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Empirical Research Paper

Emergence of shared leadership in project teams: The role of events

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ABSTRACT

The interest in project leadership research has expanded towards shared leadership practices, and shared leadership is a noteworthy alternative for traditional project management approaches. Despite the growing interest in shared leadership, the role of events in the emergence of shared leadership remains unclear. The aim of our research was to identify what kind of events trigger or hinder the emergence of shared leadership in project teams. Our qualitative research data from interviews with 31 project team members was collected in five different organizations. Activity theory was chosen as the analytical tool to explore the events affecting the emergence of shared leadership. We found event chains that trigger and hinder the emergence of shared leadership during the different phases of a project life cycle. Our research contributes to project leadership research by shedding light on the role of events in the emergence of shared leadership.

1. Introduction

Project work in contemporary working life features fragmented and complex tasks, in which the working environments are multicultural and multidisciplinary, and many team members work in multi project environments (Chan et al., 2021; Williams, 2017). Traditional vertical leadership approaches focusing on leader traits and behavior do not fully capture the project leadership, that occurs in practices and interactions within and between organizations (Crevani et al., 2010) Project work environment has expanded to cover wider societal challenges, and project leadership requires new insights for engaging, empowering and sharing power (Whyte et al., 2022) Currently, the interest has shifted from vertical leadership into project team dynamics and the role of shared leadership practices in project success (Imam and Zaheer, 2021). Shared leadership is a collective and dynamic approach to project leadership, enabling a novel approach to leadership practices in project teams. Shared leadership refers to a team leadership characteristic, in which leadership is distributed among team members rather than focused on a single designated leader (Avolio et al., 2009; Carson et al., 2007). There are many positive consequences associated to shared leadership in teams (Carson et al., 2007; Wang et al., 2014) but less research has been conducted in context of project teams (Scott-Young et al., 2019).

Despite the interest in the alternatives to traditional leadership practices, the research on the emergence of shared leadership in project teams is scarce (Scott-Young et al., 2019). Shared leadership has been identified to evolve in the early phases of a project life cycle (Wu, 2019), having its peak in the middle and declining towards the end of the life cycle (Lorinkova and Bartol, 2021). Prior research has identified characteristics supporting the emergence of shared leadership at the individual (Carson et al., 2007; Hoch and Kozlowski, 2014), team (Carson et al., 2007; Engel Small and Rentsch, 2010) and organizational levels (Yammarino et al., 2012; Ulhøi and Müller, 2014.). Projects teams provide an interesting context to explore shared leadership, due to project managers central role in leading the actions. Project teams can be distinguished from other types of teamwork due to the temporally limited life span and highly specialized task distributions. Such teams are often engaged in multi project environments, and the teams are unique for that specific project (Chan et al., 2021). Project managers also lack the formal managerial status, which may lead to misinterpretations or conflicts in terms of work priorities. Currently, project leadership faces wider external challenges and uncertainties from society such as climate crisis, political conflicts, and global social needs, which affect the everyday lives of project leaders (Whyte et al., 2022). These conditions require an exploration of project leadership from alternative and collective perspectives, such as, how are the team members themselves active in leading their teams and projects.

However, research is scant on the role of events in the emergence of

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shared leadership in project teams and the need for field-specific research on shared leadership has been identified (Sweeney et al., 2019; Scott-Young et al., 2019; Müller et al., 2023). According to our knowledge, there is no prior research on exploring the link between the project life cycle events and the emergence of shared leadership. Linking project life cycle events and emergence of shared leadership contributes to the research on development of shared leadership in project context. The events in our study are considered to be any event influencing the task distribution, team collaboration or goal achievement of the project teams. Therefore, the aim of our research is to contribute to this gap by exploring the role of events in the emergence of shared leadership. Based on this, we aim to identify the phases of the project life cycle in which the shared leadership emerges. Our research questions are: *1. What kind of events trigger the emergence of shared leadership in project teams? 2. What kind of events hinder the emergence of shared leadership in project teams?* and *3. In which phases of the project life cycle does shared leadership emerge?*

This study is a qualitative analysis of data collected during a research project in 2022 from 31 interviews conducted in 15 project teams in industry and public sectors in Finland. The teams explored were either project manager-led or self-managed agile teams. In our research, we focus on the team level, and do not make any distinctions between the perspectives of the project managers or team members. Activity theory was chosen as the analytical lens to explore the events (Engeström, 1987). According to activity theory, contradictions in systems are considered as a source of development or change. Contradictions in and between the elements of the activity system are events which initiate change chains in project work (Engeström, 1987, 2001). Events can be, for example, disturbances in the project team composition as team members change, or other contradictions which affect the project work. We call these chains of actions simply event chains. In this context event chain does not refer to the critical path method (Flanagan, 1954). The events occasionally break down the existing procedures but embed a possibility for cyclic development (Engeström, 2001), such as changes in leadership practices. As noted above, our research contributes to project leadership literature by exploring the role of events in the project life cycle and the emergence of shared leadership. By identifying the event chains in which shared leadership emerges project practitioners can nurture the emergence of shared leadership.

2. Theoretical background

The rapid pace of development has challenged the project work context, in which project teams work with fragmented and complex work tasks and the team members are increasingly involved with multiple projects leading to multiple project membership (Chan et al., 2021). Simultaneously, the team members work in various team types including multidisciplinary (Scott-Young and Samson, 2008) and multicultural teams (Rees, 2003; Aramo-Immonen et al., 2011). Traditional leadership theories do not fully capture the unique dynamics present in project work, owing to the evolving roles and responsibilities within the team and stakeholders (Agarwal and Bhal, 2020). Specific experts may join a team at a particular time to solve tasks, which means that the project teams have to undergo frequent changes, limiting their ability to grow and mature as typically understood in conventional leadership or teamwork models. These particular features affect leadership functions in projects (Müller et al., 2018b.).

Project leadership is prone to a variety of challenges arising from the context of project work: the pre-set duration of a project lifespan, the relatively high level of uncertainty, and the project complexity. Project leadership is characterized by its non-routine work requirements and the diverse team members contribution (Tyssen et al., 2013). Project leadership faces challenges such as developing and maintaining team members' commitment, creating a flexible working environment which enables the team to adapt to the emerging circumstances and simultaneously maintaining a supportive team spirit and integrity (Tyssen et al., 2013).

Many project leadership studies have explored the vertical leadership perspective focusing on project manager's formal role as team leader (Müller et al., 2018a; Asree et al., 2019; Müller and Turner, 2007), the project leaders' human skills such as emotional intelligence (Zhang et al., 2018) and trustworthiness (Castro et al., 2022). Different leadership styles have been explored, such as transformative leadership (Ahmad et al., 2022; Asree et al., 2019) and authentic leadership (Nawaz and Tian, 2022). Many studies focus on project leaders' characteristics or skills and competences (Turner and Muller, 2005; Turner, 2003), but the emphasis on the project teams' behavior and dynamics have become central to the success of projects (Dalcher, 2017). The work of Müller et al. (2018a, 2018b) on balanced leadership combined vertical and horizontal leadership practices to describe the two distinct leadership processes in projects. Balanced leadership combines shared and vertical leadership features and focuses on their interaction, which is regulated by the mutual cognitive understanding of team members. Balanced leadership has been explored in agile and waterfall methods (Drouin et al., 2021). However, shared leadership practices are less emphasized in project leadership literature, and this is discussed in the following section.

