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Implementing Self-Managing Teams in Organizations: A Systematic Review of Best Practices and Evolution

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Abstract. This systematic literature review aims to identify best practices for implementing self-managing teams (SMTs) in organizations. Following the PRISMA framework, the author searched Web of Science and Scopus databases and analyzed the findings using a machine learning tool and Leavitt's organizational model. The review included 35 empirical studies across various industries and periods. The findings highlight vital recommendations and practices across the dimensions of structure, goals, participants, and technology, as well as the phases of pre-implementation, implementation, and post-implementation. The review reveals the evolution of SMTs from an initially "empty method" to a more complex framework that integrates with agile methodologies. The author identifies research gaps, such as the limited attention to technological factors, and provides recommendations for future research and practice. The findings can inform organizations seeking to adopt SMTs and complement existing agile frameworks. However, the review is limited by the reliance on qualitative studies and the potential for publication bias.

Keywords: self-managing teams, autonomy, implementation best practices, agile methods, empowerment

1. Introduction

1.1. Phenomenon Introduction

Although the phenomenon of self-managing teams (also called autonomous teams) has been with us for more than fifty years, both in research and in practice, the demand for introducing and deepening the knowledge of this managerial method continues unabated (Doblinger, 2022; Renkema et al., 2020; Trist et al., 1977). The basic definition of self-managing or autonomous teams (SMTs) is defined in the literature as "groups of interdependent individuals that can self-regulate their behavior on relatively whole tasks" (Cohen et al., 1996, p. 644) and can also be described as a group of professionals with authority to organize their tasks, make decisions, and solve problems relatively independently within defined boundaries. It is characterized by collective responsibility, shared goals, and limited external supervision (Druskat & Wheeler, 2004; Weerheim et al., 2019). Most studies define their own definitions, for which a common core and additional emphasis on additional characteristics can be found, as outlined in the examples in Figure 1.

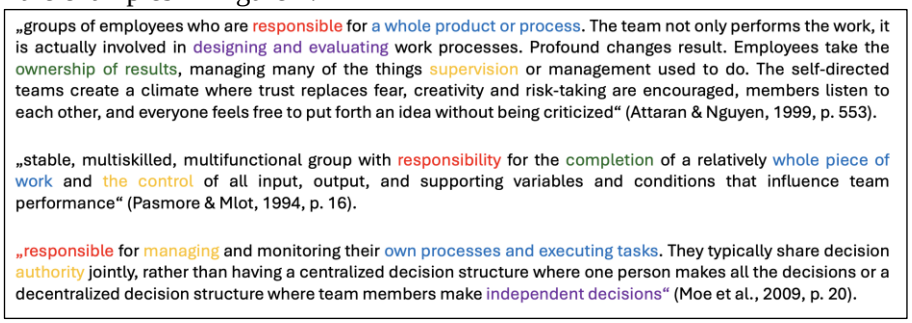


Fig. 1: SMT definitions and their relations.

There are still visible changes in the organizational design of companies and public institutions toward more egalitarian regimes that often use the concept of self-managing teams (Carroll et al., 2020; Mohagheghi & Lassenius, 2021). However, recently, they have been utilized mainly as part of a broader organizational change, typically agile transformation, and no longer as an isolated implementation of SMT, as was the convention before (Carroll et al., 2020; Spreitzer et al., 1999).

The relevance of the topic is also increasing due to the events of recent years that have increased the demand for autonomous models in organizations, including the consequences of the global economic crisis in 2008, which represented a disillusionment of people's trust in central authorities and other intermediaries represented by managers (De Filippi et al., 2020). This and other influences are increasing the call for organizational changes that shift rights, responsibilities, and power from management to rank-and-file employees in the way self-managed teams do. At the same time, they are associated with expectations of organizations to increase their ability to respond to the increasing intensity of change in a competitive marketplace, to increase productivity, and to improve job satisfaction, customer satisfaction, and other key indicators, especially for commercial entities (Hamm & Glyn-Jones, 2019; Luis Alves Pais, 2010; Parker et al., 2015).

1.2. Importance of the Topic

The transition to autonomous teams represents a radical change in an organization that typically affects many areas of a company's operations (Mohagheghi & Lassenius, 2021). It is often a transition away from traditional management structures represented by hierarchical management (Kirkman & Shapiro, 1997). Therefore, it is not surprising that these changes fail in some cases, which raises the need to answer the critical question of what are the most effective strategies for implementing self-managed teams in organizations to maximize the intended benefits of an organization listed in the previous paragraph effectively (Moe et al., 2009; Neubert, 1999).

Although there are already other systematic literature reviews on the phenomenon of self-managing teams, none of them focuses on its implementation, and its overwhelming focus is on the impact on

performance (Doblinger, 2022; Magpili & Pazos, 2018). This study addresses a critical gap in the literature by focusing on the implementation phase of self-managed teams (SMTs), which is complex and prone to failure but has been under-researched in existing reviews. This review provides a structured and comprehensive view of the basic approaches to successful SMT implementation by reviewing best practice articles and identifying epicentres of threats and related effective strategies. It helps organizations navigate the complexities of the process.

