, D. S., Barnes, C. M., & Jundt, D. (2013). Functional versus dysfunctional team change: Problem diagnosis and structural feedback for self-managed teams. *Organizational Behavior and Human Decision Processes, 122*(1), 1-11.

Kaduthanam, S., & Heim, E. (2019). Holacracy bei Labster. *Digitalisierung in der Praxis: So schaffen KMU den Weg in die Zukunft*, 311-323.

Kalkman, J. P. (2023). Radical and Swift Adaptive Organizing in Response to Unexpected Events: Military Relief Operations after Hurricane Dorian. *Academy of Management Discoveries, 9*(4), 497-524.

Kalmus, H., Vochozka, M., & Formánek, I. (2023). Organizational design based on Holacracy as a source of competitive advantage. *Entrepreneurship and Sustainability Issues, 11*(2), 349-362.

Khoury, M. E., Jaouen, A., & Sammut, S. (2024). The liberated firm: An integrative approach involving sociocracy, holacracy, spaghetti organization, management 3.0 and teal organization. *Scandinavian Journal of Management, 40*(1), 101312.

Kramer, E. H., & Moorkamp, M. (2019). Reflective practice in synthetic expeditionary task forces. *NL ARMS Netherlands Annual Review of Military Studies 2019: Educating Officers: The Thinking Soldier-The NLDA and the Bologna Declaration*, 97-114.

Kramer, E. H., Moorkamp, M., & Visser, M. (2020). Learning to organize and organizing to learn: the case of Dutch military expeditionary task forces. *The Learning Organization, 28*(3), 270-282.

Kucharska, W., & Kowalczyk, R. (2016). Trust, collaborative culture and tacit knowledge sharing in project management–A relationship model. *Kucharska, W., & Kowalczyk*, 159-166.

Kuipers, H., & van Amelsvoort, P. (1990). *Slagvaardig organiseren: Inleiding in de sociotechniek als integrale ontwerpleer*. Deventer, The Netherlands: Kluwer Bedrijfswetenschappen.

Kuipers, H., Van Amelsvoort, P., & Kramer, E. H. (2020). *Het nieuwe organiseren: Alternatieven voor de bureaucratie (4th ed.)*. Leuven, Belgium: Acco.

Kumar S, V., & Mukherjee, S. (2018). Holacracy–the future of organizing? The case of Zappos. *Human Resource Management International Digest, 26*(7), 12-15.

Lambert, L. (2002). A framework for shared leadership. *Educational leadership, 59*(8), 37-40.

Land, C., & King, D. (2014). Organizing otherwise: Translating anarchism in a voluntary sector organization. *Ephemera: Theory & Politics in Organisation, 14*(4), 923-950.

Langfield-Smith, K. (1997). Management control systems and strategy: a critical review. *Accounting, organizations and society, 22*(2), 207-232.

Lanzara, G. F. (1983). Ephemeral organizations in extreme environments: Emergence, strategy, extinction. *Journal of Management Studies, 20*(1), 71-95.

Lee, M. Y., & Edmondson, A. C. (2017). Self-managing organizations: Exploring the limits of less-hierarchical organizing. *Research in organizational behavior, 37*, 35-58.

Li, Y., & Song, Y. (2023). How temporary organisations manage flexibility in times of crises? Experiences of a Chinese control command in response to COVID-19. *Journal of Contingencies and Crisis Management, 31*(2), 249-258.

Lies, J. (2020), "Imagining Niklas Luhmann as a 'change manager': scrum as an example of a closed system for the self-organized stabilization of corporate agility", *Journal of Organizational Change Management, Vol. 33* (7), 1417-1429.

Mainga, W. (2017). Examining project learning, project management competencies, and project efficiency in project-based firms (PBFs). *International Journal of Managing Projects in Business, 10*(3), 454-504.

Malmi, T., & Brown, D. A. (2008). Management control systems as a package—Opportunities,

challenges and research directions. *Management accounting research, 19*(4), 287-300.

Martela, F. (2023). Managers matter less than we think: how can organizations function without any middle management? *Journal of Organization Design, 12*(1), 19-25.

Massaro, M., Dumay, J., & Guthrie, J. (2016). On the shoulders of giants: undertaking a structured literature review in accounting. *Accounting, Auditing & Accountability Journal, 29*(5), 767-801.

Mellahi, K., & Wilkinson, A. (2004). Organizational failure: a critique of recent research and a proposed integrative framework. *International Journal of Management Reviews, 5*(1), 21-41.

Merchant, K. A. (1987). How and why firms disregard the controllability principle. *Accounting and management: Field study perspectives*, 316-338.

