Employee involvement and participation in digital transformation: a combined analysis of literature and practitioners' expertise

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Abstract

Purpose – This paper provides a systematization of the existing body of literature on both employee participation goals and the intervention formats in the context of organizational change. Furthermore, degrees of employee involvement that the intervention formats address are identified and related to the goals of employee participation. On this basis, determinants of employee involvement and participation in the context of digital transformation are unveiled.

Design/methodology/approach – Based on a systematic literature review the authors structure and relate employee participation goals and formats. Through a workshop with expert practitioners, the authors transfer and enhance these theoretical findings in the context of digital transformation. Experts rated the three most important goals and identified accompanying success factors, barriers and effects.

Findings – The results show that it is not necessarily the degree of involvement but a context-specific selection of measures, the quality of their implementation as well as the actual uptake of suggestions and activities developed by employees that contribute to employees accepting and participating in goal-directed transformations. Moreover, employees must have sufficient information and time for their participation in transformation processes.

Originality/value – This paper is based on a transformative approach, combining literature analysis to identify formats and goals of employee participation with experiential knowledge of digital transformation practitioners. In addition to relating intervention formats to goals pursued in organizational change processes, empirical and experiential perspectives are used to identify three very relevant goals and respective determinants in digital transformation processes.

Keywords Digital transformation, Employee involvement, Employee participation, Expert workshop, Organizational change, Systematic literature review

Paper type Research paper

1. Introduction

Organizations across sectors are seeing their operations rapidly digitalized. Debates on digital transformation focus mainly on technical aspects (Butollo *et al.*, 2022; Matt *et al.*, 2015), but increasing attention is being paid to labor- and employee-related implications such as changes in employee participation practices (Kane, 2019; Bosch and Schmitz-Kießler, 2020; Tabrizi *et al.*, 2019). Transformation projects heavily rely on the involvement of their employees to increase implementation velocity (Hussain *et al.*, 2018) and transformation success (Sverke *et al.*, 2008). How such transformation projects are approached subjectively varies and can lead to different attitudes among employees concerning transformation projects and thus implementation outcomes. A major aim of employee involvement is to turn those affected by change into active co-creators in the process, involving them in the respective design and decision processes (Vroom and Yetton, 1973). This can lead to greater acceptance of change (Oreg, 2006).

Employee involvement and participation (EIP) has various characteristics. In this contribution, we refer to EIP as the incorporation of employees in organizational decision-making (Marchington and Wilkinson, 2005). EIP is applied to support the achievement of a variety of different goals. To implement EIP processes, various deliberate activities, initiatives and programs which aim to increase EIP in organizational decision-making processes are applied. We refer to such activities, initiatives and programs as *intervention formats*. These can range from sending newsletters, conducting workshop series, trade union representation (Holden, 1996) and gain-sharing plans (Brown, 1990) to incorporating employees into work design (Mattila *et al.*, 2007), and are applied to support the achievement of a variety of different goals associated with EIP in the context of organizational change. Due to the breadth and depth of the topic, it is necessary to systematize EIP formats and goals to transfer existing knowledge to the context of digital transformation. Vereycken *et al.* (2021) have conducted a systematic literature review on employee participation in Industry 4.0 and identified a techno-optimistic, a socio-technical and a critical perspective on EIP. However, to our knowledge, there is no structured investigation in the literature which analyzes the types of intervention formats that have been applied to achieve specific goals in the context of organizational transformation processes. Therefore, the first research question is:

RQ1. Which types of EIP intervention formats have been documented to achieve which goals within the context of organizational transformation processes?

Within EIP initiatives, the role of employees and their degree of involvement vary across levels of power and authorization. The latter refers to "the extent to which employees are able to influence decisions about various aspects of management" (Marchington and Wilkinson, 2005, p. 400). The degrees can be qualitatively distinguished and range from unidirectional *information* of employees, two-way *communication*, *consultation* (by providing information, advice, and opinions, but the final decision remains with top management), *co-determination* (which is characterized by cooperation between management and workers in decision-making) to mutual or employee *control* (the long-term handover of specific tasks, resulting in self-determined decision-making on this task) (Marchington *et al.*, 1992, p. 8). With a focus on transformation processes, this leads to the second research question:

RQ2. Which degree of involvement is utilized to achieve which goals within the context of organizational transformation processes?

Employee participation measures lead to higher levels of commitment among employees (Gallie *et al.*, 2001); they also affect employees' readiness to change (Azzuhri, 2018) and improve their satisfaction with the workplace (Zink, 2008). From this, we can assume a positive relationship between effectively conducting transformation projects and organizational success in the long run (Markus, 2004). Digital technologies are currently influencing the transformation of many organizations across industries: they are changing their business models, value propositions

and characteristics, and creating a new organizational identity in the process (Wessel *et al.*, 2021). However, there are no papers on employee participation in digital transformation yet. It is unclear what the most relevant organizational goals for employee participation in digital transformation are. Furthermore, determinants such as success factors, barriers and the effects of the formats on employees and the organization are uncertain. Therefore, we ask:

RQ3. Which are the most relevant goals pursued with the help of EIP in digital transformation processes, and what are their determinants?

