Faster, Better, Happier – Internal Crowd Work as Form of Structural Empowerment for Employee Empowerment and Success

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Summary: ICW is gaining increasing importance as an innovative concept of digital work organization. This study examines ICW and its role as a structural empowerment tool driving the psychological empowerment of employees. This is done by means of a case study on a telecommunications company that has been successfully using ICW for more than ten years. Using a mixed-method approach, a model for an in-depth understanding of empowerment in ICW is exploratively developed based on qualitative data. Furthermore, organizational enablers in ICW are identified as important prerequisites and success factors. Additionally, the study shows how ICW as structural empowerment promotes psychological empowerment and can lead to higher speed, increased synergies, and higher employee satisfaction. A quantitative deep-dive provides additional figures on the structural empowerment mechanisms in ICW as well as on employee perceptions.

Keywords: Work organization, digital work organization, empowerment, psychological empowerment, internal crowd work, case study research

Schneller, besser, zufriedener – Interne Crowd Work als Form des strukturellen Empowerments für Erfolg und Mitarbeitenden-Empowerment

Zusammenfassung: ICW gewinnt als innovatives Konzept der digitalen Arbeitsorganisation an Bedeutung. Diese Studie untersucht ICW und dessen Rolle als strukturelles Empowerment-Instrument, zur Förderung des psychologischen Empowerments der Mitarbeitenden, mithilfe einer Fallstudie eines Telekommunikationsunternehmens, das ICW seit mehr als zehn Jahren erfolgreich einsetzt. Mithilfe eines Mixed-Method Ansatzes wird auf Basis qualitativer Daten explorativ ein Modell für ein tiefgreifendes Verständnis des Empowerments in ICW entwickelt. Weiterhin werden organisationale Enabler in ICW als wichtige Voraussetzungen und Erfolgsfaktoren identifiziert. Ausserdem wird gezeigt, wie ICW als strukturelles Empowerment das psychologische Empowerment fördert und zu höherer Geschwindigkeit, gesteigerten Synergien und höherer Zufriedenheit der Mitarbeitenden führen kann. Ein quantitativer Deep-Dive liefert zusätzlich Zahlen zu den strukturellen Empowerment-Mechanismen in ICW und zur Wahrnehmung der Mitarbeitenden.

Stichwörter: Arbeitsorganisation, Digitale Arbeitsorganisation, Empowerment, Psychologisches Empowerment, interne Crowd Work, Fallstudienforschung

1. Introduction

Digital transformation and the resulting changes pose major challenges for organizations. Companies are confronted with a volatile, uncertain, complex, and ambiguous (VUCA) business environment (*Bennett/Lemoine* 2014). Traditional approaches to planning, executing, and managing activities within organizations are changing (*Vreede et al.* 2016). Along with this development, new technical possibilities and digital forms of work organization (*Brynjolfsson/McAfee* 2014) are changing workflows and processes in organizations (*Peters* 2021; *Peters et al.* 2021), in some cases radically (*Blohm et al.* 2014). Such digital forms of work organization represent the shift away from the familiar and traditional work organization and provide new approaches to the way work is organized in a company. An innovative digital form of work that has seen continuous growth in recent years, spreading to almost all areas of value creation, is internal crowd work (ICW) (*Durward et al.* 2016). ICW represents digital gainful employment, which is based on the idea of crowdsourcing within the boundaries of a company. ICW refers to IT-based group or individual activities based on an open call for participation within a company (*Zuchowski et al.* 2016). Employees from different hierarchical and functional levels of the organization act as the internal crowd, working on tasks, submitting ideas, or creating forecasts using an internal IT-platform where tasks are placed via an open call. These ICW tasks must be handled either parallel or in addition to the normal workload (*Durward et al.* 2019).

ICW has become more and more widespread in recent years. Several companies, such as Siemens, McKinsey & Co (*Benbya/van Alstyne* 2011), Allianz (*Benbya/Leidner* 2018), or Evonik (*Zhu et al.* 2016), have implemented ICW. Academic interest has also increased in recent years, leading to the first studies on ICW (*Malhotra et al.* 2017; *Malhotra et al.* 2019). Thereby, most research activities to date have focused on an outcome perspective, which highlights the potentials and benefits for companies using ICW; a task perspective, which focuses on task design; and an employee perspective, which focuses mainly on the characteristics of individuals in ICW. Nevertheless, it remains obvious that research on ICW is still in its inception (*Malhotra et al.* 2017; *Zhu et al.* 2016; *Zuchowski et al.* 2016), especially regarding employees in ICW settings.

By leveraging their skills and their internal knowledge, employees are at the heart of the implementation of ICW. Despite their relevance for a successful implementation and application of ICW, the experiences and perceptions of employees have not been in the focus so far. Moreover, there are only a few studies to date that systematically analyze the role of employees for successful ICW and the experiences and perceptions of employees in ICW settings (*Deng et al.* 2016; *Durward et al.* 2019; *Durward et al.* 2020; *Simmert et al.* 2020). For example, there is scarce empirically validated insight concerning the psychological effects ICW might have on employees. This is even more important because working in ICW brings new and unfamiliar challenges for employees (*Knop/Blohm* 2018), and the parallel nature of work structures and processes through ICW increases complexity for employees (*Knop et al.* 2019). On this basis, ICW, with its corresponding structures and tasks, must be analyzed systematically, and employees must be examined regarding their experiences and perceptions (*Deng et al.* 2016; *Durward et al.* 2019; *Vom Brocke et al.* 2018). One of the established constructs associated with the perception of work by the individual and central success factor in implementing and using digital forms of work organization (i.e., ICW) is empowerment (*Durward et al.* 2019). In this context, empowerment can be understood as the ability of employees to achieve their organizational goals effectively and efficiently (*Elmes et al.*

2005). The concept of empowerment thus aims to ensure effective work design and offers the possibility of systematically creating structures and procedures for companies and employees. The systematic empowerment of a company and its employees can help to create agility, innovation, flexibility, and competitiveness, which enables the implementation of digital forms of work organization, such as ICW (*Durward et al.* 2019). Regarding the relevance of the empowerment concept, previous research has also shown that psychological empowerment is associated, for example, with job satisfaction and employee performance, employee commitment to the company, and employee innovation behavior (*Schermuly et al.* 2013; *Seibert et al.* 2011). In the field of information systems research and the research in digital forms of work organization, the concept of empowerment represents an opportunity to exploit the full potential of digital work organization.