2.1. Shared leadership

2.1.1. Shared leadership and its consequences

Shared leadership, also called distributive leadership or collective leadership, is central to the current working life which increasingly relies on teamwork and projects as a way of working. Shared leadership in various teams and workgroups has been of interest in active research for three decades (D'Innocenzo et al., 2016) and it has been studied in the fields of management and organizational behavior (Singh et al., 2022) psychology (Hoch and Kozlowski, 2014; Lorinkova and Bartol, 2021), healthcare (Janssens et al., 2021), education (Vogel, 2022), and sports (Kang and Svensson, 2019). In project teams, shared leadership has been studied in entrepreneurial teams (Zhou, 2016) decision-making teams (Bergman et al., 2012), product development teams (Müller et al., 2023) and in student samples (Lorinkova and Bartol, 2021; Mathieu et al., 2015).

Despite the interest in shared leadership in many fields, there is no mutual agreement on the concept shared leadership. Rather frequently the definition by Pearce and Conger's (2003, 1) is used *"dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both. This influence process often involves peer, or lateral, influence and at other times involves upward or downward hierarchical influence"* (Kozlowski et al., 2016). Scott-Young et al. (2019) formed concept specific for project teams, in which shared leadership entails the horizontal distribution of influence and responsibility among various team members, with encouragement and support provided by the vertical project manager's actions.

Shared leadership is conceptualized as a dynamic and emergent process which changes over time (Kozlowski et al., 2016). Project teams can be identified as potential contexts for exploring the emergence of shared leadership, since variations in project type, size, scope, and context require different styles of leadership to cope with the multiple complex and stressful situations and decision-making scenarios that arise during a project's lifespan (Imam and Zaheer, 2021). Since shared leadership is more likely to occur where there is task interdependence (Fausing et al., 2015), and in projects, the roles and relationships between team members will emerge, co-evolve and change (D'Innocenzo et al., 2016), project teams are a potential context in which to explore the emergence of shared leadership. Additionally, a review of shared leadership in project teams only managed to retrieve five screened publications of shared leadership in project teams (Scott-Young et al., 2019), which indicates shared leadership has not been sufficiently studied in project teams.

The previous research indicates several positive consequences of shared leadership. It is often connected to the team performance (Carson et al., 2007; Wang et al., 2014). Shared leadership contributes to team cohesion, team consensus, and satisfaction, if team members are encouraged to knowledge exchange and taking the lead on specific tasks and actions (Bergman et al., 2012). Nicolaides et al. (2014) discovered that shared leadership contributes to team performance through the evolvement of team confidence, which supports the findings of Wang et al. (2014). Nicolaides et al. (2014) determined that shared leadership is effective when team member interdependence is high, which requires team members to work closely with one another, coordinate, and integrate actions. The evidence on the effect of team maturity on shared leadership is controversial; Wang et al., (2014) found that team performance improved along with shared leadership as the team matures, but Nicolaides et al. (2014) found the opposite. The negative consequences of shared leadership on team performance are low decision-making efficiency, declined creativity and responsibility dispersion (Chen and Zhang, 2023). The adoption of shared leadership expands the possibilities for managing project teams, particularly in complex, innovative, or knowledge-intensive projects, diverging from the conventional project management practices in which nominated project manager has formal vertical power over team members (Scott-Young et al., 2019).

2.1.2. Emergence of shared leadership

Hoch and Dulebohn (2013) identified factors facilitating shared leadership development in teams. The first factor impacting on development of shared leadership is structural support, which includes the perceived team support, rewards, and information. The support can be perceived at organizational, team and individual levels. The second factor is the vertical leadership demonstrating transformational leadership characteristics, empowerment and leader-member exchange (LMX) behavior from the leader. At an individual level, the team member characteristics such as internal locus of control orientation, self-leadership and proactive personality and team composition are identified as antecedents of shared leadership (Hoch and Dulebohn, 2013). Individual traits such as willingness to take leadership (Carson et al., 2007) expertise, competences and personality are features which effect the collaboration and outcomes in teams (Mathieu et al., 2008; Müller et al., 2018).

Additionally, the shared purpose of the work, social support, voice, trust, and collectivism have been identified as critical antecedents of shared leadership. The internal team environment has been identified as a facilitating factor for the emergence of shared leadership in many previous studies (Carson et al., 2007; Engel Small and Rentsch, 2010). A heterogeneous team composition, task interdependence and internal team environment are also identified as antecedents of shared leadership (Fausing et al., 2015; Wu et al., 2020). At the organization level, the facilitators are the organizational characteristics such as design, structure, culture, values, and norms which encourage both project manager and team members to engage in shared leadership practices (Yammarino et al., 2012; Ulhøi and Müller, 2014). Much of the research conducted for antecedents of shared leadership is conducted in teamwork, not specifically in project team contexts (Scott-Young et al., 2019; Carson et al., 2007; Mathieu et al., 2015) Recent studies by Müller et al. (2023) and Abson et al. (2024) on shared leadership emergence in project teams are building the understanding of shared leadership in project teams, but more research is needed.

2.2. Events in project life cycle

Projects are uncertain ways of working, despite the careful preplanning including risk mitigation protocols (Wied et al., 2020). Unexpected events in many forms, such as single-point events, permanent change, continuous fluctuation (Wied et al., 2021), do occur during a project life cycle. The study of project managers' behavior during unexpected events identified their response behaviors and the consequences when resolving unexpected situations. The origins of unexpected events can be derived from the projects' immediate environment, in which the external project risks are underestimated (Geraldi et al., 2010). The unexpected events may also be derived from internal conflicts, such as when technical incompatibility between parts of the project occurs. External origins of unexpected events do not usually have a direct impact on projects but may cause an indirect impact (Piperca and Floricel, 2012). One unexpected event is the turnover of the project manager, which often occurs in the execution phase, disrupting and negatively affecting the team performance (Parker and Skitmore, 2005; Vartiainen et al., 2010).

Müller et al. (2018a) identified events in projects, or rather a series of action by project leaders, in which the leadership roles between the appointed project manager and team members can be changed. They identified that in the early phases of the project, in which the team is nominated, the project manager aims to influence the project team composition to ensure potential team members who are willing to take a lead. In the identification phase the project manager evaluates the team members, and team members identify their own roles and responsibilities. Next, the selection phase empowers the potential horizontal leaders, followed by the governance phase of horizontal leadership, and then shifts back to vertical leadership practices in the transition phase (Müller et al., 2018a). Contrary to previous research, our research sheds light on the project life cycle events role in the emergence of shared leadership. Müller et al. (2018a) explored the leadership changes from the project manager's perspective. Our perspective is on emergent shared leadership, not on project manager led leadership distribution.