To address these questions, this paper identifies and structures formats of EIP and transfers them to the context of digital transformation projects. First, a systematic literature review was conducted to identify relevant characteristics of EIP (such as goals, intervention formats, degree of involvement, success factors, barriers, effects). Here, different theories were integrated based on representative and central literature to gain both a comprehensive understanding of the state of EIP research in the context of organizational transformation. The results are organized conceptually, according to intervention format types for EIP and the organizational goals in which these formats were implemented. The next step was to interview a panel of experts on their perception of the most important goals of digital transformation projects. The three goals assessed to be the most important were elaborated and discussed in an expert workshop. The results of this work are a systemization of organizational goals relating to an intervention format utilized for employee participation, organized along the degree of involvement (the goals and formats represent). Furthermore, the three goals of *employee satisfaction*, *knowledge and experience exchange* and *acceptance of change measures* are placed in the context of digital transformation, and framework conditions are identified.

2. Material and methods
Following a multi-methods research design (cf. Fischer *et al.*, 2019; Martens and Carvalho, 2016) that is particularly suitable to provide a more complete vision of a specific problem (Almeida, 2018; Broadfoot *et al.*, 2004) as well as in alignment with a transdisciplinary approach in which research and practice co-create a respective solution space (Renn, 2021) two distinct methods were combined to answer the research questions. First, data were collected and systematized via a literature review (Sec. 3.1). Based on the results, an expert workshop with practitioners was conducted to assess the most relevant formats for EIP and goals of transformation projects for the digital transformation of organizations (Sec. 3.2).

2.1 Preparation, data collection and analysis of the review
The method chosen for this literature review followed the PRISMA guidelines (Moher *et al.*, 2015) and was performed in a three step process. The initial dataset was created using the SCOPUS database. The database was queried for all *journal articles* and *conference papers* containing a specific combination of keywords (see Table 1) in their *title* and *abstract* items, which were listed

Search query as used for advanced search
TITLE-ABS("employee* participat*" OR "employee* involv*")
AND TITLE-ABS("factor" OR "factors" OR "determinant*" OR "aspect*" OR "caus*" OR "influenc*" OR "circumstance*" OR "characteristic*" OR "effect*")
AND TITLE-ABS("transformation" OR "change" OR "conversion")
AND (SRCTYPE(j) OR SRCTYPE (p))
AND (SUBJAREA(busi) OR SUBJAREA (comp) OR SUBJAREA (SOCI))
Note(s): https://www.scopus.com/search/form.uri?display=advanced
Source(s): Authors work

Table 1.
SCOPUS Query as used in 01/2021 for the identification of the literature basis

in the top-level research SCOPUS categories *Business Management & Accounting, Social Sciences* or *Computer Science*. In this study, the focus was on the formal details of the participation processes (such as intervention formats), their effects on the transformation of the organizations and the involvement of the employees. Closely related topics such as the subjective perception of these processes by individual participants were beyond the focus of this study, which is why we have decided not to include SCOPUS categories such as *Psychology*.

The query was designed so that the dataset included all publications registered in the database until January 2021. The search string (Table 1) of the query was developed to represent the core constructs of the three research questions: employee involvement and participation, factors (or characteristics) influencing employee involvement and participation in studies of organizational transformation or change. This initial query identified 283 potentially relevant entries in the database.

Manual prescreening of *title*, *abstract* and *keywords* for each of the identified data set entries was conducted by two authors separately using pre-defined inclusion and exclusion criteria (Table 2) to determine whether an article is eligible for the final literature basket.

The literature entries which were assessed individually during prescreening were then assessed in a group discussion process involving all authors until consensus on the inclusion or exclusion of each entry was reached. After prescreening the initial 283 entries, eight non-English items were removed and 96 entries were discarded due to non-relevance to the research focus. Eventually, the literature to be reviewed comprised 179 articles. Full texts for each of the selected articles were gathered and the articles were split among the authors for an in-depth qualitative analysis.

The body of literature was read carefully to identify all relevant text passages dealing with the four major categories characterizing the intervention.

(1) Intervention **format** type: the way in which the action of involving employees is carried out. Possible examples for an intervention format can be workshops with employees, newsletter for information or the establishment of task forces.

(2) **Goal** of the intervention: refers to the initially intended purpose of an intervention. An overarching general goal of all analyzed intervention formats is to involve employees into transformation processes. Apart from that there are more specific goals associated with employee participation processes, which can be, e.g. incorporate their know-how into the conceptualization of a change or to increase the quality of specific business processes.

Inclusion criteria
• Intervention format is applied in an organizational transformation process in which employees are confronted with changes in their working environment such as implementation of new technologies, new software or new processes
• Intervention format addresses the involvement and interaction with employee(s) or participation of employees in change processes
• Determinants (barriers, success factors, effects) of an intervention format are included in the data collection scheme

Exclusion criteria
• Paper does not relate to transformation processes, that is, they change according to technology, software and processes in the organization
• Content does not relate to employee participation
• Main text is not written in English
Source(s): Authors work

Table 2.
Inclusion and exclusion criteria for the final literature basket

(3) **Factors** influencing the effectiveness of the intervention: These factors determine the general setting or the concrete design and configuration of a specific intervention format, e.g. moderation and argumentation skills of a workshop moderator, or if there is sufficient time for discussions planned.