Our research aims to fill this gap and thereby contributes to a deeper and more fundamental understanding of the employee's perspective in ICW. This knowledge is helpful for both science and practice (especially for the leaders responsible for ICW settings and campaigns) not only to better understand ICW, but also to build on these insights for further design and development of ICW. Therefore, we examine employee empowerment in ICW within the unique case of a company that has been using ICW successfully for more than ten years. This study draws on an exploratory mixed-method case study (*Yin* 2003) of a telecommunications company with more than 200.000 employees out of which 10.000 participate in ICW. The focus of the investigations is on the empowerment in ICW. Thereby, we investigate the interrelations of structural and psychological empowerment and its outcomes in ICW. Accordingly, we examine the research question: *How and why does ICW as a form of structural empowerment affect psychological empowerment?*

2. Theoretical Background

2.1 Internal Crowd Work

ICW can be defined by four characteristic elements: First, the creation of projects and tasks follows an open call within the company. Second, the employees decide whether they follow the call based on a completely voluntarily self-selection process and thus on their participation. Third, the value creation process is handled via an IT platform (ICW platform). And fourth, the called employees possess an employment contract with the company (*Durward et al.* 2016; *Zuchowski et al.* 2016).

Due to fundamental structural differences in the application of external and ICW, a transfer of the findings from external crowd work to ICW is only possible to a limited extent (*Knop et al.* 2017). One core differentiator from external crowd work is that the company's own employees represent an internal crowd and process ICW tasks and projects during their working hours (*Durward et al.* 2016) but beyond their regular duties. This involves embedding ICW into the existing organizational structures and processes, resulting in intentional collaboration among employees and technology (represented by the ICW platform) (*Durward et al.* 2019; *Zuchowski et al.* 2016). The structures in ICW thus enable flexible time-independent processing of tasks and projects by locally distributed employees. This creates new, agile work structures that transcend departmental boundaries and enable cross-functional collaboration. Overall, companies are trying to engage their employees with ICW to ensure that they use their innovative and creative ideas, for example, to improve work and production processes (*Elerud-Tryde/Hooge*

2014; *Erickson et al.* 2012). This creates an empowerment-oriented work environment (*Durward et al.* 2019; *Malhotra et al.* 2017) that brings together employees from different hierarchies and functions (*Villarroel/Reis* 2010) and combines departmental and local knowledge (*Benbya/van Alstyne* 2011).

In scientific literature, three research perspectives have emerged so far: an outcome perspective, a task perspective, and an employee perspective. The outcome perspective focuses primarily on implementation reasons such as the potentials and benefits for companies like improved productivity or co-creation of corporate strategy (*Jette et al.* 2015), quick access to ideas, competencies, internal knowledge, and innovativeness (*Beretta et al.* 2021; *Malhotra et al.* 2017; *Zuchowski et al.* 2016) beyond the involvement of respective technical experts (*Stieger et al.* 2012). The task perspective shows initial results on task formulation and definition (*Polish* 2021), classification (*Jette et al.* 2015; *Lopez et al.* 2010), and decomposition and allocation (*Lopez et al.* 2010; *Simula/Ahola* 2014). The employee perspective puts the focus on individuals. Thereby, the motivation and incentivization of employees play an important role (*Durward* 2020; *Polish* 2021). Furthermore, the focus has been on the benefits from the congruence of aims of the employees and companies (*Simula/Ahola* 2014). Moreover, some studies addressed the attributes of the employees in ICW, which were characterized by diversity (*Simula/Ahola* 2014), creativity, proactivity (*Zhu et al.* 2014) and self-organization (*Stieger et al.* 2012). Nevertheless, the experiences and perceptions of the employees influence the role of the individual in the success of ICW, which has been neglected in the literature. Against this background, our research takes the perspective of employees, in particular, in structuring the empowerment factors in ICW as well as the empowerment of employees in ICW.

In addition, there are a limited number of detailed studies on how companies successfully apply ICW over a longer period. This is because many initiatives around ICW adoption fail (*Beretta et al.* 2021; *Simula/Ahola* 2014). One reason why ICW initiatives fail, which at the same time reveals the need for systematic empowerment, is that many companies in change initiatives of organizational structures often focus on the structures and not on the people who ultimately have to work and adapt in the organizational structures (*Schermuly* 2019a). In addition, very few studies provide concrete insights on the performance outcomes of ICW (*Durward* 2020). We address these aspects in this paper by analyzing an ICW system that has been successfully operating for many years, by including concrete metrics on its success, and by involving employees' experiences and perceptions. Knowledge on this is particularly interesting for companies running ICW. By getting insights on the factors of structural empowerment in ICW in relation to the perception of employees and desired outcomes such as productivity (*Jette et al.* 2015), quick access to ideas, competencies, internal knowledge, and innovativeness (*Beretta et al.* 2021; *Malhotra et al.* 2017; *Zuchowski et al.* 2016), organizers of ICW will be able to specifically govern and influence employees to produce high quality results.

2.2 Empowerment

Empowerment has been established as a construct within the research on work and psychology (*Maynard et al.* 2012). Two approaches have emerged that are widely pursued by researchers and practitioners alike: structural and psychological empowerment (*Spreitzer* 2008).