Wu and Cormican (2016) created conceptual model for the change patterns of shared leadership during a project's life cycle and concluded that shared leadership is more evident in the early than the later phases of projects. Additionally, shared leadership was found to emerge in an inverted U-shape pattern in a project life cycle, in which the shared leadership emergence increases in the early phases, peaks in the mid execution phase, and decreases in the later phases of the life cycle. The emergence of shared leadership was also positively related to team performance. Despite these results being derived from three separate studies, they are the conclusions from self-managed student teams, and therefore cannot be generalized to a wider field of project management (Lorinkova and Bartol, 2021.). He and Hu (2021) found that the effect of shared leadership on team performance was stronger during the early stages of the team life cycle. In our research, we adopted the definition of project life cycles of by PMBOK (2021), including the phases: starting, organizing, and preparing, executing, and closing.

In summary, the literature has identified the above mentioned individual, team and organizational level factors facilitating the emergence of shared leadership. However, the majority of the research has been conducted in contexts other than project teams. What remains unclear, is how and under what circumstances shared leadership emerges in project teams. To our knowledge, the events that affect the emergence of shared leadership has not previously studied. The previous research on shared leadership in a project life cycle has identified the occurrences, but the role of events in the emergence of shared leadership has not been explored. Therefore, our study contributes to research into shared leadership by shedding light on the events affecting the emergence of shared leadership and exploring the phenomenon in the project life cycle phases.

3. Methods

This qualitative research approached the emergence of shared leadership from phenomenological perspective. We were interested in the individual team members' reflections on the leadership practices in the project teams. Our approach addresses how this phenomenon is experienced and reveals the affecting underlying contextual processes

(Miles et al., 2014). In our empirical research, the focus was on the project team members' experiences and their interpretations of the changes in leadership roles and responsibilities. The majority of the scarce research on shared leadership in project teams is quantitative with only a few using mixed methods (Scott-Young et al., 2019; Müller et al., 2023). The qualitative approach enables a deepening of the understanding of the underlying contextual meanings and team collaboration in complex organizational arrangements (Cicmil, 2006). Our study explores the emergence of shared leadership in project teams via rich empirical evidence. The interview data allowed the contextual factors in which the project teams operate to be reached.

3.1. Data collection

This research is a part of project leadership study, which was conducted in Finland in 2021–2023. The research project collected quantitative and qualitative data from five organizations that all executed project-based work. The organizations operated in the fields of Medical Industry, Financing Services, or in Public Services; the number of employees ranging from 350 to over 1000. All the participating organizations operated in international collaborations, either in global businesses, or in international development projects. Some of these companies had ownership abroad, which may affect the organization culture and project management practices. The majority of the participating team members were working in a multi project environment. Three of the organizations operated in business, and two in the public sector.

For the data collection, each organization was asked to select up to five projects, that had started their teamwork a maximum of three months prior to the initiation of the quantitative data collection. The organization representatives were asked to select different projects, with approximately ten to fifteen team members in the core team. In the later phase, when the qualitative data collection had been initiated, the same organization representatives were asked to suggest project team members for interviews. The research team contacted the suggested team members and conducted the voluntary-based interviews.

A total of 31 project team members or project managers from 15 different project teams participated in the interviews, 25 from the Medical Industry, two from Finance and four from Public Services. The interviewees worked in new product development projects (diagnostic devices), investment projects (production process equipment), and internal development projects. The budget of the projects varied from tens of thousands to millions of euros. Research data did not comprise any megaprojects. Both traditional project manager led project teams and agile (SCRUM) teams were included. The specific project contents were heterogenous, and the project goals varied from development of online services, promotion of sustainable development, extensive procurement projects for production lines, to development of diagnostic equipment. Interviewees worked as project managers, sub-leads or as specialists in team member positions. The vast majority of the interviewees were Finnish (Table 1.).

Prior to the interviews in Teams or in face-to-face meetings, the interviewees received detailed research information and privacy statements. Their voluntary consent for participation was required prior to the interview. The interviews were semi-structured interviews, which included question themes concerning the project teams' shared goals, leadership and responsibilities, project events and team performance. The interview included questions related to project life span events and their consequences for the team functioning: *"Has there been any events that have interrupted the team collaboration or goal achievement?"* The interviewee was guided that events can be either positive or negative. The more detailed supportive questions asked by the interviewer were *"What kind of events? When did they occur? How did team members overcome these interruptive events? Have these events affected to leadership of team members behavior in teams?"* The interviews lasted from 31 up to 66 min. The interviews were recorded and later transcribed by a research team member. Confidentiality was guaranteed by removing personal information from the transcripts. The preliminary organization of the transcripts was done with an Atlas. ti program.

Table 1
Research data.

Organi-zation	Pro-ject ID	Inter-views (n)	Role in team	Project types[a]
Medical Industry A	MIA-1	4	Project Manager Production lead Procurement lead Control lead	New Product Development
	MIA-2	4	Project Manager Three team members in specialists' roles	Investment Project
	MIA-3	5	Project Manager Four team members in specialists' roles	Investment Project
	MIA-4	7	Project Manager Six team members in specialists' roles	Internal Development Project
Medical Industry B	MIB-1	1	Team member	New product development
	MIB-2	1	Project Manager	New product development
	MIB-3	1	Team member	New product development
	MIB-4	1	Team member, Technical lead	New product development
	MIB-5	1	Team member	New product development
Financing Services	FS-1	1	Team member, specialist role	Investment Project
	FS-2	1	Team member, specialist role	Investment project
Public Services A	PSA-1	1	Team member, specialist role	New Product Development
	PSA-2	1	Project Manager	Internal development Project
	PSA-3	1	Project manager	Investment Project
Public Services B	PSB-1	1	Team member	Research Project
Total number of interviews	31			

[a] This part of the information derives from the quantitative data collected in the leadership project.

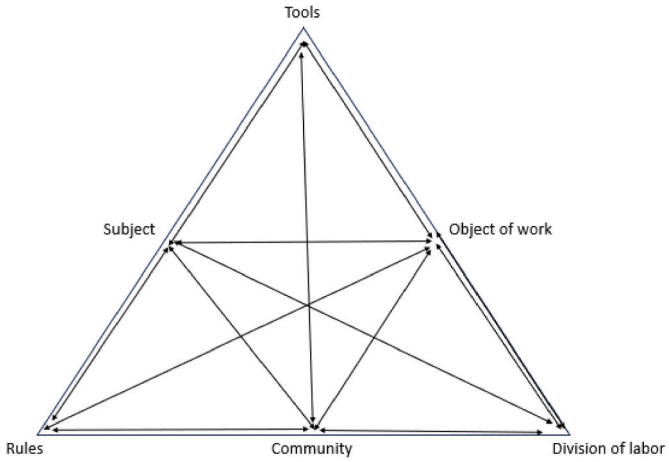
3.2. Data analysis

In the analysis we focused on events and shared leadership. Our analytical focus was on events during the project life cycle, and the analytical unit was the project team. For the project life cycle, we applied the Project Management Body of Knowledge (PMBOK) model (2021) with the following phases: starting, organizing, and preparing, executing, and closing (see Table 4.). Events offered a valuable retrospective view for exploring the everyday work of project teams. Initially, the focus was on disruptive events (Morgeson, 2005), which has been identified to function as triggering the change in leadership practices within teams (Vartiainen et al., 2010; Engeström, 2001). The disruptive events affect the team's daily routines and teams are forced to adapt their activities to overcome the challenges (Morgeson, 2005). According to the literature (Engeström, 2001; Morgeson, 2005) disruptive events in a project life cycle may trigger leadership change. Our analysis initiated as researchers familiarized on the disruptive events and shared leadership in the data. As the first iteration revealed not only disruptive, but also other minor events were significant in the everyday life of the projects as regards shared leadership emergence, we included events

from a wider perspective. For example, meaningful project output triggered the emergence of shared leadership, and it is not a disruptive event but was discovered when an interviewee related other meaningful events in the project life span.