1.3. Scope of the Review

The review aims to provide readers with a comprehensive concept of best practices that should help an organization successfully implement self-managing teams. Since the research question is phrased as "how", naturally, most research dealing with implementation success is qualitative and typically based on a few cases (Druskat & Wheeler, 2004; Wageman, 2001). Given the prevailing qualitative design, validating these research conclusions by comparing them to each other through a systematic literature review makes all the more sense.

The study focuses on empirical studies of the implementation of autonomous teams in the enterprise, excluding experiments in non-organizational contexts such as separate environments of an experiment. The review does not limit the industry sector or company size, including start-ups and corporations or company departments, as well as IT and non-IT departments. It covers all available temporal scope of journal articles and conference papers from Scopus and Web of Science to provide a multi-criteria review of the relevant research. The review attempts to bring data from various cultural contexts and locations, even though this may be partially restricted by a focus on English publications about this phenomenon and draw concentrated output serving companies implementing autonomous teams.

1.4. Aimed Purpose

The paper aims to suggest strategies to increase the success of this organizational change, which also manifests as minimizing the risks associated with the implementation of autonomous teams, whether a manufacturing company or a hospital chooses to implement it. The research question is framed as “How to optimally implement self-managing teams in an organization, aiming to increase their ability to respond to changes, increase performance, and improve job and customer satisfaction?“ At the same time, most of the findings in this area come from qualitative research and isolated cases, so their transferability to other organizational contexts has yet to be considered, in which a cross-research view using SLR can help. As a review, it also answers whether the conclusions regarding the recommended ways to implement self-managing teams are consistent. Whether and how their implementation varies over time.

The review uses H. Leavitt's model as a theoretical framework because it provides a valuable optic for examining and organizing the multifaceted strategies of SMT implementation. Specifically, it allows for a systematic categorization and analysis of how different best practices affect and interact with organizational structure, technologies used, tasks performed, and people involved. It also helps to identify synergies and potential conflicts between practices, leading to more nuanced recommendations for effective SMT implementation (Leavitt, 1965).

2. Methodology

This literature review attempts to answer the research question of how to implement self-managing teams in an organization optimally. The intended approach to responding to the question is to derive knowledge from existing empirical research through a systematic literature review because it is possible to draw on a broad base of research in this area, but the links and differences in their implementation and evolution over time are not clear and discussed (Trist et al., 1977).

The data collection is based on the two most significant frequently updated databases of relevant scientific publications, Web of Science and Scopus (Falagas et al., 2008). The searched keywords expressing the management method included “self-managing teams”, “autonomous teams”, and “self-

managing work teams". These keywords expressing the phenomenon were combined with a second keyword expressing the implementation process, connected by AND. Specifically, these synonyms were utilized: "implementation", "deployment", "transition", "transformation", "application", "developing", and "adopting". For example, "self-managing teams" AND "implementation". As named by the PRISMA framework (2020), which was followed, this identification phase generated more than 322 findings[1]of journal articles or conference papers (Page et al., 2021). The results were exported into a table file for the analytical phase.

The data analysis started with the elimination of duplicates using MS Excel. The results of the keyword database searches[2] were then cleaned from 89 duplicates based on title and DOI. Then, a machine learning tool, AS Review, is an open-source software created to help researchers specify relevant articles. It assesses the relevance by considering data about articles from the export of the databases, most typically titles and abstracts. Initially, AS Review was trained on a subset of articles, using manually tagged articles to learn the distinguishing parameters of relevant versus non-relevant studies (Van De Schoot et al., 2021). The manually chosen suitable articles serve to teach the algorithm to suggest relevant articles, which a researcher then confirms. It continues to the point when only irrelevant articles last and continue being suggested. This system enabled significant time saving, limiting human error and bias while securing reliability because the decision-making process always includes validation and human confirmation by the researcher.

This screening phase was devoted to evaluating whether a publication focused on the phenomenon of self-managing teams and whether this phenomenon was investigated empirically. If a paper was related to other phenomena, typically autonomous driving, it was excluded. Similarly, a paper was eliminated if it was about the right phenomenon, autonomous teams, but focused on aspects other than implementation, for example, performance measurement.

Since the aim is to distill best practices, conceptual papers and non-empirical publications, in general, were eliminated. Within the empirical research category, the inclusion criterium was to execute the examination within an organizational context, not in separate constructed experiment. A few papers were also excluded based on these criteria in the actual full-text review if their inappropriateness was not apparent directly from the abstract or title. Subsequently, the literature review was expanded to include relevant publications that were cited in the above database results. Ultimately, 35 papers of 367 findings were included in processing their outputs. The publications were not limited by period, which made it possible to identify findings about the evolution of this phenomenon over time. Keywords were searched in English, which naturally led to the discovery of mostly English texts. Some papers were in other languages; however, they were not excluded a priori for this reason and were also considered.