Kanter (1977) introduced the concept of empowerment by developing structural ideas to decentralize power and authority in organizations. Accordingly, structural empowerment seeks to transfer the authority and responsibility from management to the employees through the design of work. The focus is on targeted change and adaptation of organizational structures. Along these lines, employees seek improved freedom to act and make decisions with the help of structures, policies, and practices, as well as better access to information, resources, and development options (*Kanter* 1977; *Spreitzer* 2008). These changes in organizational structures are implemented in companies, for example, through the use and introduction of more traditional forms such as job enrichment, job enlargement, job rotation or semi-autonomous groups or more modern forms such as new work initiatives and agile methods (e.g., Scrum, Kanban, Extreme Programming, DevOps, Holacracy, Design Thinking, innovation garages) (*Schermuly* 2019a) or, as in this case, ICW. All these measures provide employees with better access to needed resources, information, and support. In this way, employees at all hierarchical levels are empowered to make decisions in their workspace and about their work themselves (e.g., when and how to do the work) (*Spreitzer* 2008). One criticism of structural empowerment is that, because it focuses on organizational structures and practices, it considers the individual or the employee only to a limited extent. This is where psychological empowerment comes into action (*Spreitzer* 2008). The conceptualization of psychological empowerment concentrates on the employees' perceptions and the cognitive states resulting from organizational conditions (*Maynard et al.* 2012), for example, the individual experiences and motivational aspects of employees (*Schermuly* 2016). According to *Conger and Kanungo* (1988), empowering organizational structures increases an employee's initiative and motivation, as feelings of self-efficacy are generated through them. Accordingly, *Bandura's* (1978) theory of self-efficacy expectations forms the basis of the considerations on psychological empowerment. *Thomas and Velthouse* (1990) define psychological empowerment as a cognitive state that can be described by the four dimensions that influence work perceptions and thus intrinsic task motivation: meaning, self-determination, competence, and impact. This characterization is adopted by *Spreitzer* (1995), who defines psychological empowerment as a motivational construct.

Meaning refers to the interaction of work-related goals and an individual's values, beliefs, and behaviors (*Hackman/Oldham* 1980). *Competence* represents the self-efficacy expectation in the context of work and refers to the belief in one's own abilities to successfully master the work (*Bandura* 1989). *Self-determination* describes the feeling of autonomy and of being able to initiate and execute actions independently (*Deci et al.* 1989). *Impact* encompasses the extent to which an individual can influence strategic, operational, or administrative outcomes (*Ashforth* 1989). Combined, these four dimensions reflect an active orientation to one's role at work, in which an individual can and will shape her or his role and context. Moreover, the dimensions can be combined additively to produce an overall construct of psychological empowerment (*Spreitzer* 1995).

Against this background, the organizational structures of the structural empowerment approach influence the individual interpretations of psychological empowerment. Only through the simultaneous inclusion of both approaches, the desired positive empowerment-induced effects can be established (*Spreitzer* 2008). *Figure 1* illustrates the model of empowerment that is well-established in research and explains the relationship between structural empowerment, psychological empowerment, empowerment-induced outcomes,

and individual and organizational factors. Structural empowerment influences psychological empowerment, i.e., the structures influence the perception of empowerment. This relationship is moderated by individual (e.g., personality traits, motives) and organizational factors (e.g., size of organization). Thus, employees in similar work settings may be more or less psychologically empowered by the same empowerment practice. The desired outcomes (e.g., work performance, job satisfaction, innovation behavior) do not result from the application of structural empowerment practices alone; they only occur through the mediating effect of psychological empowerment (*Schermuly* 2019a).

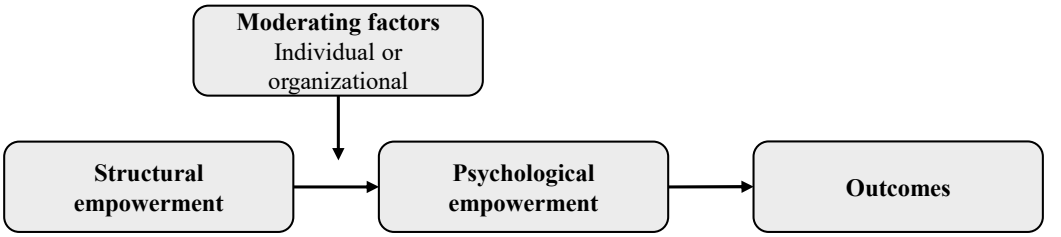

Figure 1: Theoretical Model of Empowerment (adapted from *Schermuly* 2019a)

In summary, the motivational construct of psychological empowerment is suitable for analyzing the perception of work since it reflects the employee's feeling of being able to successfully master a job that is meaningful to him or her on his or her own initiative and make an impact (*Spreitzer* 1995). Due to its innovative and digital form of work organization, value creation, and collaboration of employees in ICW, the previous experiences from empowerment research can only be transferred to a limited extent. Rather, it is important to think about empowerment from the very beginning and implement a systematic empowerment of companies and employees to exploit the full potential of such a digital form of work organization (*Vom Brocke et al.* 2018). Thereby, the empowering process describes the changes, enablers, and mechanisms by which cognitions are influenced (*Menon* 2001). While empowerment research has been examined in many contexts such as new work (*Schermuly* 2019b), leadership (*Amundsen/Martinsen* 2014; *Schermuly et al.* 2013) or agile software development (*Tessem* 2014), research on how ICW can realize empowerment is only limitedly existent. This paper addresses this gap.

3. Research Design

3.1 Method

To investigate empowerment in ICW, we used an exploratory case study including a mixed-method design (*Guetterman/Fetters* 2018; *Yin* 2003). Our aim was to examine work organization, the management of the platform, and the structural and psychological empowerment in an exploratory manner and to understand the phenomenon in its entirety in order to enable the transfer of the knowledge gained to other settings (*Orlikowski/Baroudi* 1991) of digital forms of work organization. The exploratory approach is particularly useful for emerging problems and challenges (*Yin* 2003).

Case studies are suitable for topics that have not yet received the appropriate recognition in literature and the existing knowledge can therefore be regarded as expandable

or ambiguous (*Eisenhardt/Graebner* 2007). Case studies focus on the exploration of case dynamics (i.e., presentation and explanation of research subjects) and the verification or generation of theories (*Eisenhardt* 1989) including the formulation of questions, propositions, hypotheses, or constructs (*Yin* 2003). Thereby, we illustrate the established theoretical understanding on empowerment within a polar case in order to better understand boundary conditions and limitations of the prevailing perspective in novel digital work contexts (*Eisenhardt/Graebner* 2007; *Siggelkow* 2007).

