

Designing Activity-based Workspaces – An Analysis of Creativity Enhancers and Inhibitors in Physical Work Environments

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Abstract

Employee creativity is the origin of every innovation and therefore crucial for a company's success. For this reason, the promotion of employee creativity is gaining more and more attention among practitioners and companies are increasingly implementing activity-based workspaces (ABWs) to improve the creative performance of their employees. Based on desk sharing and a mix of open and closed spaces, ABWs allow employees to select optimal working conditions for the task at hand. Nevertheless, literature is divided on whether ABWs effectively promote employee creativity and which ABW elements enhance or inhibit creativity. To close this research gap, we conducted interviews with ABW experts ($N = 101$). In the experts' accounts of creativity enhancers and inhibitors, the former were emphasized more strongly. Most of the identified enhancers and inhibitors were related more to the area of *human resources and work practices* (e.g., territorial flexibility, bustling activity) than *physical layout and facilities* (e.g., inspirational design, the person-environment fit) and *organizational culture and structure* (e.g., atmosphere, mindset), which indicates that employees and appropriate ABW use are the crucial factors for promoting creativity, while facilities serve mainly as enablers. These findings offer valuable guidance in designing and developing ABWs to foster employee creativity.

Keywords: activity-based workspace, physical work environment, creativity, innovation, qualitative study

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1. Introduction

As factories become increasingly automated, employee responsibilities are shifting from production work to knowledge work (DiGiovanni, 2004; Korczynski et al., 2002; Matsuyama, 2009). Given that knowledge workers spend most of their day in the office, this shift requires new types of the physical work environment (PWE) to support employees in their daily work (Budie et al., 2018). In recent years, companies have started implementing *activity-based workspaces* (ABWs), which provide support for different work situations by offering alternative types of space (e.g., open and closed) based on the desk sharing approach (Eismann et al., 2022). Depending on their tasks and other needs, employees can choose the option that best suits their purposes (Appel - Meulenbroek et al., 2011; Veldhoen, 2005). Companies implement ABWs for a number of reasons: while costs and productivity are often the initial drivers, the range of reasons is likely to expand over time (Kim et al., 2016; Van Ree, 2002). In addition to enhancing employee satisfaction and well-being, there is evidence that ABWs can be used to strategically promote creativity (Suckley & Nicholson, 2018), which can be defined as individuals' or groups' ability to generate new and useful ideas (Amabile, 1988). Especially during the COVID-19 pandemic, it has become clear that working from home makes ad hoc interactions and idea exchanges among employees less frequent and that the office environment offers better conditions for this purpose (Waizenegger et al., 2020). More specifically, ABWs' open design is considered to promote the flow of information and knowledge, which is crucial for idea generation (Boutellier et al., 2008). However, some studies have also reported that ABWs can inhibit creativity because open spaces may cause disruptions and reduce privacy (de Been & Beijer, 2014; Halldorsson et al., 2021). In general, creativity is an important requirement for innovation, but little is known about which ABW elements specifically contribute to the enhancement or inhibition of creativity, and extensive qualitative studies are lacking. To bridge this knowledge gap, our study addressed the following research questions:

1. *What reasons prompt companies to implement ABWs, and what role does creativity promotion play in this process?*
2. *Which ABW elements enhance or inhibit creativity?*

To answer these questions, we interviewed 101 experienced ABW experts from a range of companies and industries. The study findings contribute to a more holistic understanding of the relationship between ABWs and creativity.

2. Theoretical Background

2.1 Evolution and Characteristics of Activity-based Workspaces

As knowledge work has become increasingly important, companies have systematically modified the PWE to

provide optimal employee support (Goodrich, 1986). However, conventional offices no longer meet knowledge work requirements: individual offices hinder communication between team members (de Been & Beijer, 2014), and open-plan offices provide insufficient support for concentrated work (Kim & de Dear, 2013). By providing different spaces for different activities within a single PWE, companies can enable employees to perform diverse tasks according to individual needs and preferences (Appel - Meulenbroek et al., 2011; Veldhoen, 2005).