The main part of the data analysis was a content analysis, identifying and listing the findings of recommendations and best practices associated with implementing self-managing teams. Coding within the content analysis was done using the MAXQDA tool to help manage and organize the data and the relationships between the findings. Coding and analysis were conducted by one researcher to ensure consistent application of Leavitt's model across all publications examined. The analysis was conducted in several rounds, with interim results reviewed periodically to check for consistency, aiming to increase the reliability of the coding process. It included identifying best practices, limitations, relations to Leavitt models, dominant themes, analytical and collection methods and metrics, sample characteristics, limitations, and inferiorities.

[1] PRISMA flow diagram with detailed statistics attached in Annexes
[2] Table of searches is attached in Annexes

The output was a recommendation sheet mapped to the initial articles, which was further worked through using H. Leavitt's model, which helped to cluster individual findings into logical themes and to validate whether these findings across research lead to analogous recommendations (Leavitt, 1965).

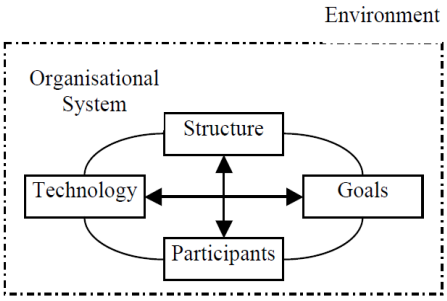


Fig. 2: Leavitt's model of organizational systems (Farley S Nobre & Steiner, 2003).

As a result of the high consistency of findings across publications, the findings addressed recurring themes, including, for example, issues of equity, employee resistance, related training, and others. These themes were identified and utilized as sub-groups of Leavitt's influences (Leavitt, 1965). Then, each of the findings was mapped to these sub-group categories. This allowed the assessment of the recommendations the research provides to autonomy teams on each aspect of this organizational change. It can be easily assessed what recommendations are consistent across different research settings and methods and what more general hypotheses can be condensed. This approach allowed us to answer how to implement self-managing teams in an organization optimally.

The analysis of the papers included a multi-criteria review. The papers and their finding were structured by the year of publication, the publishing journal, and the form of publication represented by either an article or a conference paper. The research methods were also examined. Attention was paid to the sample regarding location, type of organization, sample size, who was represented, and what variables were targeted. The above domains allowed assessing the studies through a multidimensional lens to view how to interpret the findings that were the output of these studies. The quality assessment considered whether the studies described the criteria and to what depth, what sample the data were based on, whether the methodological approach was systematic and justified, and the potential limitations of the individual papers.

Part of the consideration within the review was also an assessment of the quality of the study, which was dominantly based on a sufficient description of the applied methods. That is, whether the collection method, the examined sample, its size, and other details are sufficiently described. Furthermore, the method of analysis and its complexity, for example, whether quantitative research is based only on descriptive statistics. Furthermore, it was looked at whether there is a logical relationship between the research method and the claims made and how the limitations of the studies are dealt with.

3. Results

3.1. Assessing the Quality of Studies

Out of the thirty-five studies that were identified as relevant and on which the findings of this review are based, four were quantitative, four were mixed methods, and the remainder were clearly dominated by qualitative research. Within individual studies, there is a lack of more significant variability in the studied. Studies are conducted within a single country without any attempt to the international overlap and often within a single institution. Some studies can be faulted for the low number of respondents. (de Leede & Stoker, 1999; Wageman, 1997)

Several conclusions stand out when assessing each study's quality and limitations. Firstly, the most common limitation among the studies primarily associated with qualitative research is the need for more

research methods to be elaborated (Lardner, 1998; Levi & Slem, 1995; Van Aken & Sink, 1992). This is evident in the level of methods used and their description. Repeatedly, the sample collected, the method of data collection, or even the details of the data analysis are not described sufficiently or at all. Studies typically do not comment on ethics or efforts to eliminate bias, for example, by triangulation methods. The papers also appear to be only non-systematic observations without predefined methodological procedures (Lardner, 1998; Levi & Slem, 1995; Van Aken & Sink, 1992). Also, it is visible that the above criticisms are mainly related to older studies. The oldest included study is from 1992, and the youngest included study was published in 2021. When reviewing the studies on this scale, a gradual increase in the quality of methodological treatment is evident as the age of the studies decreases. (Renkema et al., 2020; Van Aken & Sink, 1992)

The limitations mainly stem also from the lack of capturing data collection analysis methods and insufficient sample specification. Further, empirical research often examines a small or too homogeneous sample, which to some extent solves the perspective of this SLR. At the same time, the research samples show a lack of attention to actors and information outside/in the SMT environment. Specifically, the vast majority of the data is intra-team. Other limitations of the studies are that they are more individual, research-specific, and do not permeate across. For example, there was a large gap of years between implementing self-managing teams in organizations and the research or the risk of bias desirability. (Druskat & Wheeler, 2004; Thoms et al., 2002)

3.2. Organizational Structure Findings

A proportionally large number of recommendations was identified from the area of organizational structure and further divided if falling into the pre-implementation, implementation, and post-implementation phases of organizational change.