Therefore, in the second phase of analysis all meaningful events were considered and, there was a need for a more detailed analytical tool to identify the elements involved. Despite the critical incidence technique (Flanagan, 1954) being successfully used in investigating disruptions and challenges in projects (Dille and Söderlund, 2013; Ahola, 2009) the events in our study were considered wider than disruptive or critical. The complexity of projects embeds multiple unobserved causes for the challenges the actors face, and the unexpected events are rarely traceable (Williams, 2017). We follow Wied et al. 2020 who claim projects face a variety of unexpected events which can be permanent changes, continuous fluctuations, or single and minor events. In our study we define events as "any event influencing the task distribution, team collaboration or goal achievement in project teams". Proactive project management requires identification of minor details triggering the need for change in the project leadership, and therefore activity theory was chosen as the analytical tool.

Our aim was to explore the emergence of shared leadership, which is a dynamic interaction process in teams. Since activity theory (Engeström, 1987) enables contradictions and tensions to be revealed within systems on multiple levels, it was chosen for the theoretical lens. Instead of focusing on critical events (Flanagan, 1954), we applied activity theory because the focus was on project teams as systems within an organization. The activity theory as a methodological tool enables the systematical exploration of the informants' interpretations of the events during the life cycle of the project in a theoretically constructed way, and to identify possible disturbances or contradictions within each event. Systematic analysis of the events considers multiple actors' perspectives, which is crucial in attempts to make sense of the complexity of project leadership and the underlying reasons for team leadership changes. Activity theory (Engeström, 1987; Alexander and Hjortsø, 2019; Engeström and Pyörälä, 2021; Cong-Lem, 2022; Zou et al., 2022) sees the activity as a collective system which comprises of six elements; object of work, subject, tools, division of labor, community, and rules (Engeström, 1987) (Picture 1.). We related these elements to the project team collaboration as follows: The 'object of work' is the project goals, including smaller objectives and tasks which need to be completed in order to reach the end products of the project. The 'subject' is the team member but can also refer to whole team in cases where the interviewees talked about team relationships with the whole organization or stakeholders. The 'tools' are the intangible resources utilized for project work, such as skills and competences, organizational guidelines or frameworks steering the work, and tangible resources such as communication and collaboration tools which enable the project work. The 'division of labor' is the way the project tasks are distributed within the team and organization. The 'community' refers either to the project team or the whole organization, depending on the interviewees' perceptions. The 'rules' refers to the decisions or guidelines agreed upon by the organization.



Picture 1. Elements in activity theory (Engeström, 1987).

Activity theory is based on principles of work as an activity system, in which the elements of action are inter-related on multiple levels and the activity systems are always multi-voiced with actors from different point of views and histories (Engeström, 2001). The project work is characterized as a complex system of teamwork, involving a large number of stakeholders within and outside of the main organization (Maylor et al., 2013), hence it embeds multiple activity systems and is affected by many actors. According to activity theory, contradictions do not refer to problems or conflicts but are considered sources of development or change; chains of actions which disturb the prevailing practices or agreements enabling the emergence of new ones (Engeström, 2001.). We call these chains of actions simply events, whilst analyzing the empirical data. The events occasionally break down the existing procedures but embed a possibility for cyclic development (Engeström, 2001), such as changes in leadership practices.

The analysis was executed by three researchers following investigator triangulation principles (Denzin and Lincoln, 1994). The extracts were marked from transcripts in which the interviewees talked about events that influenced the project's progress or events that had changed the task distribution or had an impact on project outcomes. Interviewees were asked to *"memorize an event, which has influenced the collaboration of the team or has had some impacts on goal achievement"*. All events found (n = 415) in the data were analyzed according to elements of activity theory. Next, the analysis continued with exploring the events from the perspective of shared leadership, whether the conflict in the event had changed the leadership roles and responsibilities, and if the conflict triggered or hindered the emergence of shared leadership. The informants described multiple different events leading to changes in team leadership and explained how the event had facilitated them e.g. "*to take responsibility" [39]*, how the event initiated actions exceeding their own roles "*asked myself what I need to do"[3],* and how the leadership responsibilities were given to team members *"the leadership responsibilities were shared.. could say that he led the project more than me" [21].* Additionally, the project life cycle phase was coded if that was identifiable. The analysis was triangulated (Denzin and Lincoln, 1994) between three researchers with several iterations. During the analysis the researchers discussed the interpretations, uncertainties and the possible conflicts faced. Triangulation discussions concerned specifications for events, which activity theory elements were involved, and from which element the event chain was initiated. Additionally, the project life cycle coding was discussed. As the events were analyzed by activity theory in the light of triggering or hindering the emergence of shared leadership, the first author took a more responsible role for forming the event chains, followed by regular investigator triangulation discussions. The uncertainties were elaborated together with reflection on the research goals, and possible contradictions between individual researcher's interpretations were discussed to achieve mutual understanding and a coherent analysis.

4. Findings

This research discovered events which trigger or hinder the emergence of shared leadership in project teams. These identified events initiated chains of actions, which either lead to or hindered the emergence of shared leadership, therefore in the findings we call them event chains. They were derived from elements in activity theory, in which the contradiction between elements trigger or hinder the change, and in this study, the emergence of shared leadership. The event chains are categorized according to the element, the object and goals of the work, the subject, tools, division of labor and collaboration, community, and the

Table 2
Event chains triggering the emergence of shared leadership. Findings from the whole data, contexts of each example mentioned in brackets.