Among modern PWEs, ABWs—also known as activity-based flexible offices, non-territorial work environments, or combi-offices (Wohlers & Hertel, 2017; Kim et al., 2016; Suckley & Nicholson, 2018)—were initially introduced primarily for reasons of space efficiency and costs (Appel - Meulenbroek et al., 2011; Van Ree, 2002). Companies realized that employees do not need their own permanent desks and that not all desks are in use all the time, as some employees are always out of the office—for instance, on business trips or on vacation. Moreover, greater flexibility made it possible to save space and reduce furniture or equipment costs. As ABWs were considered modern and appealing, they were also used to attract new recruits in the war for talent (Bokor & Fiset, 2019). Over time, it has become apparent that ABWs can also influence employee well-being and satisfaction (Appel-Meulenbroek et al., 2016) by increasing autonomy and encouraging constant movement in the workplace. In recent years, there has been an increasing focus on work practices as a means of influencing the workplace experience (Kingma, 2019; Waber et al., 2014). In particular, companies have implemented ABWs to enhance employee creativity through better exchange of ideas and knowledge, as workers constantly change places and discussion partners (Suckley & Nicholson, 2018).

The framework for collaborative workplaces for innovation (Manca et al., 2018) can be used to classify the characteristic ABW elements. This framework is a particularly suitable basis for our study because ABWs are primarily designed to improve communication and collaboration, and the aim of this study is to explore ABWs' impact on creativity, the source of innovation. Figure 1 shows the four basic deployment areas of collaborative workplaces.

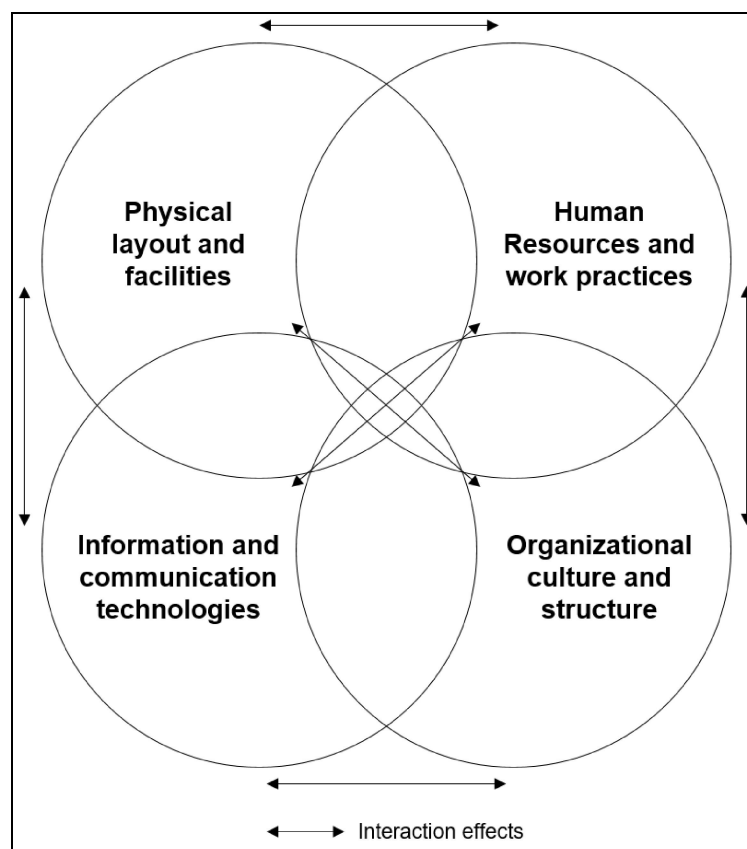


Figure 1. Collaborative workplaces for innovation: A conceptual framework (Manca et al., 2018).

In relation to *physical layout and facilities*, ABWs are tailored to employees' task needs to enhance work performance (Eismann et al., 2022; Haner, 2005)—for example, core workspaces are open or closed to support team or individual tasks, respectively. Open offices promote interactions among colleagues and spontaneous conversations but can also be used for individual work (Appel - Meulenbroek et al., 2011). Closed offices are designed to be noise free and are typically used for concentrated work on confidential tasks or phone calls (Maher & Hippel, 2005). Finally, informal spaces, which are less common in conventional offices, include lounges, gaming rooms, sports facilities, and focus rooms. These spaces are intended to support creative work,

social contacts, or thinking outside the box and to facilitate recreation and informal exchanges (Haynes et al., 2019; Thoring et al., 2018).

In ABWs, desk sharing and knowledge sharing belong to the *human resources and work practices* deployment area. Desk sharing enhances territorial flexibility by allowing employees to select an optimal workspace for their next task. This practice also fosters communication and knowledge sharing—by sitting next to different people every day, employees come into contact with colleagues from other departments and teams (Hassanain et al., 2018; Kingma, 2019).

In terms of ABWs' *organizational culture and structure*, workers can determine when, where, and how they perform the tasks assigned to them. This is a feature of flat hierarchies, in which managers must trust their employees because the latter are dispersed across the workplace and cannot be controlled in the traditional sense. In turn, employees must take on more responsibility for delivering result-oriented work in light of their increased autonomy and must internalize the flexible spirit of the ABW-based corporate culture (Appel - Meulenbroek et al., 2011; Thanem et al., 2011).