Merchant, K. A., & Otley, D. T. (2006). A review of the literature on control and accountability. *Handbooks of management accounting research, 2*, 785-802.

Merchant, K. A., & Van der Stede, W. A. (2007). *Management control systems: performance measurement, evaluation and incentives*. Pearson education.

Millward, L. J., Banks, A., & Riga, K. (2010). Effective self-regulating teams: a generative psychological approach. *Team Performance Management: An International Journal, 16*(1/2), 50-73.

Minnaar, R., & van Vondelen, S. (2022). Control in holacratische organisaties: een verkennend onderzoek naar de controlmechanismen achter zelfsturing. *Maandblad voor Accountancy en Bedrijfseconomie, 96*(5/6), 133-143.

Mintzberg, H. (1980). Structure in 5's: A Synthesis of the Research on Organization Design. *Management Science, 26*(3), 322-341.

Mongeon, P., & Paul-Hus, A. (2016). The journal coverage of Web of Science and Scopus: a comparative analysis. *Scientometrics, 106*, 213-228.

Moorkamp, M. (2018). *Operating under high-risk conditions in temporary organizations: A sociotechnical systems perspective*. New York, US: Routledge.

Nadler, D. A., & Tushman, M. L. (1997). *Competing by design: The power of organizational architecture*. New York, US: Oxford University Press.

Nijholt, J. J., & Benders, J. (2007). Coevolution in management fashions: The case of self-managing teams in The Netherlands. *Group & Organization Management, 32*(6), 628-652.

Randolph, W. A., & Sashkin, M. (2002). Can organizational empowerment work in multinational settings? *Academy of Management Perspectives, 16*(1), 102-115.

Rapp, M. S., Schellong, D., Schmidt, M., & Wolff, M. (2011). Considering the shareholder perspective: value-based management systems and stock market performance. *Review of Managerial Science, 5*, 171-194.

Renkema M., Bondarouk, T., & Bos-Nehles, A. (2018). Transformation to self-managing teams: lessons learned: A look at current trends and data. *Strategic HR Review 17*(2),81-84.

Robertson, B. J. (2015). *Holacracy: The revolutionary management system that abolishes hierarchy*. London, UK; Penguin.

Rolstadas, A., Tommelein, I., Morten Schiefloe, P., & Ballard, G. (2014). Understanding project success through analysis of project management approach. *International journal of managing projects in business, 7*(4), 638-660.

Schell, S., & Bischof, N. (2022). Change the way of working. Ways into self-organization with the use of Holacracy: An empirical investigation. *European management review, 19*(1), 123-137.

Schreuder, F., Schalk, R., & Batistič, S. (2023). Goal congruence in teams and performance: The role of (shared) psychological contract fulfilment. *Journal of Management & Organization, 29*(1), 86-102.

Schumacher, E. F. (1973). *Small is beautiful: Economics as if people mattered*. London, UK: Vintage Books

Shenhar, A. J. (2001). One size does not fit all projects: Exploring classical contingency domains. *Management science, 47*(3), 394-414.

Simons, R. (1994). How new top managers use control systems as levers of strategic renewal. *Strategic management journal, 15*(3), 169-189.

Simons, R. (1995). Control in an age of empowerment. *Harvard business review, 73*(2), 80-88.

Van Amelsvoort, P. (1994). *Zelfsturende teams, ontwerpen, invoeren en begeleiden*. Oss, The Netherlands: ST-groep.

Wang, L., Han, J., Fisher, C. M., & Pan, Y. (2017). Learning to share: Exploring temporality in shared leadership and team learning. *Small Group Research, 48*(2), 165-189.

Weber, M. (1978). *Economy and Society: An Outline of Interpretive Sociology*. Berkeley, California:

University of California Press.

Weirauch, L., & Galliker, S. (2023). Holacracy, a modern form of organizational governance predictors for person-organization-fit and job satisfaction. *Frontiers in psychology, 13*, 1021545.

Wiewiora, A., Smidt, M., & Chang, A. (2019). The 'how'of multilevel learning dynamics: A systematic literature review exploring how mechanisms bridge learning between individuals, teams/projects and the organization. *European Management Review, 16*(1), 93-115.

Williams, D. M. (2018). Contemporary anarchist and anarchistic movements. *Sociology compass, 12*(6), e12582.