Activity Theory elements	Level of analysis	Event chains triggering the emergence of shared leadership	Extract from data[a]
Object and goals of work	Individual	Leading complex projects Challenging object of work	*"I've followed the progress from the side … just nodding my head and agreed as the team had done good job, I just need to take the message higher … they have very well taken over the responsibilities." [279]* (medical industry, new product development project)
	Team	Life span phase Team spirit building Challenging events in project life span	*"The early phase is the most important, to make the team collaborate and motivated … the more they get engaged, the more they get leadership responsibilities along the life span … and as the implementation phase approaches, the project manager raises his head." [320]* (medical industry, internal development project)
	Organization	Meaningful project output	*"it's about in the end of the line, it's about saving lives, it's something very powerful, very strong. It is also something very good to remind to the people, why they are doing what they are doing. It is not just another game, it's not a mobile phone application, it has a very strong meaning" [416]* (medical industry, new product development)
Subject	Individual	Individual traits Competence and experience Team support Unexpected event	*"I'm a bit special, cannot keep my mouth closed.. I really push my ideas … it is so rewarding to see how my suggestions contribute to project. I think you should open your mouth if you see that things are going wrong." [333]* (medical industry, investment project)
	Team	Team competences and engagement	*"When project managers bang on about things and they don't necessarily have that basic understanding of things, they blur what's really going to happen next, so especially in a project like this, I think it's good that some people in the project team have the ability to take that role." [31]* (medical industry, investment project)
	Organization	–	
Tools	Individual	Competence and expertise	*"He has really strong planning and technical expertise, so whenever there is something related to them, they fall directly on him, and he takes care of them." [295]* (medical industry, new product development)
	Team	Practical project tools	*"it's my decision, my team members will of course tell what they can, and we are constantly reflecting in every team meeting, whether we have challenges with schedules, or we see problems in the future and if they say that I cannot meet that deadline, we resolve together." [302]* (medical industry, internal development project)
	Organization	Renewal of project organizing Model of project management	*"Leader should give the control and power to others, since this systemic way of doing things just don't get through if people do not take the responsibility." [409]* (public sector, investment project)
Division of work and collaboration	Individual	Engagement to the shared goals of the project Role clarity	*"He took over my tasks when I could not, it is just going to same direction. Taking step to other areas, like in collaborative manner …" [24]* (medical industry, investment project)
	Team	Team member changes Responsible role Perception of team member's competences Role conflicts Role clarity	*"Project manager was on parental leave … we needed to be more independent, take more responsibility." [39]* (medical industry, investment project)
	Organization	Lack of organizational support Organizational changes	"*Project manager [from global site] left the project, and we needed to put more effort later to start up again. We took more responsibility to our site, to avoid that they globally dictate what we do." [40]* (medical industry, investment project)
Community	Individual	Trust	*"The new team member has clearly his own thinking and very, very quickly got involved and is now already a kind of trusted person on whom you can rely in this kind of decision-making or ask him to push things forward." [280]* (medical industry, new product development project)
	Team	Supportive and responsible team climate Trust Maturity of team	*"I feel that once I know others responsibilities and see their challenges, I think it is good that we share these, we discuss how others have solved them … everyone tries to support you … and I feel we all push this to same direction" [28]* (medical industry, investment project)
	Organization	–	
Rules	Individual	Project deadlines	*"I really have to kind of kick the project manager. I want people to really understand the deadlines, we must have things done … These types of things, and I must bang on them, that it's probably my role …" [63]* (medical industry, new product development project)
	Team	Project deadlines	*"I was terrified when we scheduled our project with R&D, I thought in theory this might work, but this is like domino effect, if one part collapses, then it is a big bang … well, we did some arrangements, team got the understanding of it, and fine, we just work hard … [55]"*(medical industry, new product development project)
	Organization	Changes in specification	*"The new EU-regulations disturb our work, new requirements, and guidelines. Together we try to understand the needs, the develop new templates and documents … together we laugh at mistakes and bang heads to walls … [50]"* (medical industry, new product development project)

[a] Extract refers to first event chain in the list.

rules, which were interpreted to initiate the chain of actions leading to changes in the team's leadership responsibilities. Despite our analytical focus was on teams, the events were analyzed according to individual, team and organizational levels, since according to the activity theory (Engeström, 1987), we considered project teams as systems in organizations, hence considering all these levels was required.

4.1. Event chains triggering the emergence of shared leadership

4.1.1. Object and goals of work

Event chains triggering shared leadership derive from the object and goals of the work (Table 2). On an individual level, if the **object of the work is highly challenging**, and the project manager does not have enough knowledge on the subject, the project manager shares the leadership responsibilities within the team. Moreover, when **leading complex projects,** the leadership practices need to be shared. The

project managers understanding of the team competences and abilities, and the difference between leading "simple" projects' function as an event chain evolving shared leadership.

At the team level, embedded in different phases in the **project life span** were event chains which evolved shared leadership. This appeared in the medical industry project as the different phases required re-organizing tasks and responsibilities. In public sector's network project this appeared especially in the closing phase when team members took leadership in sustaining the developed practices. The specific objects of the work changed according to different project phases and rendered renewal of leadership roles. **Challenging events** in the project life cycle evolved into shared leadership as the team first struggled and then overcame the obstacles through clarifying and understanding the relationship between "my work" and "our work". Shared leadership also emerged when the team faced indirect project objectives such as tasks related to **team spirit building,** and the specific team members took the lead on the activities. In this event that took place both in the medical industry and the public sector projects, as one team member took the lead for building team spirit, since they were entrusted by others. At the organizational level, **meaningful project outputs** were triggering shared leadership, in situations where high levels of collaboration, beyond the formal project roles were needed to complete the tasks at hand. Developing medical devices that save lives is an example of meaningful outputs that triggered shared leadership.

4.1.2. Subject

Taking the leadership role required **individual traits** such as courage, self-initiation, emotional intelligence, and proactive behavior, which were event chains related to subjects on an individual level (Table 2.). Simultaneously **competence and experience** played an important role forming the basis for the emergence of shared leadership, however, this required a triggering event such as any hindrance in progress due to lack of decision making. Example of a triggering event in a new product development project in the medical industry: *"Team member got frustrated as nothing happened and decisions were not made … someone else needed to take the responsibility … older, more experienced one took the lead" [62].* In these situations, an experienced team member took over the lead to overcome the hinderances in project progress. At the team level, **team level** support for the shared leadership encouraged project managers to continue the distributed leadership practices. **Unexpected events,** such as long sick leave, triggered shared leadership as the team was forced to change the leadership practices to overcome the new situation. **Team competences and engagement** triggered the emergence of shared leadership, as team members took the leadership roles in situations in which their competences are most needed, and their competence exceeds the competence of the formal manager.

4.1.3. Tools

Event chains triggering the emergence of shared leadership were derived from tools on an individual level such as **competence and expertise**, as these gave justification to take the lead in diverse project life cycle situations in which the team member's expertise was required. An example from an investment project in the medical industry, in which experienced team member was able to form a holistic view on current situation, and reacted accordingly: *"as I've gained experience, I understand the connections within project tasks and events better … and I can take over the new situations or changes with appropriate seriousness and act accordingly" [37].* In these cases, if the individual's competence and expertise were combined with traits of courage, the shared leadership pushed the collective decision making to even go beyond the formal rules. This came up as a new product development project operated in an organization that had strong project model guidance, and team was waiting for formal decision to proceed. The leadership was taken by experienced team member to ensure project progress even though the decisions from higher were lacking. At the team level, **practical project tools** such as efficient communication practices, precise work, task division and clear goal-setting events created practices which function as a venue for sharing and re-shaping the responsibilities. At the organizational level, the organization specific **project management model** and its standardized phases functioned as a tool providing topics for reviewing and redefining leadership practices.

4.1.4. Division of labor and collaboration

On an individual level **engagement in project goals** and taking responsibility for one's own workload triggered the emergence of shared leadership. Also, engaging in the **shared goals** triggered shared leadership. Engagement led to working towards shared goals, which appeared in investment projects in the medical industry. For example, if one team member was absent, other team members took over the lead without formally being asked. Work **role clarity** was identified as triggering the emergence of shared leadership, since clear professional roles facilitated self-management and fostered one's own role in taking leadership.