(4) **Effects** of the intervention: Effects are real implications that occur as a result of the intervention or its unintended consequences. E.g. an increased acceptance toward an upcoming change, or greater trust in management.

These characteristics have been inductively developed and then defined as they repeatedly occurred in the literature when conducting a qualitative content analysis following Miles and Huberman (1994). This involved (1) reducing the data via discovering patterns of themes according to semantic closeness or contextual similarity in the data and respective coding; (2) transforming the data, as the respective content was related and coded according to the above mentioned characteristics (see for example Table 3); (3) ensuring trustworthiness of the process and results through contrasting different items and discuss them among the authors; (4) drawing conclusions and refining the types of intervention formats and goals of EIP. The clustering of intervention formats and EIP goals into thematic categories required several rounds of redefining identifier and defining characteristics of the categories. Therefore, text snippets describing the characteristics of the respective intervention were extracted from the articles. This content was organized by summarizing all relevant information into a scheme consisting of the main characteristics related to the intervention format described: *intervention format*, *intervention format label* (identifier for categorization of the intervention formats), *goal*, *effect* and *level of involvement*.

The degree of involvement was determined according to Marchington *et al.* (1992) (see Introduction). Furthermore, the categories *delegation* (the individual handover of tasks to employees resulting in self-determined decision-making), *intervention programs* (which was used for interventions comprising multiple different intervention formats) and *training measures* were introduced on the basis of the data.

2.2 Preparation, data collection and analysis of the workshops
In preparation for the practitioner workshop, the participants (Table 4) were asked to list the most important goals, intervention formats, barriers and general framework conditions for digital transformation projects. The goals were then ranked by number of occurrences; then,

Intervention format (original text)	HHS [Human health service] ignite accelerator: Provide HHS employees with the opportunity to submit untested or unproven ideas that, although potentially risky, could also simultaneously serve as a source of new solutions to existing organizational challenges and problems. The program was launched with the intention of harnessing the best ideas from HHS employees and providing a safe, yet structured space in which to test and validate them
Intervention format type	Informal information collection
Intervention format (label)	Suggestion system
Goal of the intervention format (original text)	Innovation and entrepreneurship aimed to improve workforce problem-solving capabilities and mission results; improve the efficiency and effectiveness of programs
Goal (categorized)	Change organizational culture; support innovation processes
Degree of involvement	Consultation
Source(s): Authors work	

Table 3.
Analysis scheme

Participant	Institution	Role
1	Union training center BCE	Deputy head union training center and educational officer
2	Consulting firm	Consultant and project lead digitization and participation
3	International consulting firm – CIO advisory	Consultant
4	Multinational conglomerate corporation	HR Business Partner
5	Union training center IGM	Educational officer
6	SME	Employee representative and change project leader
7	Consulting firm	Change manager
8	Consulting firm	Strategist and trainer, learning concept developer, start up coach
9	Consulting firm	Change manager
Source(s): Authors work		

Table 4.
Demographics of participants

the goals to be discussed in the workshop were selected. For the three most often mentioned goals, the theoretical basis identified in the literature review was compiled to inform the participants in the workshop.

The aim of the workshop was to integrate theoretical and practical knowledge on the most relevant goals, intervention formats, influencing factors and effects in the context of EIP in digital transformation. To achieve this goal, the most highly ranked goals (knowledge and experience exchange, employee satisfaction, transformation acceptance) were introduced from a theoretical perspective based on the findings of the literature review and then discussed with the practitioners. The workshop was held virtually. A web-based canvas tool for distributed collaboration was used to synthesize individual results and to structure the discussion. For each goal, participants were given five minutes to structure their input. This input was then presented to the online audience and openly discussed among all participants. Two of the authors took notes about key aspects mentioned in the discussion and then complemented the data collection on the canvas. After the discussions, theoretical underpinnings identified in the literature review were presented to the participants. To some extent, these complemented the participants' perspectives and stimulated further discussion. At the end, results were summarized, and participants were instructed to conduct a post-evaluation of the workshop results.

To further condense the results, participants were contacted via email and were provided with an assessment sheet which comprises a synthesis of theoretical findings and workshop results for each of the three discussed goals. On this basis, the participants ranked respective *intervention formats*, *success factors*, *barriers* and *effects* by their relevance for attaining the respective goal. Participants were asked to assign three points in each category – and were allowed to assign all three points to the same item. The scores of all evaluation sheets were added up to create a ranking of category items representing the perceived relevance of the items for practitioners with experience in digital transformation projects. The post-evaluation allowed identifying the most important employee involvement and participation *formats* for the three selected goals, along with their *barriers*, *success factors* and *effects* in the context of digital transformation.