Zimmerman, J.L. (2020). *Accounting for Decision Making and Control (10th ed.)*. New York, USA; McGraw-Hill Education

1 # Appendix 1 – Included articles

#	Author(s)	Title	Year	Source
SMTs				
004	Annosi et al.	Learning in an agile setting: A multilevel research study on the evolution of organizational routines	2020b	Journal of Business Research
005	Annosi, Monti & Martini	Individual learning goal orientations in self-managed team-based organizations: A study on individual and contextual variables	2020a	Creativity and Innovation Management
007	Bitter et al.	Multidisciplinary teamwork is an important issue to healthcare professionals	2013	Team Performance Management: An International Journal
016	Giordan & Ahern	Self-managed teams: quality improvement in action	1994	Research-Technology Management
019	Johnson et al.	Functional versus dysfunctional team change: Problem diagnosis and structural feedback for self-managed teams	2013	Organizational Behavior and Human Decision Processes
025	Martela	Managers matter less than we think: how can organizations function without any middle management?	2023	Journal of Organization Design
028	Millward, Banks & Riga	Effective self-regulating teams: a generative psychological approach	2010	Team Performance Management: An International Journal
032	Randolph & Sashkin	Can organizational empowerment work in multinational settings?	2002	Academy of Management Perspectives
041	Wang et al.	Learning to Share: Exploring Temporality in Shared Leadership and Team Learning	2017	Small Group Research
Holacracy				
101	Ackermann, Schell & Kopp	How Mercedes-Benz addresses digital transformation using Holacracy	2021	Journal of Organizational Change Management
102	Cherman & Rocha-Pinto	Valuing of knowledge in organizations and its embedding into organizational practices and routines	2016	Revista Brasileira de Gestão de Negócios
Temporary organizations				
204	Andersen & Vidar Hanstad	Knowledge development and transfer in a mindful project-organization	2013	International Journal of Managing Projects in Business
208	Aramo-Immonen & Jussila	Storytelling as a factor in increasing intellectual capital of project-based companies	2012	Proceedings of the 4th European Conference on Intellectual Capital
213	Bechky	Gaffers, gofers, and grips: Role-based coordination in temporary organizations	2006	Organization science
226	Canonico & Söderlund	Getting control of multi-project organizations: Combining contingent control mechanisms	2010	International Journal of Project Management

233	Danielsen, Valle & Stene	Exploring the impact of mental models on teamwork and project performance	2014	Volume One
243	Fong	Can we learn from our past? Managing knowledge within and across projects	2014	Knowledge Management
256	Hällgren & Maanine-Olsson	Deviations and the breakdown of project management principles	2009	International Journal of Managing Projects in Business
258	Hanisch et al.	Knowledge management in project environments	2009	Journal of Knowledge Management
263	Hetemi, Pushkina & Zerjav	Collaborative practices of knowledge work in IT projects	2022	International Journal of Project Management
269	Jacobsson	On the importance of liaisons for coordination of projects	2006	International Journal of Managing Projects in Business
283	Kucharska & Kowalczyk	Trust, collaborative culture and tacit knowledge sharing in project management–A relationship model	2016	Kucharska & Kowalczyk
287	Li & Song	How temporary organisations manage flexibility in times of crises? Experiences of a Chinese control command in response to COVID-19	2023	Journal of Contingencies and Crisis Management
328	Rolstadas et al.	Understanding project success through analysis of project management approach	2014	International Journal of Managing Projects in Business
332	Shenhar	One size does not fit all projects: Exploring classical contingency domains	2001	Management science
334	Skilton	Innovation in complex products and systems: implications for project-based organizing	2011	Project-based organizing and strategic management
357	Wiewiora, Smidt & Chang	The 'how' of multilevel learning dynamics: A systematic literature review exploring how mechanisms bridge learning between individuals, teams/projects and the organization	2019	European Management Review

1

2

Appendix 2 – Tabulated quotations

SMTs	Belief system	Boundary system	Diagnostic control system	Interactive control system
Team size (8-12 workers)				
Task design (complete process)			Annosi et al., 2020a, p.11; Bitter et al., 2013, p.267; p.273; Johnson et al., 2013, p.1	Annosi et al., 2020a, p.2; p.11; Bitter et al., 2013, p.268; p.274; Johnson et al., 2013, p.1
Coordination (mutual adjustment)	Annosi et al., 2020a, p.2; p.9; Millward et al., 2010, p.4	Martela, 2023, p.24; Millward et al., 2010, p.7; Randolph & Sashkin, 2002, p.104	Annosi et al., 2020b, p.539; Bitter et al., 2013, p.267; Martela, 2023, p.21;	Annosi et al., 2020a, p.1; Millward et al., 2010, p.15; Wang et al., 2017, p.2; p.5
Decision making (decentralization)	Bitter et al., 2013, p.273; Giordan & Ahern, 1994, p.1; Martela, 2023, p.20	Bitter et al., 2013, p.273; Randolph & Sashkin, 2002, p.104	Bitter et al., 2013, p.269; p.272	Annosi et al., 2020a, p.1; Bitter et al., 2013, p.273; Giordan & Ahern, 1994, p.4; Johnson et al., 2013, p.1; Millward et al., 2010, p.15; p.17; p.22; Randolph & Sashkin, 2002, p.104
Resources (close to primary process)	Giordan & Ahern, 1994, p.2	Bitter et al., 2013, p.273		Wang et al., 2017, p.6