3.2.1. Pre-implementation

According to the analyzed literature, the first important category that organizations should pay attention to is the area of corporate values and culture. The readiness of corporate culture in terms of encouraging employee involvement and participation comes out as an essential prerequisite for the successful implementation of SMT. Levi and Slem clarify the impact of culture readiness prior to SMT implementation "Once the organization begins to create a corporate culture which supports teamwork, the culture will support a wide variety of teams, and eventually the transition to self-managing teams" (1995, p. 41). One of the activities is the creation of routines and symbols that promote mutual trust, which contributes to the necessary company culture, influencing the success of SMT deployment. (Lundene & Mohagheghi, 2018; Mohagheghi et al., 2020).

One of the developed areas is organizational design. Here, the emphasis is on involving employees in the process of designing the target structure (de Leede & Stoker, 1999). Although the team needs to be given a set of tools and a framework to guide them in making decisions and managing, it is recommended to give them a degree of freedom to choose and parameterize these methods depending on each team's situation. This approach is called tailoring (McCalman, 1998). At the same time, when designing the process, it is essential to remember that self-managing teams are not a precise concept but contain multiple parameters set concerning the implementation environment, including, for example, the level and type of supervision (Klein, 1994). Tailoring, the general standard for organizational methodologies, is also recommended here (McCalman, 1998).

Another setup issue is the implementation mechanism. In the companies studied, there were two alternatives: a gradual introduction through a pilot project or a complete implementation. In the vast majority of cases, organizations choose and recommend starting with limited implementation in the form of a pilot (Childs, 1997; de Leede & Stoker, 1999; Hamm & Glyn-Jones, 2019).

A significant factor specifically analyzed below is the suitability of a combination of self-managing teams and agile methodologies. This may seem like a surprising recommendation that is evident from today's perspective. However, especially in the past, SMTs were implemented without combining them

with Scrum-like approaches, although conversely, today's agile frameworks integrate SMTs by default (Moe et al., 2010; Van Aken & Sink, 1992).

Further, dependencies and boundaries are vital issues. Successful implementation of autonomous teams assumes that each team is given a relatively isolated bundle of responsibilities to look after over a long period (Jo Perley & Raab, 1994; Lundene & Mohagheghi, 2018). The most typical example of such a bundle is the application or system that a given IT team is responsible for developing and operating (Gundelsby, 2018). This is because, in general, models with higher levels of empowerment tend to be more bureaucratic and less effective at managing dependencies outside of a single team (Bass & Salameh, 2020).

3.2.2. Implementation

A recurring theme is the degree of team autonomy and the role of the team leader. In contrast to others, a more comprehensive range of views are expressed and are therefore less consistent within this theme. For example, different SMT implementations work differently in that some entirely eliminate the existence of a team leader (this approach is predominant). Others introduce an external leader who serves multiple teams simultaneously and tries to minimize his/her influence on the team (Druskat & Wheeler, 2004; Weerheim et al., 2019). At the same time, recommendations differ in the degree of team autonomy or specifically mention that the chosen degree of autonomy depends on the specific environment. Simonetti and Marx state: "It is beneficial to extend autonomy to the production area, less to the people management area and not beneficial in the business strategy area" (2010, p. 354).

3.2.3. Post-implementation

It would be a mistake to think that the failure of autonomous teams is only a matter of organizational structure, teams, and directly affected parts of an organization. Transformation towards SMT requires the involvement of many company tools. A recurring example is the issue of remuneration, where it is stressed that there should be an adaptation to meet the new demands on employees, promote intra-team cooperation, and, contrarily, prevent possible competition within the team (Bertolotti & Tagliaventi, 2007; Jo Perley & Raab, 1994; McCalman, 1998). This is confirmed by the findings of studies such as: "The adoption of autonomous management generally entails at least a partial re-design of the remuneration system" (Simonetti & Marx, 2010, p. 356).

3.3. Organizational Goals Findings

3.3.1. Pre-implementation

In the area of objectives, one of the dominant factors is the relationship and support of management. That top management and lower levels of management support the implementation of SMT is a very recurrent recommendation or, from another perspective, a frequent barrier to implementation if not followed. In particular, it is essential to obtain and demonstrate a clear commitment from middle management, C-level and HR. (de Leede & Stoker, 1999; Jo Perley & Raab, 1994; Lardner, 1998)

Another consistently highlighted area is the issue of organizational justice. Introducing self-managing teams in an organization raises heightened concerns about employee fairness, which needs to be kept in mind during implementation. This is not only about fairness at the moment but also fairness in the long term (Shapiro & Kirkman, 1999). “It reinforces the importance of behaving justly,” as mentioned by Kirkman because otherwise, the implementation is limited via employee resistance and lowered organizational commitment (2000, p.86).