In our study, we complied with the requirements of appropriateness of case studies by *Yin* (2003) and build on existing empowerment research to shed light on empowerment in the specific context of ICW: We investigated structural empowerment in detail and how employees perceive their psychological empowerment in ICW. Furthermore, we investigated which organizational enablers influence structural and psychological empowerment and how this is achieved. We had no influence on the execution of ICW or the employees in our case, and, as described above, we investigated a novel phenomenon in digital work organization (i.e., ICW). In doing so, we provided conceptual insights into ICW, particularly on empowerment in ICW, in addition to descriptive explanations of ICW (*Siggelkow* 2007). Therefore, we examined an outstanding case of ICW that was characterized by the very successful application of ICW over a period of more than 10 years and with more than 10.000 registered employees. Our case was exceptional and unlike most other cases (*Siggelkow* 2007) because it focused on the successful application of ICW (*Beretta et al.* 2021; *Simula/Ahola* 2014). Despite this uniqueness of our case, it is still a classic form of ICW, where the requestor is the company and the employees are the solvers (*Zuchowski et al.* 2016).

While we had a unique case and comprehensive access to data, we chose a holistic investigation of a successful application of ICW regarding the structural and psychological empowerment of employees (*Walsham* 1995; *Yin* 2003). Therefore, to obtain a complete and comprehensive understanding, we used a mixed-method research design to investigate our case. To conduct our mixed-method study, we used a parallel procedure in which the qualitative and quantitative data were collected in one step (*Guetterman/Fetters* 2018) and merged afterwards using a side-by-side approach (*Creswell* 2014). To comply to our explorative approach, the qualitative data was first analyzed in a context-specific manner and transferred into a model including the description of relationships and dependencies (big picture). Subsequently, the quantitative data was analyzed in the form of a deep dive with a focus on structural empowerment. It is supposed to provide a context-specific, i.e., ICW-specific, illustration of the guiding model derived from the qualitative data. From a mixed-method perspective, the inclusion of quantitative methodologies and data, for example, allowed for broader insights and more generalizable results, assuming the approach was logically chosen and the sample was appropriately large enough (*Guetterman/Fetters* 2018).

3.2 Case Description

The aim of the investigated telecommunications company was to reduce the risk of new production development and create an understanding for upcoming trends and topics using crowd intelligence of their employee base. Therefore, an ICW platform was created as a crowd intelligence approach. In addition, the platform was intended to increase employee participation and reduce the influence of single decision-makers on project direction and funding estimations as well as to support risk minimization and market-oriented product development.

The company's ICW platform was launched in 2010 and experienced steady growth and has been in regular operation since being fully implemented in 2013. By the end of 2018, more than 460 tasks had been completed via the platform. In 2020, more than 10.000 employees were registered on the ICW platform, with a participation per task ranging from 200 to 1.500 employees. The crowd is made up of employees from all hierarchical levels and all functional areas. Participation is completely voluntary, open for all, and the tool is available 24 hours a day. Employees can participate both in their free time or during their workday.

The telecommunications company uses ICW mainly for business model development, product development, and innovation (idea) management. Thereby, business and innovation areas are analyzed, and business ideas and models are evaluated and developed regarding market opportunities, risks, and customer benefits. In the area of product development, functionalities are tested, and customer benefits are evaluated or developed based on use cases. In addition, the willingness to pay for products and services is surveyed, and pricing models are developed, which are closely linked to the development of sales incentives. Therefore, the company works with four different types of task formats, which vary in the degree of complexity. *Voting and microtasks* deal with crowd evaluations or rankings. *Forecasting* tasks deal with the employees' ability to predict specific issues. The *ideation* challenge focuses on the knowledge of the crowd (e.g., customer pain point analysis, design thinking). In *business case* tasks, the employees' business experiences are the focus. After completion of the task format, the results are published with additional infographics via the ICW platform itself and on its intranet appearance.

3.3 Data Collection and Analysis

Source	Description	Type of data
Interview	60-minute interview with works council member of the company (also initiator of ICW), and the project leader of ICW on detailed insights into the development of ICW, the organization of work, the implementation of individual tasks, the management of the platform as well as psychological empowerment.	Qualitative data
Documents	Analysis of several internal documents, presentations, and data on ICW success metrics.	Qualitative data
Meetings	Several coordination meetings with the parties involved (works council, project manager, ICW senior manager, data analyst) during the preparation and follow-up of the survey. Two informal discussions with the responsible works council.	Qualitative data
Survey	Survey with 413 employees active in ICW ▪ 232 qualitative responses from 136 employees were generated by open questions about reasons for participation and dropout, topics and suggestions for improvement. ▪ Questions on motivation, choice and variety of topics, reasons for participation and dropout, usage using a number scale from 1 (= strongly disagree) to 5 (= strongly agree) including “no answer” option.	 Qualitative data Quantitative data

Table 1: Data Collection

To gain a comprehensive insight into empowerment in ICW and explore both the psychological empowerment of employees and the organizational enablers of empowerment in ICW, we used multiple qualitative and quantitative data sources enabling triangulation by comparing, completing, and complementing insights with the aim of providing a more comprehensive answer in our case (see *Table 1*) (*Eisenhardt* 1989).

3.3.1 Data Analysis of Qualitative Data

In terms of methodology, we used qualitative content analysis according to *Mayring* (2014) to analyze the qualitative data (interviews, free-text responses from the survey, field notes, memory protocols, and internal documents). In doing so, we examined the available data material sentence by sentence and respective free-text responses in an iterative procedure using the software MAXQDA. The focus was on both structural and psychological empowerment as well as their interrelations with the organization of work and the management of the platform. We were able to cluster and name the initial codes directly from the material. We then enriched these initial codes with further text-based interview quotations, free-text answers, and quotations from the documents and consolidated the codes into overarching outcome categories that, for example, either provided information about the impact of ICW and its structural empowerment characteristics on psychological empowerment or represented important organizational enablers and factors for psychological empowerment in ICW. To ensure the validity and reliability of our qualitative data, we undertook several actions, which are summarized in *Table 2*.