Holacracy	Belief system	Boundary system	Diagnostic control system	Interactive control system
Team size (differs)		Ackermann et al., 2021, p.1287		
Task design (roles)	Ackermann et al., 2021, p.1290; 1291	Ackermann et al., 2021, p.1287		Cherman & Rocha-Pinto, 2016, p.431
Coordination (formalization)	Ackermann et al., 2021, p.1288			
Decision making (radical decentralization, democratic)				Ackermann et al., 2021, p.1288; Cherman & Rocha-Pinto, 2016, p.432
Resources (transparency)		Ackermann et al., 2021, p.1293		Ackermann et al., 2021, p.1286;1288

Temporary organizations	Belief system	Boundary system	Diagnostic control system	Interactive control system
Team size (changing)	Shenhar, 2001, p.405		Rostaldes et al., 2014, p.643	
Task design (loose framework)	Shenhar, 2001, p.405; 412; Skilton. 2011, p.18	Andersen & Vidar, 2013, p.7; Becky, 2006, p.3; p.9; p.16; Canonico & Söderlund, 2010, p.259; p.263; p.265; Danielsen et al., 2014, p.259; p.263; p.265; Hällgren & Maanine-Olsson, 2009, p.63; Li & Song, 2023, p.8	Canonico & Söderlund, 2010, p.805; Wiewiora et al., 2019, p.29	Andersen & Vidar, 2013, p5; p.13; Canonico & Söderlund, 2010, p.264; Danielsen et al., 2014, p.264; Hanisch et al., 2009, p.158; Wiewiora et al., 2019, p.19; p.21
Coordination (inclusion)	Canonico & Söderlund, 2010, p.803; Danielsen et al., 2014, p.259; Rostaldes et al., 2014, p.654; p.656; Fong, 2014, p.222; Hällgren & Maanine-Olsson, 2009, p.63; Shenhar, 2001, p.404	Canonico & Söderlund, 2010, p.804; Danielsen et al., 2014, p.259; p.265; Rostaldes et al., 2014, p.655	Canonico & Söderlund, 2010, p.803; Jacobsson, 2006, p.75; p.77; Rostaldes et al., 2014, p.651; Shenhar, 2001, p.403; p.404; Wiewiora et al., 2019, p.18-19	Andersen & Vidar, 2013, p.7; Danielsen et al., 2014, p.264; Fong, 2014, p.204; Hanisch et al., 2009, p.153; Hetemi et al., 2022, p.908; p.912; p.915; p.916; Kucharska & Kowalczyk, 2016, p.1; Li & Song, 2023, p.2; Rostaldes et al., 2014, p.651; Skilton. 2011, p.13; Wiewiora et al., 2019, p.15-16; p.19; p.26; p.28
Decision making (action)	Li & Song, 2023, p.2; p.9; Rostaldes et al., 2014, p.656; Wiewiora et al., 2019, p.17	Canonico & Söderlund, 2010, p.797; Danielsen et al., 2014, p.265; Hällgren & Maanine-Olsson, 2009, p.65; Li & Song, 2023, p.2; p.8	Shenhar, 2001, p.406	Canonico & Söderlund, 2010, p.804; Hällgren & Maanine-Olsson, 2009, p.56; p.61; p.63; Wiewiora et al., 2019, p.15-16; p.17
Resources (adaptation)		Andersen & Vidar, 2013, p.3; Canonico & Söderlund, 2010, p.797; p.803	Andersen & Vidar, 2013, p.3; Canonico & Söderlund, 2010, p.804; Fong, 2014, p.204; p.222; Rostaldes et al., 2014, p.643	Andersen & Vidar, 2013, p.3; p.6; p8; Aramo-Immonen & Jussila, 2013, p.53; p.58; Canonico & Söderlund, 2010, p.264; Danielsen et al., 2014, p.264; Fong, 2014, p.204; p.217; p.222; p.223; Hällgren & Maanine-Olsson, 2009, p.63; p.65; Hetemi et al., 2022, p.916; Kucharska &

				Kowalczyk, 2016, p.1; p.5; Skilton. 2011, p.12; p.13; Wiewiora et al., 2019, p.17; p.22

1