3. Results
3.1 Goals and intervention format types of employee participation
Multiple goals of employee participation in the context of transformation processes were identified in the literature and organized into thematic categories (see Method Section). To reach

these goals, different intervention formats were identified and clustered into thematic categories (so-called "intervention format types," see supplementary material a (Source: Authors work) for the mapping of intervention formats and intervention format types). Table 5 provides an overview of the relationships between goals and the applied intervention format types. For a more detailed textual description of the respective intervention formats that are applied to reach the envisaged goals please see supplementary material b (Source: Authors work).

Figure 1 shows a Sankey diagram in which the goals are related with the respective intervention format types. The corresponding occurrences of the goals and format types in the data set are emphasized. Changing organizational culture is the most occurring goal and continuous intervention program the most applied format type.

Relating the different goals of employee participation processes in organizational transformation to the respective degrees of involvement – linked via the intervention format types listed for the respective goals – reveals that singular information measures are rarely applied and mid-to-high involvement in terms of co-determination or delegation is less practiced (Table 6). Most intervention formats are applied as multiple format intervention programs and on the degree of consultation, followed by formats on the degree of control and training measures, delegation and communication.

3.2 Employee involvement and participation in digital transformation projects

Within the workshop, the three most relevant goals of employee participation in digital transformation were discussed with nine digital transformation experts to identify, and

	Information provision	Informal information collection	Formal information collection	Informal personal communication	Formal personal communication	Tool-based communication	Large group consultation	Event-based group consultation	Interorganizational group consultation	Consultation of representatives	Delegation to representatives	Experimental (Pilot) Group	Working group	Financial benefit scheme	Training measure	Event-based intervention program	Continuous intervention program
Promoting fairness and equal pay														■			■
Re-organization					■					■							■
Identify shared values and increase employee commitment														■		■	■
Increase employee involvement and participation				■	■					■							■
Increase operational safety and IT security										■					■		■
Increase quality		■															■
Improve transformation acceptance										■							■
Improve performance and efficiency										■							■
Support innovation processes		■				■											■
Knowledge and experience exchange	■																■
Involvement in decision-making	■									■							■
Change organizational culture	■	■															■
Increase well-being and satisfaction of employees	■									■							■
Introducing a new IT system																	■

Source(s): Authors work

Table 5.
Overview of the relationships between intervention format types and goals of employee participation; cells highlighted in gray show identified relations

Figure 1.
Organizational
transformation goals in
context of EIP and
intervention format
types identified in the
literature related by
number of papers

Source(s): Authors work

assess the most relevant intervention formats for realizing digital transformation through employee participation, along with the success factors, barriers and effects associated with these formats. In the following, the synthesized findings are presented for each of these three goals.

3.2.1 Knowledge and experience exchange. The three most relevant interventions according to the ranking of the workshop participants are formats which connect developers with users, formats for the exchange of lessons learned (so-called "Fuck-up sessions"), and formats which allow engaging in cross-company networks (Figure 2). Cross-company networks are especially useful when internal knowledge exchange is difficult as they can foster a more open exchange. Furthermore, the use of enterprise social networks like Yammer, Confluence or Sharepoint is seen as valuable, as is the use of formats which aim to improve bottom-up development of both training measures and the operationalization of concepts.

	Promoting fairness and equal pay	Re-organization	Identify shared values and increase employee commitment	Increase employee involvement and participation	Increase operational safety and IT security	Increase quality	Improve transformation acceptance	Improve performance and efficiency	Support innovation processes	Knowledge and experience exchange	Involvement in decision-making	Change organizational culture	Increase well-being and satisfaction of employees	Introducing a new IT system
Information										▨				
Communication		▨							▨	▨				
Consultation			▨	▨		▨						▨		
Co-determination	▨			▨										
Delegation		▨				▨					▨			
Control	▨				▨									
Muliple format intervention program	▨	▨	▨	▨	▨							▨	▨	
Training			▨	▨	▨			▨				▨	▨	

Source(s): Authors work

Table 6.
Degrees of
involvement and goals
of employee
participation

Note(s): Numbers in brackets show the absolute number of relevance points assigned by the experts. Items with an asterisk originate from the literature. Items without an asterisk were developed within the workshop

Source(s): Authors work

Figure 2.
Top three rated
interventions and
determinants that
influence knowledge
and experience
exchange in the context
of digital
transformation

Barriers that hinder knowledge and experience exchange are the availability of employees as well as time limitations due to ongoing transformation projects or day-to-day business. Especially employees on the shop floor are restricted due to their time clock, working hours and the work system. For example, limited access to computers, and no leeway for mutual exchange in their working time hinder knowledge exchange. Opportunities also need to be actively provided to involve shop floor workers. Furthermore, hierarchical barriers must be considered as they can impede knowledge and experience exchange among employees.

Lastly, self-reflection and comparison of one's own behavior influences knowledge and experience exchange and introspection might be perceived as unpleasant by some employees.

The top three factors influencing the success of intervention formats highlight the need to work in small groups as this can facilitate knowledge and experience exchange. The permutation of people within these groups helps employees to connect who have few overlapping areas otherwise. Another important motivation for running small groups is the improvement of communication culture so that everybody's voice is heard. The workshop participants also stressed that knowledge management should be conceptualized and understood by employees as an integral part of their work for exchange to succeed. Additionally, employee participation needs to be rewarded – employees must feel appreciated for their involvement.