Test	Tactics – How did I proceed?	Phase – Which stage?
Construct validity	▪ I selected interviewees in the data collection phase who differed in terms of their role as well as their function	▪ Data collection
	▪ I created a detailed and traceable chain of evidence by applying multiple sources of evidence with the interview, free-text responses, internal documents, presentations, data on ICW success metrics, coordination meetings, and informal discussions	▪ Data collection
External validity	▪ I discussed the generalizability of my findings with ICW experts	▪ Research design and data collection
	▪ I described my research design, analysis, participants, and interpretation of results in detail	
Reliability	▪ I developed and applied a detailed study protocol for collecting (e.g., interview guideline) and analyzing (e.g., coding scheme) the data	▪ Data collection
	▪ I assembled the interview recording and transcript, the free-text responses, and my field notes in a database	▪ Data collection
	▪ I followed an iterative coding process by two analysts in the data analysis	▪ Data analysis

Table 2: Validity and Reliability of Qualitative Data (*Eisenhardt/Graebner* 2007; *Morrow* 2005; *Yin* 2003)

3.3.2 Data Analysis of Quantitative Data

We used a descriptive approach to analyze the quantitative data. To show a comprehensive view of employee perceptions, we show the percentage of employees who answered each question on the 1–5 Likert scale. The definition of a high agreement includes participants who chose a 5 (= strongly agree) or 4 (= agree) on the number scale. 21% of respondents were female and 79% were male. On average, the respondents participated in 27 tasks (SD: 28.59). After the individual analysis of the quantitative data, we present the results and merge and compare the data on structural empowerment with the qualitatively obtained results. This allows us to consider and discuss converging and diverging results from the qualitative and quantitative data in addition to the deep dive into structural empowerment (*Creswell* 2014).

4. Findings and Insights

In this section, we explain the characteristics and interrelations of structural empowerment, psychological empowerment, its outcomes, and organizational enablers in ICW (see *Figure 2*). Therefore, we show that ICW as structural empowerment with its identified characteristics leads to psychological empowerment. In addition, we address the outcomes of empowerment in ICW and identify the organizational enablers of structural empowerment in ICW. Therefore, we use our qualitative data as basis for the developed model of empowerment in ICW. Following we dive into structural empowerment and its characteristics in ICW using a deep dive of our quantitative data.

4.1 Empowerment in ICW (Qualitative Insights)

Based on the theoretical background of empowerment and with the help of the propositions, we explain the *Figure 2* below, including the individual aspects of structural and psychological empowerment, the outcomes, and the organizational enablers of structural empowerment.

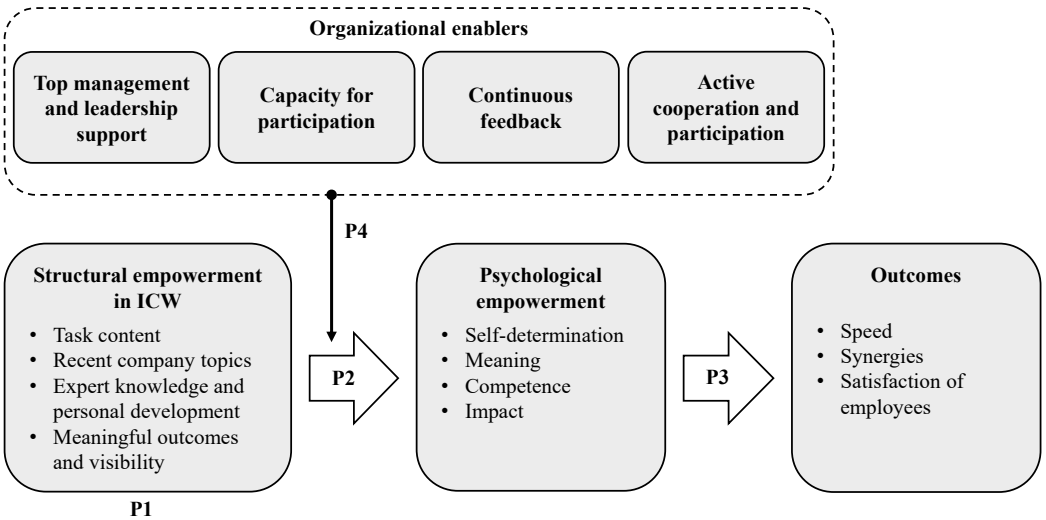

Figure 2: Model of Empowerment in ICW

From the very beginning of ICW, the employees were involved in all steps from the development to the implementation and operation of the platform. Accordingly, the employees were to be given a voice to influence corporate activities in an autonomous manner. The employees can do their job in ICW freely and independently. In addition, it is shown that the work in ICW means something to the employees and that there is an opportunity for the employees to have an impact on what happens in the company. *"ICW is a grassroots tool and thus also allows employees to influence corporate activities." (Works council)*

4.1.1 Structural and Psychological Empowerment in ICW

We identified a structural empowerment in ICW (i.e., task content, recent company topics, expert knowledge and personal development, meaningful outcomes, and visibility) and explain these characteristics including their interrelations to the dimensions of psychological empowerment (i.e., self-determination, meaning, competence, and impact).

We identified *task content* as the characteristic of ICW that especially fosters the self-determination of employees. Thereby, the topics and content of the tasks in ICW play a major role. For example, employees participate in particular because of their interest in the topics of the tasks. In addition, interesting and diverse tasks are requested by the employees so that a high variety of topics is available to the employees. The possibility of the employees being able to decide at any time voluntarily and autonomously when and in which tasks they participate represented an enriching experience for the employees. *"Often the topics are exciting and some of them are completely new to me. Thank you for this interesting opportunity to contribute to the topics via ICW." (Employee 7)*

Moreover, we identified *recent company topics* as one characteristic of ICW that fosters the meaning dimension of psychological empowerment. Knowledge of what the company is working on was considered very valuable by the employees. Thereby, the participation in ICW provides them with information on topics that are being discussed in the company. Additionally, we found that employee curiosity can be a reason for participation. This gives employees the feeling of working on something meaningful and contributing to a large company. *"Creating a motivating, involving, good feeling so that everyone understands that their contribution can be innovative capital and could be beneficial to everyone in the company." (Employee 8)*

Expert knowledge and personal development were further characteristics of ICW that fostered psychological empowerment and, in particular, the competence dimension. In the area of expert knowledge, developing one's own expertise can become a motivator for employees. In doing so, employees apply both professional as well as private or privately acquired knowledge in ICW. Additionally, we found that the complexity of the problems also promotes the perception of competence of employees.