A higher number of findings and recommendations appear to be related to the time of implementation. It can be demonstrated in the example: “HRM professionals who decide to introduce SMTs should provide a clear idea about the redistribution of HRM responsibilities and provide employees with sufficient time to accustom to their new responsibilities” (Renkema et al., 2020, p. 545). The exact time requirements naturally vary due to unique environments, conditions, and implementation, but two commonalities can be observed. Pressure to reduce implementation time can negatively impact progress or success. Organizations should be aware that the usual implementation time reaches higher

units of months to lower units of years. (de Leede & Stoker, 1999; Renkema et al., 2020; Spreitzer et al., 1999)

In one noted instance from the manufacturing sector, a company overcame substantial obstacles to team autonomy by restructuring shift-related duties and supervision roles. Reallocating complex tasks and introducing targeted training programs, which successfully increased worker participation and reduced dependence on team leaders, fostering a more autonomous team environment. (Hut & Molleman, 1998)

3.3.2. Post-implementation

There is a consensus across the included studies that organizational design change to SMT should pay attention to performance measurement, particularly to validate the success and meaningfulness of implementation. This is also because performance monitoring can be more challenging in autonomous environments than traditional structures. Multiple methods are proposed to measure performance change, ranging from self-assessment to top-management assessment. Further, "to achieve greater…control of…performance, focus…teams on single products" (Lardner, 1998, p 117). (Hut & Molleman, 1998; Mohagheghi & Lassenius, 2021; Thoms et al., 2002)

Other findings from the target area are more fragmented and focus on specifics, such as remote work. However, there is a clear emphasis on the fact that precise goal-setting is essential in implementing autonomous teams. There should be a shift in prioritization of goals related to teams even at the expense of others, especially individual ones, as reported by Moe, Dingsøyr, and Dybå: "Team orientation, often described as a team's goals over individual goals, is important for every team, particularly for an autonomous team" (2008, p.83).

3.4. Organizational Participant's Findings

3.4.1. Pre-implementation

The recommendations related to participants of organizational change are the most developed among areas of the organizational model of Leavitt (Leavitt, 1965). Furthermore, within it, one of the most disparate and consistent groups is the urgency for initial training. In the implementation of SMT, the agenda of the existing team managers is transferred to the rank-and-file employees, for whom this implies the need to master new skills, including conflict resolution, time management, and others (Attaran & Nguyen, 1999; Jo Perley & Raab, 1994; McCalman, 1998). At the same time, the remaining management needs to change how they work; for this, they also need to acquire new skills in mentoring and modern leadership (Lardner, 1998; Van Aken & Sink, 1992). It is essential to prepare training education supplemented by coaching and provide sufficient and realistic time to complete it (Lardner, 1998).

3.4.2. Implementation

One significant recurring problem that occurs across SMT implementations and needs to be emphasized is employee resistance. This occurs both at the level of managers, who lose their original rights and responsibilities, and team members, whose agenda grows in the context of autonomy. Multiple best practices outlined above or below relate specifically to minimizing this problem, such as training and communication to minimize confusion, designing future roles for existing managers, providing coaching to teams, and using pilot projects. (Attaran & Nguyen, 1999; de Leede & Stoker, 1999; Lardner, 1998)

The goal of these practices is to address the causes of resistance related to the phenomenon, which relevant research lists as "violations of fairness, increased workload concerns, uncertain manager support, unclear role definitions, and lack of team member social support" (Kirkman et al., 2000, p. 74).

The review uncovered that adopting self-managed teams (SMTs) has various implications for different corporate stakeholders and requires individual procedures for successful implementation. For instance, HR leaders should strategically introduce employees to self-management by assigning responsibilities that match their current capabilities and gradually developing their autonomy as they

gain faith and competence. This gradual system helps manage the change effectively and assures the team is not overwhelmed or resistant to transformation (Renkema et al., 2020). On the other hand, managers must develop from classic supervisory positions to facilitators and coaches. This change needs continued aid and training to promote a culture of conviction and autonomy within teams (McCalman, 1998). This subtle knowledge assures that each stakeholder class can support the SMT implementation, improving the organization's general results.