The application of interventions aiming to increase knowledge and experience exchange among employees can lead to effects such as: more openness and willingness of individuals to learn about new trends, increase the self-efficacy of colleagues and foster mutual learning.

Notably, the expert group rated only six items as relevant for digital transformation that were also identified in the literature review.

3.2.2 Increase well-being and satisfaction of employees. The application of human-centered design principles in all steps of the change process was rated the most important for increasing the well-being and satisfaction of employees (Figure 3). These principles include the incorporation of employees in coming up with solutions by means of either co-design practices or understanding employees' needs. This involves listening to employees from the beginning of a transformation project and recognizing their desire for changes. Furthermore, validation loops with employees are important both to match tasks to technology and to ensure that employees feel heard. The second most important intervention to realize employee satisfaction is pointing out the vision of the change project. Employees need to see where the transformation is going, and understand its rationale and its implications for their work. The advantages and disadvantages for the individual employee need to be explained. The third most relevant intervention according to the participants is the delegate principle, which is that participants of change committees should not solely be selected by the management but elected by employees. Furthermore, a level playing field in discussions involving participants from multiple levels of organizations is considered important. While excessive demands should be avoided, the workshop participants agreed that in general the more actively employees are involved, the better the results.

The principal barrier to the success of these measures is ambiguities of any kind. It must be clearly communicated what the specific goals are, what happens to the results and whether the result can harm the employees. Excessive demands are the second highest rated barrier.

Figure 3.
Top three rated interventions and determinants that influence employee satisfaction in the context of digital transformation

Note(s): Numbers in brackets show the absolute number of relevance points assigned by the experts. Items with an asterisk originate from the literature. Items without an asterisk were developed within the workshop
Source(s): Authors work

If too much effort is required for participation formats, or content or methods are very unfamiliar and thus too far away from employees' everyday work, employees see the process as a burden. An example is when logistics workers are asked to discuss sales processes for implementing a new ERP system, or create a multi-criteria pairwise comparison from different perspectives to decide on a process design when simple heuristics would do the job. The feeling of having no voice in the digital transformation is the third barrier to employee satisfaction and well-being and has negative (or at least no positive) implications for the transformation project.

Implementing holistic interventions is the highest rated success factor. The earlier an employee can participate and the longer they are involved, the better it is for both employees and the transformation project. Another important factor is that the work is meaningful. Employees will only be willing to get involved if they see the value of the transformation in general and their specific efforts within it. Furthermore, participation does not end with asking employees about their needs. It is highly important to take the gathered input into consideration, make the process and the results transparent, consider feedback and at best implement employee suggestions.

Besides increasing employee satisfaction, the application of these formats was considered to have other effects, too. First, exchange among employees is stimulated and with it, the diffusion of knowledge. Another effect is that awareness is created for the problems of employees within the organization. This can lead to the improvement of work or business processes as well. Participants also suggested that, if employees feel listened to and taken along in collaboration, their satisfaction is likely to be higher. As a result, their openness toward the next project can rise.

Interestingly, only three items identified by the literature review were rated as important for the digital transformation by workshop participants in the context of this goal.

3.2.3 Improve transformation acceptance. Workshops with peers and other staff on the topic of technical developments and changing qualifications are the highest rated intervention format for *improving transformation acceptance* among employees (Figure 4). Qualification has been emphasized to reduce negative attitudes when employees realize that they are well prepared for the changes. The second highest rated are product and service development workshops involving employees from different disciplines and departments to develop new business models or integrate new methods into everyday work. Participants also suggested that employee involvement and opportunities to co-design change initiatives increase transformation acceptance. Engaging employees to understand the current situation and

Note(s): Numbers in brackets show the absolute number of relevance points assigned by the experts. Items with an asterisk originate from the literature. Items without an asterisk were developed within the workshop

Source(s): Authors work

Figure 4.
Top three rated interventions and determinants that influence transformation acceptance in digital transformation

clarifying target situations is another highly rated intervention to improve transformation acceptance. It entails understanding employees' everyday work, inquiring what hurdles employees see, and understanding the needs or wishes employees have for, e.g. redesigning their work system, changing procedures or regarding their personal involvement.

The highest rated barrier is no or too little time to work on transformation projects. This can have many origins such as being stuck in demands by everyday work or diverging projects with conflicting priorities. Another aspect is the lack of communication of results, which is stated as a main barrier to improving transformation acceptance. Furthermore, negative experiences from earlier participation projects lead to negative attitudes and consequently hinder the success of digital transformation projects.

Success factors in interventions for improving transformation acceptance are clear communication of responsibilities for the process and clarity regarding the alteration of tasks, positions and roles of employees. Transparency seems to be key for successful transformation projects. Furthermore, experienced facilitation of workshops and the creation of safe spaces for feedback are considered important. Operational blindness needs to be avoided. It is also crucial that managers and employees alike ensure and acknowledge the openness of the transformation processes, which means that failures are tolerated and understood as part of any development, and are taken as opportunities to learn from.