At the team level, **team member changes** forced the reshaping of the responsibilities of team members and triggered a shared leadership to emerge. **Perception of team member's competences** triggers emergence of shared leadership, as when the team knows the skills and competences of the team members, the responsibilities and leadership roles can be shared. **Role conflicts** triggered the emergence of shared leadership in situations in which team members leadership responsibilities and roles were unclear, and one team member took the lead despite having no formal authority. An example from a new product development project in the public sector: *"Project manager was changed, he was really in outer circle of everything … leadership was changed, me and my colleague took the lead [68]."* Uncertainties in leadership roles and responsibilities within the team triggered individual team member to take the lead once they become frustrated in unclear situations, or the leadership role was assumed by one of the team members without formal authority. Contrary to role conflicts, **role clarity** in teams led to the emergence of shared leadership because understanding one's own role and the responsibilities of others formed a concise perception of the shared goals and the overall purpose of the project. Clear roles and responsibilities functioned as a springboard from which leadership was shared.

At the organizational level the changes in the **organization's management** created transition points for leadership in teams. In addition, the **lack of organizational** support triggered the emergence of shared leadership as the management of an organization did not give support or guidance to local projects - which led to collective decision making in the medical industry project teams.

4.1.5. Community

Event chains triggering the emergence of shared leadership in a community, both at the individual and team level is derived from **trust**. Additionally, a **team climate** that is **supportive and responsible** triggered the emergence of shared leadership. The **maturity of a team** triggered shared leadership in the later phases of the project's life span as the unstructured team collaboration featured in the early phases is over and the collaboration has matured.

4.1.6. Rules

At individual and team levels, **project deadlines**, triggered the emergence of shared leadership as the leadership roles were forced to reshape in order to achieve the necessary project goals in a specific time frame. At the organizational level, the **changes in outcome specifications** created a venue for re-organizing the leadership roles.

4.2. Event chains hindering the emergence of shared leadership

4.2.1. Object and goals of work

At the team level, **unclear tasks** and **specific tasks** allocated to the project manager which cannot be shared, such as the budget, role and

task divisions hindered the emergence of shared leadership (see Table 3).

4.2.2. Subject

At the individual level, a **project manager's vertical leadership style**, and the **reluctance of individuals to accept leadership** hindered the emergence of shared leadership. Reluctance to allow change was derived e.g. from a lack of competence as regards accepting the lead, or the experience of having sufficient demands in current tasks. At the team level, **multiple project involvement** hindered shared leadership emergence, due to excessive workloads.

4.2.3. Tools

An individual level event chain that hindered the emergence of shared leadership was the **lack of competence and experience,** and at the team level **digital communication tools** which did not support sharing and collaboration. At the organizational level, **insufficient time allocation** for project work hindered the emergence of shared leadership.

4.2.4. Division of labor and collaboration

On an individual level having **strictly specified roles** hindered the emergence of shared leadership as the team members undertook only their specific project roles and were not willing or expected to exceed these. This is connected to involvement in **multiple projects** and other duties in production that undermined the opportunities to take shared leadership roles. Specified expert roles combined and multi project involvement limited the participant's work to the extent that there was no space for shared leadership. The emergence of shared leadership at the team level was hindered by **lack of trust,** and at the organizational level **unclear communication, the distribution of responsibilities, outsourced leadership roles, insufficient resourcing for project work** and **vertical leadership models.**

4.2.5. Community

On an individual level, the project manager's **vertical leadership style** hindered the emergence of shared leadership. On a team level, **multiple project involvement** led to fragmented work, possible role uncertainties, insufficient time-resources, and difficulties engaging with and prioritizing the specific project. The belonging and engagement of the team was interrupted both by the team members and from the team's perspectives, as one team member had quick and small tasks to complete in the project. In some cases, the **early project phase** hindered the emergence of shared leadership, because the team collaboration was immature. On organizational level, **vertical leadership culture** and **unclear responsibilities** hindered the emergence of shared leadership. For example, in investment projects in the medical industry the project owner and project manager had unclear responsibilities in the organization.

4.2.6. Rules

At the organizational level, a leadership culture that relied on **vertical leadership** and project manager-led practices, hindered the emergence of shared leadership. For example, the mechanistic organizational approach, a formal work environment and strong project management practices hindered the emergence of shared leadership in projects operating in the medical industry.

4.3. Project life cycle phases in which shared leadership emerged

Project phases function as natural transition stages for changes in both the objectives of the work and leadership roles. Majority of event chains identified were related to the execution phase of the project life cycle. Some of the events triggering the emergence of shared leadership took place earlier or later phases of the project life cycle, and these events are described below. Table 4 demonstrates how the identified event chains appeared in project life cycle if the phase was identifiable.

4.3.1. Organizing and preparing phase

In the early stages of a project life span, shared leadership emerged when team needed to **build up a good team spirit** and to **engage team members in the project goals**. Despite the formal project roles, team members were encouraged to expand their roles, an example from a research project in the public sector: *"I feel that belongs to my role,* supporting *the team … when this project was offered to me, project manager asked me to* support *good spirit since it is hard to engage people" [72].* Perception of team member's competences and experiences can trigger shared leadership responsibilities beyond formal roles, even in the early project phases. In the early phases the team collaboration is immature, and the team is seeking to clarify its forms of collaboration, but as the perception of **team competences and experiences** builds, the sharing of responsibilities and roles emerges. An example from a new product development project in the medical industry: "*project manager needs to work [more than others] in the early phases, but as we form a team and project really starts, it is easier to share [leadership] for others" [284].* We found evidence, that in the early project phase, shared leadership can emerge in the case of complex projects, in which leadership needs to be shared. Quotation from the medical industry, a project manager in a new product development project: *"I've followed the progress from the side [in planning] … just nodding my head and agreed as the team had done good job, I just need to take the message higher [in organisation] … they [team members] have very well taken over the responsibilities.." [279].* Practical project tools, model of project management and renewal models, and role clarity may also trigger the emergence of shared leadership in the organizing and preparing phases.

4.3.2. Closing phase

When a project approaches its end and the pressure to reach the goals increases, team collaboration was intensified, and collective work with shared responsibilities emerged. A quote from a team member in the investment project, from the project closing phase: *"many of us leaded … it was not that sharp project manager role in the end" [272].* We found that project manager's role is central in the early phases, and leadership roles can be shared in the execution phase. In the later phases, the role of the project manager increased. An example from an internal development project: *"in early phase the most important is, to make the team collaborate and motivated … the more they get engaged, the more they take leadership along the life span … and as the closing approaches, the project manager raises his head." [320].* In large network projects in the public sector, in which the project end products serves a public entity, the shared leadership became essential in the closing phase to ensure the sustainability of the end products.

5. Discussion

In this study we explored the events triggering and hindering the emergence of shared leadership in project teams. We found several event chains triggering the emergence of shared leadership; these event chains trigger the emergence either slowly over time, or more rapidly as a response to sudden events during project life span. The slow event chains trigger the emergence of shared leadership over a longer period of time, for example, competence and experience led to shared leadership throughout the whole project life span across the participating organizations. Contrary to slow event chains, the fast event chains trigger the emergence of shared leadership in a shorter timeframe, for example, in team member changes. Most event chains identified are special for project work, without any context-specific boundaries. Our study complements previous research on shared leadership in project teams (Abson et al., 2024; Müller et al., 2023; Scott-Young et al., 2019) as we clarified the role of events in the emergence of shared leadership. Our study advanced knowledge about shared leadership in project teams in the following ways. First, we found that triggering events in teams are

Table 3
Event chains hindering the emergence of shared leadership. Findings from the whole data, contexts of each example mentioned in brackets.