3.4.3. Post-implementation

As for coaching, it is a widely used concept that solves multiple problems across implementations. On the one hand, the team must transition to SMT, acquire new habits, understand the goals and vision, and transform the company culture. The use of coaches is proving useful in these areas (Wageman, 1997; Weerheim et al., 2019). On the other hand, the role of a coach answers the question of how to use existing managers in a position where they can use their experience. Most implementations resort to applying coaching to achieve the benefits, which also results from the frequent combination with Scrum that includes it. (Wageman, 2001; Weerheim et al., 2019)

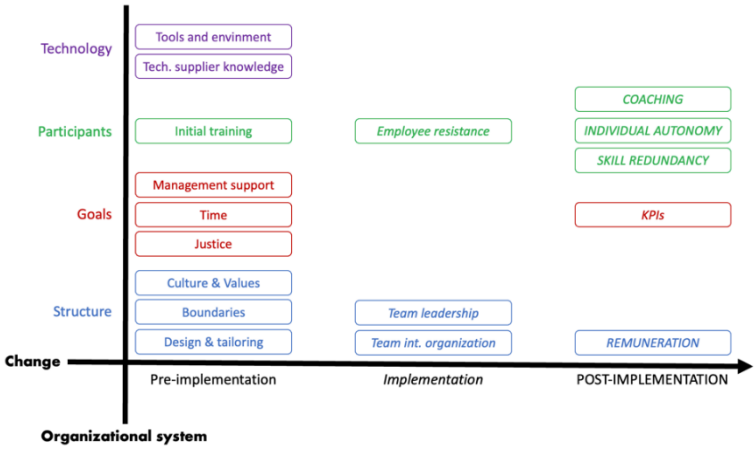
Another essential and common theme among the recommendations is a need for skill redundancy. The move to autonomous teams represents a change in concept from specialists to generalists. It is necessary to create a more significant overlap of skills between team members to increase their substitutability, improving the flexibility and productivity of the SMT. This overlap partially compensates for the negative consequences of the common practice of not sharing team members across teams; it balances the inflexibility of the custom. (Moe et al., 2008, 2009; Van Aken & Sink, 1992)

3.5. Organizational Technology Findings

3.5.1. Pre-implementation

The impact of technology on the implementation success of autonomous teams is not elaborated extensively compared to other areas. Nevertheless, even in this domain, significant recommendations can be found, although they are not frequently repeated across studies. These warn of the need to equip emerging SMTs with the necessary tools, adequate space, and computing technology to carry out their agenda, so investment in this area should be expected (Childs, 1997; Wageman, 1997). They also urge that this type of transformation breaks relationships with suppliers, which, combined with the unique knowledge of systems in the organization held by the supplier employees, poses a threat of knowledge loss (Mohagheghi & Lassenius, 2021).

In the technology industry, another firm handled the limitations imposed by the existing software architecture by initiating a large-scale program that modified the system structure. This shift allowed teams to take full responsibility for functions from design to deployment, particularly increasing their operational autonomy and conforming to best practices for implementing self-directed teams.



(Gundelsby, 2018)

Fig. 3: Distribution of key themes according to organizational model and implementation phase.

The Figure 3 visualizes the distribution of key themes within the reviewed literature and structured by the perspective of the Leavitt model or organizational system. The Table 1 below interprets and summarizes practical recommendations for companies based on studies that should be considered when a company aims for the successful and sustainable implementation of autonomous teams.

Table. 1: Summary table or figure that visually represents the frequent themes and recommendations for practice.

Structure
Execute change from traditional supervisory positions to supportive coaching positions. Supervisors should encourage instead of direct and concentrate on empowering teams.
Carefully appoint team associates to ensure diverse skills and personalities match the team's mission. Promote inclusivity and a broad range of competencies.
Adopt flexible organizational structures that support self-directed teams. This contains adaptable role definitions and the ability for units to self-organize according to varying requirements.
Goals
Facilitate the transfer of decision-making authority to teams, promote self-management, and reduce superiors' control. Emphasize the importance of team autonomy to organizational success.
Secure teams' objectives are aligned with organizational goals. Foster an atmosphere where group activities and decisions contribute directly to the company's broader plans.
Create a culture that favours continuous learning and improvement in teams. Support feedback mechanisms and regular performance reviews to sustain development.
Participants
Cultivate a trusting environment where team fellows feel secure in their positions and have the chance to take the initiative. Leadership must demonstrate trust in team decisions and autonomy.
Invest in extensive ongoing training plans that improve technical and interpersonal skills. Focus on cross-training to improve group versatility and resilience.
Foster open channels of communication within teams and across the organization. Regular, constructive feedback should be normative and facilitate personal and professional growth.
Technology
Use technology to support dynamic team structures and workflows. Emphasize using agile methods and tools that adapt to the team's needs.
Enforce procedures that enable access to information and encourage knowledge sharing among team associates, thereby increasing collective intelligence.
Develop technical and procedural aid systems that allow groups to work independently while staying aligned with organizational objectives.

At the same time, recommendations can be formulated as a checklist rooted in the literature and represent a synthesis of diverse best practice findings. It can be applied by companies considering the implementation of self-managing teams:

Organizational structure:

- Undoubtedly define positions within the SMT, including rotation of leadership and coordination duties.
- Convert traditional management into supporting coaching positions concentrated on leadership rather than control.

Organizational goals:

- Ensure team objectives are aligned with organizational objectives and SMT initiatives.
- Perform regular review and modification cycles to refine team processes and goals based on feedback.