Regarding the effects of intervention formats designed to improve transformation acceptance, participants stressed the importance of employees feeling valued. Involved employees are more likely to understand and take part in shaping the transformation. Moreover, employees who play an active role in transformation projects are expected to feel more satisfied, according to the expert panel.

4. Discussion

4.1 Goals and intervention format types for employee participation in organizational change

We have identified a broad variety of intervention format types and goal categories in the context of organizational change in the literature. By mapping both, we have shown some particularities. Now we turn to discuss these results.

Introducing a new IT system is comprehensively addressed via continuous intervention programs, which acknowledges the complex changes that often induce alterations in processes and tasks of the employees which come along with new IT systems. This also takes into consideration that EIP around new IT increases the technology's effectiveness (Litwin, 2011). This supports findings in the literature stating that envisioning participation is an effective means to different ends such as greater understanding and acceptance of decisions by subordinates (McDermott *et al.*, 1993), increased perceived fairness (Rogiest *et al.*, 2015) and the credibility that management has with employees (Power and Sohal, 1997). *Changing organizational culture* is another goal that seems difficult to achieve. This is not only evident from the relatively large number of papers dealing with this goal, but also from the fact that many different formats are mentioned in this context. Moreover, the examples found in the data regarding this goal are often associated with a relatively high degree of involvement, such as the implementation of autonomous work groups to enable more self-responsible behavior (Bramble, 1989).

Overall, we found comparatively less literature concerned with "softer" goals – which are generally desirable in change projects – focusing on employee attitude and behavioral change, such as *improving transformation acceptance* or *identifying shared values and increasing employee commitment*. The lack of direct attribution of employees' respective contribution to change outcomes and organizational performance might serve as an explanation, even if it is widely acknowledged that a positive attitude among employees (Barki and Huff, 1985), their commitment (Parish *et al.*, 2008) and shared values (Ertürk, 2008) positively affect the outcome of change processes. Even though they do not directly

contribute to classical key performance indicators, goals of this type play an important role in transformation processes and seem to be an important motivation for pursuing EIP measures. This is emphasized in the expert ranking: two out of three goals addressing the digital transformation specifically address generally desirable organizational aspects enabling change to be more likely to succeed. A relatively large strand of the analyzed literature concerned with EIP deals with quality or efficiency improvements of products, employee well-being and services or processes with the ultimate aim to improve organizational performance. Herein, there already seems to be a scientific consensus that employees who are actively involved in organizational change processes are more likely to improve their performance (Bednall *et al.*, 2014; Naeem, 2019), e.g. via training measures or increased intrinsic motivation, in conducting their job within the new work system. Participation can also increase the well-being of employees (Sverke *et al.*, 2008), which in turn can support the efficacy of participation measures in the context of change processes (Wright and Cropanzano, 2000). This leads to the assumption that participation should be accompanied by means to foster job satisfaction and reduce mental exhaustion. Participation in decision-making and employee commitment to change are more important for employee attitude and health than the perception of organizational justice toward change (Sverke *et al.*, 2008). From this, we conclude that activities with higher degrees of involvement are beneficial on multiple levels in the context of organizational change compared to solely acting on lower degrees, e.g. only informing employees about organizational changes.

However, while a higher level of degrees may require more resources in their realization, taking care to incorporate very good or best communication practices are key factors in both organizational transformation *and* when implementing participatory processes in a company (Abu El-Ella *et al.*, 2013; Garmann-Johnsen *et al.*, 2018; Levin and Baruch Ben-Abou, 2020).

4.2 Degrees of involvement in organizational change
In the literature, *promoting fairness and equal pay* is addressed with very high degrees of participation, namely *control* and *co-determination*). By contrast, *knowledge and experience exchange* is solely addressed with the degrees of *information*, *communication* and *consultation*, which seems counterintuitive since knowledge management requires higher degrees of involvement to unleash its full potential (*cf.* Nonaka and Takeuchi, 1995). *Improving performance and efficiency* is solely addressed using intervention programs or training measures, since those processes are of a complex nature and require mid-to long-term engagement to understand the flaws of the current situation, design to-be situations and train employees accordingly.

Based on our findings, we conclude that measures on all degrees have their merits, but they depend on target-group specific characteristics and the overall purpose of the participation process. On the entry degrees, *information* provision is fundamental to enabling employees to participate, that is, providing information on specific opportunities to engage and train them for responsible participation. Employee trust can be strengthened through continuous and transparent *communication* as well as feedback opportunities and available contact persons. Bottom-up approaches like suggestion systems allowing for the consultation of employees also positively affect their attitude (Lysova *et al.*, 2015). Following the literature, practices related to the degree of *consultation* have positive effects, as these have a significant positive correlation with commitment and a significant negative correlation with employees' intention to leave the company (Cartwright *et al.*, 2007). *Co-determination* via involvement in decision-making is applied in different situations in the work context, and supporting literature states that a high degree of involvement in decision-making is associated with employee satisfaction (Spinelli and Canavos, 2000). This in turn represents greater extents of participation which need to be expanded in application. The *delegation* of tasks directly to employees allows for more motivation (Zhang *et al.*, 2012), while *delegation* to unions

(Holden, 1996) is a measure to ensure indirect involvement in decision-making processes. The degree of *control* is mainly related to financial benefit schemes such as employee ownership plans (Pendleton *et al.*, 1995), individual and team reward systems (Jazayeri and Hopper, 1999) and gain-sharing plans (Brown, 1990).