Activity Theory elements	Level of analysis	Event chains hindering shared leadership emergence	Example from data[a]
Object and goals of work	Individual	–	
	Team	Tasks specific for PM	*"the money is something that project managers have to pay too much attention to … but, well, the schedule, the money, the project in general, well, control, roles, resourcing is like that, so I always have to pull the resourcing together and control it quite strongly." [296]* (medical industry, new product development project)
	Organization	–	
Subject	Individual	Vertical leadership style Reluctance for taking leadership	*"it's been pretty controlled management." [121]* (medical industry, internal development project)
	Team	Multi project involvement	*"the work of these experts is so ridiculously fragmented … Is the team so important to them that they want to give their input, because I know that they are in an impossible situation at the moment, someone is always suffering." [310]* (medical industry, internal development project)
	Organization	–	
Tools	Individual	Lack of competence and experience	*"I have so little experience in such a role so have not yet developed any practice to lead people yet.."[223]* (medical industry, investment project)
	Team	Digital communication tools	*"Although Team works well, but yes … the flow of information has gone wors even more during after pandemic. It hasn't been possible to share the responsibility in the same way." [338]* (medical industry, investment project)
	Organization	Insufficient time allocation	*"it's a practice here that your work is bits and pieces, quartile here, an hour there. Simply too much to do related to resources, and when trying to prioritize, we'll do this and you have to choose …" [269]* (medical industry, investment project)
Division of labor and collaboration	Individual	Multiple project involvement Strictly specified roles	*"the team members are partly like that, they might be involved in five or ten project and then there are also some line roles, so they are more like that they come along when asked and do what they are asked." [280]* (medical industry, new product development project)
	Team	Lack of trust	*"I trust on competences, but if someone from outside comes to do our core tasks, I would not have enough trust.."[186]* (financial services, investment project)
	Organization	Unclear distribution of tasks communication, and responsibilities Outsourced leadership roles Insufficient resourcing Vertical leadership model	*"information flow between the organizations sucks. Suddenly something comes up, no, no it was not talked about, even in this big company, we should have the flow, but only higher level knows.." [333]* (medical industry, investment project)
Community	Individual	Vertical leadership practises	*"if you do not really give the space, and that the project manager, even if he is a bit of a tyrant, that we do it his way." [363]* (medical industry, internal development project)
	Team	Early project phase Multi project involvement Lack of trust	*"Project manager needs to work [more than others] in the early phases, but as we form a team and project starts, it is easier to share for others." [384]* (public sector, investment project)
	Organization	Unclear responsibilities Vertical leadership culture	*"We are on-hold now, we are not sure how to continue, how to organize ourselves, we just need to tolerate this uncertainty" [117]* (medical industry, internal development project)
Rules	Individual	Reluctance for change	*"we've thought how to prioritize and continue, since none tells how to do" [182]* (financial services, investment project)
	Team	–	
	Organization	Vertical leadership model	*"everything changed when the global site got involved, it's a hell of a lot of work, a hell of a lot of documentation, and everything else, …so they[authorities] have come many times to check and we're fine, but then the global site actors said you're all messed up …" [324]* (medical industry, investment project)

[a] Extract refers to first event chain in the list.

important for the emergence of shared leadership. These events are naturally embedded in project life span and acknowledging them the project practitioners may improve the leadership practices. Second, the identification of hindering events was important in order to understand the obstacles to shared leadership.

5.1. Triggering event chains

We found event chains that trigger the emergence of shared leadership that were derived from changes in team composition or from external origins. These events, such as the turnover of the project managers or other unexpected events that change the leadership practices within the project team in shorter timeframe. Renewal of the project manager or other central team members disturbed the team collaboration and created a need for re-designing distribution of the tasks and responsibilities. These kinds of unexpected events have been studied in relation to project success (Wied et al., 2021) or project manager's behavior (Geraldi et al., 2010) but not previously in the light of shared leadership. Our study found that changes due to external origins such as authority-driven changes in output regulation or a crisis in the supply chain trigger leadership sharing, but they also require trust, team engagement and other facilitating event chains such as meaningful project output as drivers of sharing leadership. Our findings of trust as triggering shared leadership are in line with recent study by Abson et al. (2024) who emphasize trust in and between project teams as facilitating shared leadership.

The role of team composition in shared leadership emergence was highlighted in the work by Müller et al. (2023) as they formed a process framework for shared leadership emergence. Our research addresses the role of competent and experiences team members in emergence of shared leadership, as they take the lead in unclear events during project life span. Roughly half of the project teams in our study were product development teams, having similar context as in Müller et al.'s (2023) research. Drawing on our data with diverse project types, our findings suggest competence and experience triggers shared leadership in many project types.

We also aimed at identifying the project phases in which the event chains trigger shared leadership to contribute to project management practice. Many of the events triggering shared leadership were identified in the execution phase. The project teams in this study we mostly formed in execution phases, which may have affected our findings. Several event chains triggering shared leadership were related to natural phases

Table 4
Project life cycle phases in which shared leadership emerged. This table demonstrates in which project life cycle phase and the number of discourses of the event chains that appeared in this particular data.

Event chain	Organizing and preparing	Executing	Closing
Challenging object of work		1	
Leading complex projects	1	1	
Team spirit building		2	
Project life span events	4	9	7
Unexpected events	4	7	
Meaningful project output		1	
Individual traits		7	
Competence and experience	1	7	2
Team support		4	
Team competences and engagement	1	8	1
Competence and expertise		2	
Practical project tools	2	7	
Model of project management,	1	1	
Renewal of project organizing	1	2	
Engagement to the shared goals of the project		9	
Role clarity	1		
Team member changes		6	
Responsible role		1	
Perception of team member's competences	1	8	1
Role conflicts		9	
Organizational changes		2	
Lack of organizational support		3	
Trust		1	
Maturity of team	1	1	1
Supportive and responsible team climate	3	15	2
Project deadlines	1	2	1
Changes in specification		1	

in the project, such as deadlines for smaller task completions or milestones, which offered natural transition points for changes in leadership responsibilities. We found that supportive and responsible team spirit triggers shared leadership already in the early phases of project. In the closing phases, the deadlines drive competent and engaged teams to share responsibilities in order to achieve the goals. Even though our purpose was not to quantify the emergence of shared leadership, our findings follow previous studies by Lorinkova and Bartol (2021) and Wu and Cormican (2016), who suggest that shared leadership emerges in an inverted U-shape along project life span.