Organizational representatives:

- Deliver comprehensive training in administrative tasks, interpersonal skills, and multi-functional roles.
- Promote a culture of open communication and encourage the expression of ideas and concerns to facilitate adjustment to new roles.

Organizational technology:

- Provide units with the required technology means to access company information and foster practical communication.
- Develop and sustain aid systems that allow groups to work independently.

4. Discussion

4.1. Inspecting the Findings

4.1.1. Emptiness of SMT the Method

One obvious issue, mainly in earlier SMT implementations, was not equipping a team with appropriate (self-)management tools. Although the SMT method leads to the freedom and autonomy of the team, in its essence, it does not guide them on how to use this freedom, how to organize themselves internally, or how to make decisions (Trist et al., 1977). Giving a team higher autonomy should not be confused with throwing it into an illusory vacuum where it must build internal organization methods by itself (Van Aken & Sink, 1992). SMT is an empty approach in the sense that it redistributes rights and responsibilities or power in an organization; however, it does not guide teams on how to self-organize. Only the connection with other frameworks fills this gap and leads to a standard proven connection visible only in later implementations (Moe et al., 2010).

Over almost thirty years, these studies have covered visible evolution in the approach to filling this void. Alongside companies that have implemented SMT without support, there have been cases of efforts to address it through education that equips teams with tools, including better communication, so that teams can create internal mechanisms themselves (Jo Perley & Raab, 1994). Further, especially in later implementations, it was evident that SMTs were combined with agile methods that include specific practices of internal team organization to fill this void. Expecting a team internal organization to develop itself in the team is too risky for SMT sustainability, even though it may occur, but it is a gamble that companies mostly do not take (Bertolotti et al., 2005; Magpili & Pazos, 2018).

Even though the literature review lists a broader variety of findings, the two frequent strategies are worth emphasizing. First, create tailored coaching programs to help employees process their past fears and emotions and promote open communication and role alignment. Second, a gradual transfer of control from centralized management to teams can be ensured by training managers to facilitate rather than manage, gradually increasing team autonomy while monitoring and responding to team feedback for continuous improvement. (Levi & Slem, 1995; Moe et al., 2010)

4.1.2. Homogeneity and Individual Differences

The individual findings from the revised studies are not very fragmented. On the contrary, they are more consistent than initially expected. Nevertheless, there are a few exceptions where the recommendations differ from most others. The most significant differences between the recommendations in the

individual publications are the distribution variance of rights and responsibilities between the team and supporting units, for example, the finance department, and between the team and management. These differences come from different definitions of self-management, with some firms perceiving that it still includes team leaders to some extent (Simonetti & Marx, 2010). Another explanation for why many publications discourage the retention of the team leader role, and others continue to use it is the following. The latter group retains the role only formally. However, effectively, they are de facto coaches who no longer have the rights and responsibilities of the original role, which is an approach visible in other contexts of agile publications (Dikert et al., 2016; Wageman, 1997). In some cases, organizations are leaning towards this approach to limit lower management's resistance and frustration at losing one's position in an organization (Klein, 1994).

4.1.3. Usability Across Sectors

A large volume of recent SMT publications is related to the field of information technology; they are typical for this domain (Levi & Slem, 1995; Moe et al., 2010). However, a review of the research conducted corrects the potential expectation that SMT has avoided other sectors. Some of the earliest implementations took place in coal mines (Trist et al., 1977). The area of nurse team management is remarkably well-developed (Hamm & Glyn-Jones, 2019), and older publications are repeatedly devoted to autonomous teams in manufacturing (Jo Perley & Raab, 1994). Publications focusing on these sectors confirm the application of modern practices within them (Luis Alves Pais, 2010; Tolf et al., 2015). The common conclusion consistently rooted in the findings across the sectors may suggest its transferability.

4.1.4. Gap of Technology Perspective

After mapping the findings of individual studies and fitting them into the model, it is evident that relatively few publications cover the technological aspect of SMT adoption. The question is whether their potential absence causes it to be supportive for SMT implementation, where there is no link, or whether it is a research gap that should be addressed in the future. This is not apparent from the data. However, the contradiction increases the motivation for studying this conclusion, wherein the existing literature shows a link between agility and technologies (Alsaqqa et al., 2020).

4.2. Linking to Other Frameworks

The above conclusions fit and develop further other frameworks using the concept of self-managing teams. In particular, they are related to the scaled agile frameworks used currently, including SAFe, the Spotify model, and Less (Edison et al., 2022). The Less methodology simplifies the guidance for sub-teams by already assuming the introduction of agile or Scrum and implicitly self-driven teams. The Spotify model and SAFe frameworks address some of the recommendations that emerge from the revised studies, such as the issue of inter-team dependencies. However, important missing elements were found, including the issue of resilience, employee remuneration, and individual autonomy. Therefore, the findings of this literature review fulfill the potential of building on and extending these widely used frameworks and further decreasing the risk of failure while implementing these frameworks, including SMTs. (Dikert et al., 2016; Edison et al., 2022)

5. Conclusion

5.1. What was Found Out

Due to years of academic research in the field of self-managing teams, extensive information on how to implement them are available (Attaran & Nguyen, 1999; Pasmore & Mlot, 1994). The systematic literature review retrieved common denominators of successful implementations that can be used as a basis for other companies that choose to make this organizational change. Domains that are key to the transition to SMT, for instance, dependency issues, management support, and others, were identified. Specific recommendations and recurring implementation risks were formulated, for example, a clear separation of each team's long-term scope of work. By interpreting the findings of the studies through

different perspectives, including the time perspective and Leavitt's model, additional conclusions were reached, for instance, the risk of "emptiness" of the self-managing team's method.