An intensively reported intervention format type for this degree of involvement is the institutionalization of autonomous work groups (Bramble, 1989). However, in these, control is *de facto* limited by the scope of the working group. It could be further expanded by receiving more authority and competences in the future. This would also be in line with the assumption that the future of work will require more creative (Rahmat *et al.*, 2019) or autonomous activities (Ebert and Duarte, 2018). Knowledge and experience exchange is not primarily addressed with *intervention programs* in the context of EIP. This is counterintuitive since knowledge management in general requires both a comprehensive approach (Shujahat *et al.*, 2017; Sousa and Rocha, 2019) and active roles as well as involvement of the employees (Naqshbandi *et al.*, 2019), especially when focusing on explicating or socializing tacit knowledge and experiences.

EIP as documented in the literature is more often associated with lower degrees of involvement. Higher degrees like *co-determination*, *delegation* or independent responsibility and *control* are less often realized. This goes hand in hand with classical, hierarchical management approaches that concentrate power centrally and avoid the potential risks or effects of decentralization. Most of the formats addressing the degree of *control* are financial benefit schemes; these are often characterized as participation but do not necessarily lead to the involvement of employees in organizational decision-making and design (Pendleton *et al.*, 1995).

In summary, only few goals are implemented with a high degree of involvement; most are addressed by multiple format intervention programs and are partially complemented with training measures. The question arises as to whether and why organizations shy away from applying formats with more involvement, even in cases where these seem to be clearly promising. Although it entails a loss of control for upper-level managers, decentralizing decision power improves the utilization of information scattered throughout the lower levels of an organization's hierarchy (Zabojnik, 2002). Thus, delegation especially to lower levels seems to have merits for an organization.

4.3 Goals and determinants of employee participation for the digital transformation

Workshop experts have identified additional intervention formats, success factors, barriers and effects which do not play a prominent role in the literature. A central theme is the human-centered design, e.g. within mutual as-is and to-be analysis, the consideration of employee suggestions for improvement and their continuous integration into change activities from beginning to end of the transformation. In other words, most aspects mentioned centered on the integration of a bottom-up employee perspective into the organization. The bottom-up development of training and deployment concepts is a specification of this general demand for the integration of employee voices into company processes (Al Remeithi and Ahmad, 2020). The mentioned barrier of introspection also leads to the assumption that self-reflection and comparison among employees needs to be considered with sensitiveness. Employees that are shining beacons of change can hinder other employees by making them feel less positively motivated, or they might hamper change activities in general by constructing unintended dependencies on their teams (Pascale and Sternin, 2005).

4.3.1 Knowledge and experience exchange. Knowledge sharing formats among others ensure that all voices are heard (e.g. bottom-up through social networks) and that information is not only selectively channeled through a certain hierarchical level. This increases both the quantity and quality of knowledge exchange and can have a positive effect on its velocity, especially when technology-enabled (Pandey *et al.*, 2021). Another factor is the reduction of inhibitions, e.g. by showing that mistakes occur and can be proactively handled.

Knowledge management is considered an important means for both digital transformation (Alvarenga *et al.*, 2020) and organizational excellence (Bornemann and Sammer, 2003), but it is not emphasized for the individual level. The need for employees to understand this as part of their own work is crucial. In digital transformation, the ubiquitous generation and availability of data and information in the digital space make integrated knowledge management strategies and the dissemination of information and knowledge even more important (Dragičević *et al.*, 2022). In particular, the involvement of employees in the creation, identification and retainment of knowledge and the implementation of knowledge-oriented company transformation can reduce barriers (Barratt-Pugh *et al.*, 2013).

4.3.2 Employee satisfaction. It was emphasized by the experts that the perspective of employees should be taken into account at every step of a digital transformation project: planning, conceptualization, implementation and evaluation. Low involvement in the planning stage, however, does not necessarily decrease employee commitment to a change as long as a comprehensible motivation is communicated with the employees (Chan and Hawkins, 2010). Furthermore, pointing out the bigger mission of the change along with continuous transparency regarding for example upcoming changes, activities and implications for the employees supports addressing employee needs. A high degree of involvement is not necessarily required for this purpose, according to the consulted experts. The explicated *delegation* principle highlights that employees should be more broadly involved in the change so that they can co-create the transformation. In this line, consistency with the rationale behind participation and thus within the activities is important. However, declaring participation and then solely *informing* or *consulting* employees is not beneficial for trust and may hamper organizational performance (Busari *et al.*, 2019). In this line, ambiguities of any kind and asking employees only about things that can be changed are two determinants that were over-proportionally emphasized in the workshop, in contrast to the analyzed literature, where they only played a marginal role. However, our research and the literature both emphasize the importance of clear, consistent and trustful communication and action.