The triggering event chains are well represented in projects' everyday life. Engaging the team in shared project goals is important (Peralta et al., 2015) and our study found that engagement triggers shared leadership especially in the execution phases of the project. As a result of our analysis, we considered engagement in shared goals as a slow event, that triggered shared leadership when project team faced difficult situations. It appeared that team members were engaged in project's shared goals and having taken "*ownership*" of the goal this facilitated taking more responsibilities that exceeded their formal roles. This required team members to expand their perception of their work from "my work to our work", which is fundamentally important in successful teamwork. Establishing and engaging the team in the shared goals is important for teams to achieve performance expectations (Mathieu et al., 2008). In project teams, engaging the team members into shared goals is important not only in the early stages of the life span, but throughout the project life span due to events affecting the objective of the work, or team composition. Furthermore, depending on the organization, team members may have possibilities to influence the goal setting processes (Mathieu et al., 2008). In many project organizations, the project team receives pre-set goals, therefore their engagement may require more effort and facilitation throughout the project life span. Having clear goals for the work leads to effective team outcomes, which has been found in several previous studies (Carson et al., 2007; D'Innocenzo et al., 2016; Mathieu et al., 2008), and according to our findings, engagement in clear goals triggers the emergence of shared leadership in project teams.

The complexity of projects itself requires the project manager to share the leadership roles with team members. A competent project manager acknowledges those tasks that can or cannot be shared. Despite knowing the project tasks, the perception of the team members competence and experience are also essential factors triggering the emergence of shared leadership. In our study, this appeared in situations, e.g. when the less experienced project manager shared the leadership responsibilities with competent and experienced team member. Having team members with different experiences gives space not only for sharing the leadership but also creates space for learning. This is in line with Müllers (2018b) work on balanced leadership, in which the project manager needs to understand the particular skills and availabilities of team members in order to share the leadership roles during a project life cycle. Even though shared leadership is considered as emergent and dynamic team process (Pearce and Conger, 2003), in the project context the role of the project manager in the emergence of shared leadership needs to be considered to some extent. This is due to the overall responsibility of project progress and success, which is entrusted to the project manager. We acknowledge the statement by Scott-Young et al. (2019) that shared leadership in projects entails encouragement and support from the vertical leader, however, as our study found, the emergence of shared leadership was derived from project team actions as a response to different events.

5.2. Hindering events

Our study found event chains hindering the emergence of shared leadership. These hindering events were related to digital communication, leadership, role clarity, trust and to some specific features of project work. Some hindering event chains were simply the opposite to triggering events, such as unclear task distribution and roles, unwillingness to take leadership responsibilities, lack of competence and experience and poor communication. Interestingly, one hindering event chain was derived from digital communication tools, even though they function in many organizations as basic tools for project work. The digital tools used for team communication were considered to in fact prevent the necessary information flow and did not support the team collaboration. In addition, building trust was considered difficult in virtual working spaces. These communication difficulties via virtual channels are not only a challenge for project teams but are a wider question of new ways of working (Eurofound, 2023; Järvenpää and Leidner, 1999). Despite the huge digital step taken during the pandemic, the sense of belonging and sense of being heard in virtual working spaces is not yet a self-evident fact (Griep et al., 2021). Since digital communication is a basic way of communicating in projects in many organizations, it is important to put effort into the digital communication practices, not only in the sense of enabling shared leadership, but also to facilitate team collaboration from a larger perspective.

Multi-project environments may hinder the emergence of shared leadership due to team members strictly specified roles and insufficient resourcing. Once one has a specified role in multiple projects, the time allocated for each project is minimal which does not give space for additional responsibilities (e.g. leadership roles). This originates from two distinct causes. First, in multi-project environments a team member may have a smaller role in the specific project, and therefore engagement in the shared goals of the project may be weak. Secondly, the time allocated for each project is calculated precisely to cover the time spent on the specific task, and nothing else. This interferes with team collaboration from individual workers and other team members' perspectives, leaving the team member in an outer circle, as Borg and Söderlund (2014) found earlier. The individual worker may lack a sense of belonging and the team collaboration is disturbed because of these

minor interventions.

Our research found that vertical leadership practices hinder the emergence of shared leadership in project teams. At the individual level this refers to the project manager's behavior of keeping the decision making to them self. At the organizational levels, vertical leadership practices refer to organizations strictly guiding the processes of project management. Despite project work consisting of certain tasks which cannot be distributed to team members, such as responsibility for budget and time-management, many other leadership roles can be shared. In cases where the project manager's leadership practice is centralized, or the power is held at higher levels in the organization's hierarchy, the opportunities for sharing the leadership within the team are weak. Additionally, if the organization's culture relies on vertical leadership, the project teams may be challenged to implement shared leadership practices, which is consistent with previous studies (see e.g. Scott-Young et al., 2019).

5.3. Practical implications

We suggest that project teams put effort into team member's engagement in shared project goals throughout the whole project life cycle. Discussing and clarifying the shared goals of the project and team members' role in achieving them not only explains the team member's role, but also strengthens the team member's engagement and creates space for shared leadership. Project work itself with its different phases create venues for re-organizing the responsibilities. Once the project manager and team members recognize these phases as new opportunities for responsibility changes, the project team benefits from the positive consequences of shared leadership such as improved performance (Wang et al., 2014), team cohesion and satisfaction (Bergman et al., 2012). Additionally, our practical contribution highlights the importance of team members' diverse backgrounds in regard of experience and competences; even though diversity may increase coordination and communication challenges (Tyssen et al., 2013). In practice, including diverse experiences in project teams should also be considered in the light of shared leadership. In challenging events during a project's life span, the experienced team member may take the leadership and impel the team towards shared goals.

5.4. Limitations and future research

We have identified the following limitations in this empirical research. Most of the project teams were from the domain of new product development or investment projects in the medical industry. In this field the project teams need to focus on innovation in the development of new products and at the same time consider detailed regulations of the focal field. Therefore, some event chains, such as the ones deriving from changes in product specification can be seen as industry specific. However, diversity of project contexts allowed us to explore the events affecting the emergence of shared leadership from a holistic perspective. We used Activity Theory for exploring project teams as working systems within larger organizations without getting into deeper contextual insights. We aimed at finding events in project life span that affect the emergence of shared leadership. However, a more in-depth contextual exploration of the role of these events in emergence would advance the research of shared leadership in project teams in the future. Every organization implements project work according to their own specific contextual characteristics, in a specific organizational culture. This study did not distinguish between different types of organizations, but in future research, we suggest exploring the emergence of shared leadership using multiple cases to reveal the contextual features. Different project management models or maturity levels might reveal new insights into the research of shared leadership. The collaboration of three researchers analyzing the data contributed richness and multiple perspectives. However, misinterpretations are possible. Future research should also consider the size and characteristics of the project teams and the type of project in the emergence of shared leadership. In addition, the consequences of shared leadership for project team members well-being at work, such as job engagement, would be interesting to study.

5.5. Conclusion

Our findings contribute to project leadership research by identifying the role of event chains triggering the emergence of shared leadership in project teams. We found that during the project life cycle many project work specific event chains trigger the emergence of shared leadership. The event chains overlap and may have an effect over a longer period of time or trigger shared leadership in a shorter timeframe. The findings highlight the importance of team member's engagement in project goals, diverse team composition with strong experience and competence.

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CRediT authorship contribution statement

Marion Karppi: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Heli Aramo-Immonen:** Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Ursula Hyrkkänen:** Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Markku Jokisaari:** Writing – review & editing, Supervision, Funding acquisition, Data curation, Conceptualization, Methodology.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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