Expert knowledge is not limited to the core professional activity; it is evident that knowledge acquired privately is also in demand and applied. This gives employees the feeling that their knowledge and skills are valued. It also shows that prior knowledge of the topics increases the probability of participation in the tasks. *"I am both an expert in certain areas and a technology/innovation manager. Both can be motivating."* (*Employee 10)*

For employees, participation in ICW results in the opportunity for personal development, either by strengthening their knowledge in their areas of expertise or by gaining insights into other areas through dealing with new topics. *"I learn through questions*

and comments even in areas where I am not an expert. This helps me in my further development." *(Employee 9)*

Moreover, *meaningful outcomes and visibility* represented a characteristic of ICW that must be considered in terms of impact. Employees are motivated by the visibility of their work performance and by having a stake in the overall result. Helping colleagues develop products and services is also seen as important and valuable by employees. Moreover, employees' own responsibility out of a sense of responsibility toward the company's success, also plays a role. *"It's great to be able to contribute as an employee to bring great products to market and avoid failure."* *(Employee 12)*

The employees also emphasized the importance of generating meaningful and useful outcomes through ICW. Thus, the targeted use of competencies plays an important role for employees. It turns out that employees sometimes decide not to participate in tasks because they do not meet the requirements for the required knowledge as perceived by themselves. This procedure often occurs out of a sense of responsibility towards the company. *"If I have absolutely no idea about a topic, I drop the task to avoid distorting the result."* *(Employee 11)*

We identified four characteristics of structural empowerment and consequently assume that ICW constitutes a structural empowerment practice. Hence, we assume: *Structural empowerment in ICW is created by task content, recent company topics, expert knowledge and personal development and meaningful outcomes and visibility (Proposition 1).*

The identified characteristics of structural empowerment in ICW foster the dimensions of psychological empowerment. Thereby, ICW represents a structural enabler of psychological empowerment of employees. Thus, we assume: *ICW positively affects the psychological empowerment of employees (Proposition 2).*

4.1.2 Outcomes of Psychological Empowerment in ICW

We identified speed, synergies, and satisfaction of employees as outcomes of psychological empowerment in ICW.

By specifically integrating ICW into the product and service development process, it is possible to obtain customer feedback in the sense of agile and iterative development. This enables an iterative approach and the integration of ICW into the development process at any time. In particular, the fast processing and thus direct integration possibility of the results enables *speed*. *"We are super-fast. From task definition to result report, we usually need three weeks."* *(Project leader)*

In addition, there are organizational advantages through the identification and creation of *synergies* within the company, especially when the employees recognize that other departments and divisions are also working on similar issues, products, and services. *"We can create synergies. We regularly notice that several departments (sometimes up to 5) are working on the same topic but have no information about each other." (Project leader)*

Furthermore, the privately acquired knowledge of the employees, which goes beyond the actual core activities, can be used in a targeted manner. *"Employees have many competencies that we as a company don't know about because they go beyond the employees' core competencies."* *(Project leader)*

Moreover, regarding *satisfaction of employees*, it was shown that employees are satisfied with their work in ICW. This includes, for example, satisfaction with the tasks in ICW. In addition, most employees even identified with this new form of work organization and consider themselves as a part of the crowd.

To achieve the results described above – speed, synergies, satisfaction of employees – and thus to exploit the potential of ICW, it is necessary for employees to feel a sense of psychological empowerment. This is even more important because ICW is a form of work organization in which employees participate voluntarily and based on a self-selection process. It is therefore important to protect the self-determination of the participating employees in ICW. Furthermore, it is important to continuously provide interesting and challenging tasks that promote the employees' experience of competence and personal development. In addition, employees are more inclined to participate and thus get involved if they feel that they have an impact on what is happening in the company. Only when employees feel they are successful in ICW can the identified outcomes be created. It is of particular importance that the identified organizational enablers of psychological empowerment are considered within the ICW system. The realization of the desired results is thus closely related to psychological empowerment, because speed, synergies and satisfaction depend on numerous participants and the extensive and motivated involvement of employees.

To tap into the desired outcomes of ICW, the psychological empowerment of employees is a basic requirement. Therefore, we assume: *The psychological empowerment of employees positively affects the desired outcomes of ICW (i.e., speed, synergies, and satisfaction of employees) (Proposition 3).*

4.1.3 Organizational Enablers in ICW

We identified five organizational enablers for successful ICW and the enhancement of psychological empowerment within ICW: top management and leadership support, capacity for participation, active collaboration and participation, and continuous feedback. These organizational enablers serve as important factors within the ICW system in the interplay of structural and psychological empowerment.

We found that *top management and leadership support* have an important role in ICW (*Leung et al.* 2014). Top management should act as an active ambassador of ICW. This can encourage employees to participate in ICW and convey the relevance of ICW from the beginning. For example, members of top management are active in the crowd. *"The crowd includes employees from all over the company, from all areas and all levels, from employees to top management." (Project leader)*

However, it is not only top management that plays a decisive role. The focus is also on the active support of leaders. Thus, it is important for leaders to give the employees the feeling of support and encouragement to participate in ICW. "*Leaders should encourage ICW and not see it as a (necessary) evil that takes away resources in their own area.*" *(Employee 2)*

In addition, team leaders sometimes demonstrate a lack of understanding, which leads employees to question how their participation might negatively impact them. "*I need time for participation; team leaders sometimes show no understanding.*" *(Employee 3)*

In this regard, the available *capacity for participation* of the participants or the free space granted for participation represents another important aspect. Thus, most employees participate in ICW when their time permits with other requests often taking priority. Therefore, the regular job takes priority over the ICW job. "*I had more important official activities to complete than ICW.*" *(Employee 5)*

Employees often lack the time to participate (*Malhotra et al.* 2017). Consequently, the lack of freedom to participate represents a major barrier to participation. "*I can only participate in ICW activities if I am not already 120% busy with my regular duties.*" *(Employee 4)*

To enable employee participation despite their extensive regular work, the employees request an extension of the processing period. "*I could imagine that more participants would become active if the deadline pressure were a little less.*" *(Employee 6)*

Regarding a*ctive cooperation and participation* employees expressed a desire for more participation both in designing and bringing their own topics to ICW. "*It would be great if you could determine topics to be discussed yourself.*" *(Employee 14)*

The employees were also looking for active cooperation or participation in the further development of tasks that are processed in ICW. Along these lines, the employees could further develop ideas, products, and services sustainably. "*Better question and answer system on forecasts. Since all comments are anonymous, it is difficult to have a dialogue between ideators and commenters.*" *(Employee 15)*

In addition, regarding *continuous feedback* the employees need to be continuously informed about the results of tasks, especially regarding what will be made of the topics (*Malhotra et al.* 2017). Showing the outcome to participants increases their feeling of involvement with the whole process and their willingness to stay active. Thereby, employees request feedback on how results are used in the departments.