4.3.3 Transformation acceptance. The intervention formats suggested by the experts make clear that the early involvement of employees in workshops for analysis, designing changes and discussing their implications is crucial. Acceptance, however, is not well achieved with singular measures; instead, continuously engaging employees is important for maintaining positive attitudes toward change. Workshops also allow for creating a multi-perspective knowledge base – this is the starting point for developing concrete measures for change and increasing acceptance of digital transformation. The literature suggests that acceptance of change is increased by organizational commitment, education and the presence of unions (Iverson, 1996), and that ensuring employee participation during the organizational transformation process encourages overall acceptance (Messmer, 2006). The literature, however, does not emphasize the need for understanding the nature of open-ended change processes as the experts in our research did for digital transformation.

The majority of the literature is concerned with concepts such as performance, efficiency or quality. Employee-oriented soft factors like sharing a mutual understanding were less prominently covered in our data set. However, the expert group in the workshop emphasized the importance of these factors, which may be an indication that they are more important for change processes in the digital transformation than in conventional change processes.

In the literature, *communication*, *consultation*, *delegation* and *control* were the prevailing degrees of involvement. In the workshops, intervention formats related to the degrees of *communication*, *consultation*, *co-determination* and *delegation* were only broadly picked up on. Interestingly, in contrast to the literature, actual *control* was not rated the most important aspect of employee participation by the expert group. This suggests that participation needs to be comprehensively implemented to impact company processes and outcomes positively, and power shifts are not of primary relevance in the digital transformation of an organization.

4.4 Limitations
There are several limitations to these findings. First, the focus on solely one publication database for querying academic literature inevitably led to a non-exhaustive dataset. Furthermore, as with every qualitative analysis, subjective biases such as individual interpretations of text sections cannot be ruled out, even though several assessment rounds for aligning perspectives on the content and the investigated constructs and group discussion of crucial items as well as revisions of coding guidelines were conducted. With regard to the typification of goals, there are some hierarchical interrelations between goals in transformation projects that were not considered. Furthermore, goals were not explicitly stated in every paper of the dataset. Where recognizable and deducible from statements in a paper, the goals were formulated by the authors; this opened the door for interpretation errors. To minimize this risk, goals in question were mutually discussed and then systematized. Additionally, measures for controlling the interpretational space in content analysis were not operationalized despite using a multi-coder strategy.

The generalizability of the results of the practice workshop is limited due to the non-representative selection of the experts and the limited number of participants. The focus on only three of the goals in the expert workshop format leaves the evaluation of identified intervention formats, success factors, barriers and effects in the context of digital transformation exemplary. Formats and determinants derived from the literature and presented to the experts were potentially differently perceived and evaluated by the participants compared to the items developed by themselves. This may have led to a different degree of familiarity among participants with the items during the ranking exercise performed separately after the workshop. Despite these limitations, our analysis can be taken as a good starting point for finding the most important goals in the context of employee involvement and participation in digital transformation processes. Furthermore, determinants are provided to practitioners pursuing these goals.

5. Conclusions
We have analyzed different intervention formats and goals of EIP from the academic literature on organizational change and combined them into a conceptual framework. For the first time, a comprehensive systematization of the existing body of literature on both the goals of EIP and their complex variety of intervention formats in organizational transformation processes was conducted. Our juxtaposition of the results is also new to the field. The framework we developed from this can be used by other researchers to create new intervention formats that fill existing gaps when no type is available to reach specific goals. Practitioners can use the matrix for selecting possible intervention formats to reach certain goals in the context of employee participation. Furthermore, prevalent degrees of employee participation that intervention formats are applied to have been identified.

Additionally, we have integrated the knowledge of practitioners to adapt the developed framework for the particularities of the current digital transformation of organizations. We have jointly elaborated the most promising intervention formats and determinants for the three goals rated as most relevant in the context of EIP for the digital transformation from a practitioner's perspective. We have also worked out and discussed the peculiarities of EIP in digital transformation compared to previous organizational changes and current theories. The workshop underlined that management must reflect critically on how pronounced the openness to implement possible results of the participation processes actually is before the degree of involvement for these processes is determined. It is not necessarily the highest degree, but rather a context-specific selection of EIP measures and even more importantly the integration and use of the suggestions and activities of the employees that is crucial for successful and effective employee participation in organizational change. Employees should

never be given the impression that their commitment and the ideas developed are only taken into account if they coincide with the ideas of their superiors, as this is very likely to lead to disappointment and consequently to resistance against the planned change initiative. Apart from this, it is also important to not only look at measurable performance indicators in the participation processes but also to consider change management aspects and goals addressing topics such as attitudes, shared values and organizational culture, as these seem to foster the success of transformation processes.

Participation in digital transformation is not technology-centered, as for example literature on Industry 4.0 suggests. Rather, it is employee-centered, as the majority of change management literature states. As such, employees must have sufficient time to gather information and participate in the transformation process. Our findings can be taken as a starting point to shape further scientific analysis in the context of participation in digital transformation processes. Practitioners can use our findings to design and improve their participation processes accordingly.

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Supplementary material
The supplementary material for this article can be found online.

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