5.2. Recommendation for Research

Opportunities for further research are mainly directed toward validating hypotheses and conclusions stemming from analyzing the relevant literature on this topic. Specifically, what are the reasons why there is a gap in technological aspects of the transition to self-managing teams. It is worth explaining why these aspects appear relatively less significant (Wageman, 1997). Furthermore, whether the risk of the "method emptiness" of self-managing teams translates into the success rate of implementation or performance parameters of the teams, i.e., comparing the implementation of autonomous teams alone versus their implementation in combination with a method determining the internal organization of teams, typically Scrum.

Even though the predominantly qualitative research papers are in evident agreement in their recommendations, there is it is suitable to validate these outputs and their potential data-driven generalization and balance a limited number of quantitative studies in this domain (Simonetti & Marx, 2010; Spreitzer et al., 1999). Future research should focus on quantitative methods to reduce current limitations of generalizability and reliability of findings coming from specific contexts examined by qualitative research. Finally, it is essential to examine the validity of recommendations that are not found among the higher frequency studies so that they can potentially be excluded from the spotlight, for example, the increased need to pay attention to health conditions during SMT implementation (Klein, 1994).

5.3. Recommendation for Practice

This systematic literature review provides companies with a valuable set of iterative recommendations on how to approach the implementation of SMT in the different phases (pre-, during, and post-implementation phases) and in different areas of an organization. One side of the recommendation is simply pointing out key areas affecting the success of implementation, including issues of fairness, remuneration, supervision, and others. The other side is suggestions on dealing with these areas, including using pilots, combining with Scrum, or limiting individual autonomy.

The effectiveness of the identified practices dedicated to implementing self-management teams may depend on the characteristics of the companies studied. Their context is typically focused on performance, which is usual for a commercial environment; conversely, beyond this, for example, in government institutions, other patterns are not excluded. Furthermore, autonomous teams, by their very nature, belong to long-term structures, and the study does not imply recommendations to temporary organizations. Further, the logic places a potential limit of applicability to cultural settings with a large power distance because autonomous teams follow contradicting flat egalitarian concepts of hierarchy.

5.4. Limitations

A limitation of this review is the impossibility of statistical validation of the findings, which stems from the apparent dominance of qualitative studies that were the input. Furthermore, this systematic review does not reflect knowledge published in foreign language journals that do not provide the name of the publication in English and, therefore, were not identified when querying the databases. In addition, it should be kept in mind that by deriving from the dominant databases Scopus and Web of Science, which focus on specifically defined journals (Egger et al., 2001).

Acknowledging this review's limitations, represented by reliance on primarily qualitative research and publication bias, should affect how we interpret the findings. Qualitative research may not always be representative of the wider population, which may affect the generalizability of our findings. It may lead to nuanced, context-specific insights that are not universally applicable. Also, studies with significant or positive results are more likely to be published, which could affect the analyzed data.

Overrepresenting positive findings may skew an understanding of the overall evidence landscape (Egger et al., 2001).

The most significant limitation of the individual studies is their dominance of qualitative research and the associated typical focus on examining one case of an organization or a very limited number. This has similar implications mentioned above in relation to the whole literature review, namely that the resulting findings should be viewed as nuanced, context-specific insights that are not universally applicable. At the same time, the limited amount of data is manifested by the lack of long-term studies that could rule out or confirm the long-term or short-term effectiveness of the recommended practices.

5.5. Ending

One of the optimistic conclusions of this review is the visible gradual increase in the quality of papers and the associated value of studies dealing with the phenomenon of self-managing teams and their implementation. This paper sought to build on these efforts and provide direction for the upcoming challenge while condensing existing knowledge for organizations implementing autonomous teams. Successful implementation of self-managing teams in an organization requires changes across organizational functions in terms of setting goals, working with people, changing the structure, and leveraging technology. These changes should begin before the SMT implementation, and applying the recommendations long after the implementation is part of the success.

In conclusion, the successful adoption of SMT can improve organizational performance by promoting autonomy, accountability, and an atmosphere of continuous improvement. When implemented effectively, these units operate with a profound meaning and comprehend how their positions and obligations directly help the organization's overarching objectives. The review results serve as an essential reference for future research and practice aimed at utilizing the full potential of SMT in various organizational contexts.

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