On the one hand, this applies to the business impact created by the tasks and their results. "*I demand much greater transparency about the results and consequences of completed tasks.*" *(Employee 16)*

On the other hand, employees also request feedback on their individual performance within the tasks in ICW. Only in this way is it possible for employees to assess their competency in the subject areas and thus increase their sense of competency in terms of psychological empowerment. "*Feedback on whether and how the tasks have had an impact on product development, for example, would be nice and motivating.*" *(Employee 17)*

Overall, we found that our identified organizational enablers reinforce the effects that structural empowerment has on psychological empowerment. We can therefore assume that our identified organizational enablers play a moderating role. Hence, we assume: *Top management and leadership support, capacity for participation, active cooperation and participation and continuous feedback represent organizational enablers that influence the effect of structural to psychological empowerment in ICW (Proposition 4).*

4.2 Deep Dive on Structural Empowerment in ICW (Quantitative Insights)

Following the qualitative results of our exploratory study, which provided a better understanding of empowerment in ICW with the presented model on empowerment in ICW,

we now want to take a deep dive into structural empowerment. Structural empowerment represents an important factor for the successful long-term application of ICW. To further understand the characteristics, boundary conditions and limitations of structural empowerment as well as to support organizers of ICW with insights on how to successfully manage and influence employees to achieve superior results. we draw on our quantitative data and their results (see *Figure 3*).

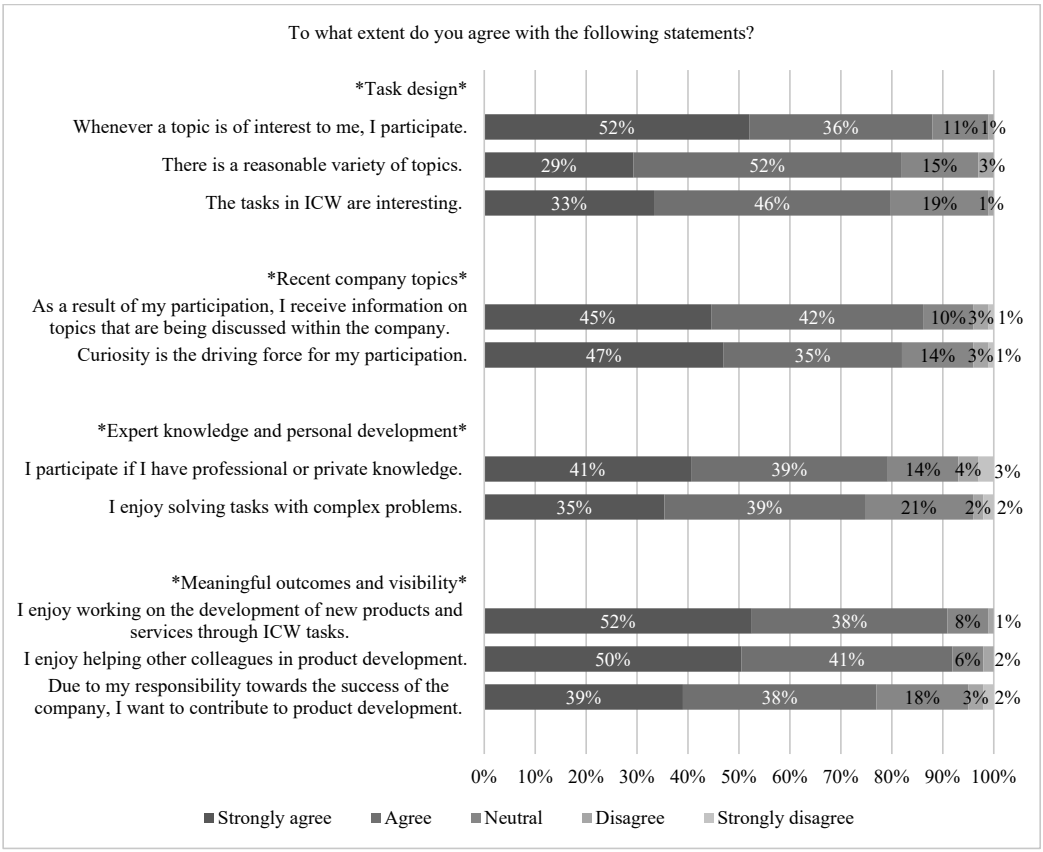

Figure 3: Deep Dive Structural Empowerment (number of responses ranged from n = 402 to n = 409)

In the dimension *task content*, interest and the variety of tasks play a particularly important role. 88% of respondents take part in the tasks in ICW if they consider the respective topic to be interesting. At the same time, 81% of respondents state that a reasonable variety of topics is available and 79% rated the topics as interesting. As a result, companies using ICW should place particular emphasis on topics and tasks that reflect the interests of the employees. This helps to achieve a high level of employee participation. The voluntary nature of participation in ICW is the focus in this regard. It is therefore important to design the tasks in such an interesting way that many employees feel addressed.

In the characteristic of *current company topics*, employees' need for information represents an important factor. 87% of respondents stated that their participation provides them with information about topics being discussed in the company. In addition to employees' need for information about current topics, employees' curiosity also plays a role, with 82% of respondents stating that their curiosity is a reason for participating.

In ICW, *expert knowledge* also emerges as a dimension of structural empowerment. Thus, 80% of the interviewees take part in tasks if these are related to their professional or private knowledge. Thus, ICW offers employees the opportunity to contribute a wide variety of their skills and knowledge, which goes beyond professional knowledge and includes privately acquired knowledge. A high degree of complexity is also appreciated by employees. For example, 74% of respondents said they enjoyed working on complex tasks. Thus, ICW could be used as an opportunity to break out of daily routines and pursue new or challenging tasks in a professional context.

In the dimension *meaningful outcomes and visibility*, 90% of respondents said that they enjoy the development of new products and services through ICW tasks. 77% of respondents contribute to product development with the help of ICW out of a sense of responsibility towards the company's success, and even 91% of respondents enjoy helping their colleagues in product development.

5. Theoretical and Practical Contributions, Limitations, and Future Research

Our theoretical contributions focus on the research fields of ICW and empowerment. Based on our qualitative data, we illustrate the established theoretical model of empowerment with deep situated insights and show how it can be contextualized in the context of ICW (see *Figure 2*). This allows us to gain a deeper and more fundamental understanding of empowerment in ICW and thus understand the psychological implications around employee experiences and perceptions, which has not been the focus of research to date (*Deng et al.* 2016; *Durward et al.* 2019; *Durward et al.* 2020; *Simmert et al.* 2020). Thereby, we first show that ICW represents a form of structural empowerment that has a positive antecedent effect on the psychological empowerment of employees. Following the call of *Maynard et al.* (2012) to investigate structural empowerment bundles and their relationship on psychological empowerment, we identify characteristics of structural empowerment in ICW (i.e., task content, recent company topics, expert knowledge and personal development, meaningful outcomes and visibility) that foster psychological empowerment. In doing so, we explain how these characteristics promote the four dimensions of psychological empowerment (i.e., self-determination, meaning, competence, and impact). Second, we explain the outcomes that result from the empowerment-oriented application of ICW. Thus, we show that with the help of ICW, a fast task completion, and creation of content, the uncovering and creation of synergies can be achieved. We also identified satisfaction as employee-oriented outcome variable (*Durward et al.* 2020). Thereby, we show that empowerment as hitherto not yet well investigated mechanism, fosters the success of ICW and thus the mentioned outcomes. Hence, we extend the research on ICW respectively the outcomes perspective in ICW research by adding the aspect of empowerment. Third, we identified organizational enablers of empowerment in ICW. These organizational enablers reinforce the effect of structural empowerment on the psychological empowerment of employees. Only when the interplay of these aspects is

considered, ICW can be successful and unfold its empowering effect on employees while delivering the desired outcomes.

To further understand structural empowerment and its relevance, we used our quantitative data for a deep dive. In doing so, we provide figures on the identified characteristics of structural empowerment in ICW based on a descriptive analysis and can thus underline the relevance of the individual characteristics and show boundary conditions and limitations of the prevailing perspective in a novel digital work context. In addition, with the complementary quantitative insights, we provide rationales for employees' participation in ICW, choice of tasks in ICW, and employees' perceptions.

Regarding our practical contributions, we provide practitioners with the opportunity to benefit from insights into successful and empowerment-oriented ICW implementations. Thereby, our very detailed case description offers valuable insights for the leaders responsible for ICW settings and campaigns. In particular, our identified and described structural empowerment characteristics in ICW, as well as our identified and explained organizational enablers for the successful application of ICW, give responsible leaders the opportunity to guide ICW and the involved employees in a targeted way.

As with every study, ours has limitations. We hereby discuss them, accompanied by terms of future research options. First, despite our very extensive quantitative data, we conducted an analysis based on descriptive statistics. Further extensive surveys to illustrate interrelationships should therefore be undertaken in future research. Along these lines, antecedents, and outcome variables on psychological empowerment in ICW could be further explored and quantified so that our exploratory propositions are tested explanatorily. In particular, the organizational enablers that we have identified qualitatively can also be examined quantitatively in terms of their respective effectiveness. In terms of qualitative data, we were able to gain valuable insights into the views of a company representative who was the ICW's project leader at the telecommunications company. We also gained valuable insights from the free-text responses of employees through a survey. At this point, future studies could ask employees in more detail and, for example, use in-depth interviews to explore attitudes and perceptions related to structural and psychological empowerment in ICW. Furthermore, we focused on the experiences and perceptions of psychological empowerment as an individual success factor in ICW. Other people-related factors, such as workforce agility or leadership behaviors, should be considered in future research to ensure a comprehensive understanding of the context in ICW. While our case examines an outstanding (successful over a long period of time) implementation and application of ICW, future research can also look at unsuccessful or failed implementations and applications of ICW and examine their inclusion and psychological empowerment. In addition, it would be exciting to examine other forms of crowdsourcing, such as internal crowdfunding, regarding their empowering effect.

6. Conclusion

In this paper, we shed light on empowerment in ICW. We build on existing empowerment research and are the first to apply it to the context of ICW. The paper presents a model for empowerment in ICW and outlines structural and psychological empowerment, organizational enablers as moderating effects as well as the outcomes of empowerment in the context of ICW. Furthermore, we investigate ICW as form of structural empowerment and its characteristics in detail. Thereby, we provide a deeper and more fundamental

understanding of empowerment in ICW. Building on these insights is supposed to inform the further design and development of ICW.

In our case, we examined a telecommunications company that has been successfully applying ICW for more than 10 years. The company draws on an internal crowd of more than 10.000 employees and regularly mobilizes up to 1.500 employees. We investigated the case using a mixed-method research design including quantitative (a survey with 413 employees) and qualitative (232 free-text answers of employees and an interview with a works council and a project lead plus document analysis) data and provide deep insights into understanding successful and empowerment-oriented ICW. Thereby, our research provides qualitative insights on employee perceptions of ICW enriched with quantitative data and insights. To the best of our knowledge, this is the richest scientific examination of empowerment in ICW to date, being one of the first to focus on employees in ICW in detail (*Durward et al.* 2019). Thereby, our study contributes by showing how and why ICW represents a structural empowerment factor and by identifying organizational enablers of empowerment in ICW as important success factors. Furthermore, it contributes by showing how ICW as form of structural empowerment fosters psychological empowerment and can lead to greater speed, increased synergies, and higher employee satisfaction.

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