Finally, the *information and communication technologies* deployment area provides the necessary technical support for facilitating activity-based working. To work in a flexible and location-independent way, employees need digital equipment, such as notebooks, smartphones, and headsets (Melín-González, 2019). ABWs promote the active use of communication technology for digital collaboration, and digital conferencing or meeting tools further support desk sharing and the use of different spaces (Kim et al., 2016). As envisaged by Manca et al. (2018), all four deployment areas are interrelated, and the individual elements must be appropriately combined to properly support activity-based working.

2.2 Impacts of Activity-based Workspaces on Employee Creativity

While the existing literature indicates that ABWs can support employees in their daily work, there is conflicting evidence regarding ABWs' actual impacts. Allowing employees to choose the most suitable space for their current task can help them work more productively (Appel - Meulenbroek et al., 2011; Haynes, 2008). At the same time, the new office setup and unfamiliar working practices mean that employees may need time to adapt, which, in turn, reduces their productivity (Arundell et al., 2018). In ABWs, closed spaces provide options for retreat and privacy, and this employee-centered approach can increase work satisfaction (Candido et al., 2019). However, working in open spaces may lead to interpersonal conflicts between colleagues who differ in their interpretations of workplace rules. For example, messy or disruptive colleagues may have a negative impact on others' work satisfaction (Kim & de Dear, 2013).

There is also evidence of a link between PWE and employee creativity (Amabile & Conti, 1999; Meinel et al., 2017; Suckley & Nicholson, 2018). Creativity is present in all people and consists of motivation, knowledge, and creative-thinking skills (Amabile, 1983). Creativity is a trainable ability that constitutes the starting point of the innovation process in companies and can be influenced by the PWE (Amabile, 1988; Amabile & Conti, 1999). In ABWs, all three types of space—open, closed, and informal—can influence employee creativity, and this relationship between space and creativity has been intensively discussed in the existing literature (Arundell et al., 2018; Hoff & Öberg, 2015; Meinel et al., 2017; Wohlers & Hertel, 2017). However, opinions remain divided as to whether ABWs' influence on creativity is positive or negative. For example, increased noise levels in open spaces can negatively impact creative capacity. Equally, co-workers may find it distracting if a colleague is searching for a new workspace or talking on the phone, which may lead to a loss of focus and hinder creative tasks (Hoff & Öberg, 2015; Martens, 2011). Toker and Gray (2008) have argued that a lack of direct contact with colleagues in closed spaces inhibits exchange and innovativeness, as spontaneous ideas cannot be easily pitched to others and individuals are less likely to pursue these ideas in the absence of feedback. Desk sharing may also negatively impact employee creativity (Meinel et al., 2017). For example, being unable to furnish one's temporary desk with personal and individual items may reduce employee satisfaction and creativity (Samani et al., 2014). Finally, Engelen et al.'s (2019) comprehensive literature review on ABWs' effects on employees found no connection between creativity and activity-based working.

At the same time, scholars have also reported that ABWs have certain positive effects on creativity and improve the conditions for creative work. For example, open spaces promote interaction, which makes it easier to collaborate with other disciplines and generate novel ideas (Arundell et al., 2018; Coradi et al., 2015). The proximity of colleagues also facilitates picking up ideas and sharing knowledge (McCoy & Evans, 2002), as people absorb knowledge in both planned and unplanned ways (Brunia et al., 2016; Wohlers & Hertel, 2017). Even informal spaces can promote creativity through casual social interactions (Thoring et al., 2021). Conversing in a relaxed atmosphere tends to promote feelings of well-being and encourages the emergence of new ideas (Meinel et al., 2017). By contrast, closed spaces are more suitable for concentrated brainstorming, either alone or in a team. As concentrated work is known to encourage creativity (Blok et al., 2012; Martens, 2011; van der Voordt, 2004), quiet zones and closed spaces are often well suited to creative work and individual or team-based idea generation as well as quick and spontaneous gatherings with colleagues to work on new

solutions. Therefore, desk sharing can be said to positively influence creativity by making such activities possible. By moving to other spaces and sitting next to different people, employees can change their perspectives and broaden their horizons, prompting them to think creatively or outside the box (Appel - Meulenbroek et al., 2011).

In summary, the literature indicates that ABWs can potentially enhance or inhibit creativity, primarily via physical layout and facilities.

3. Methodology

3.1 Setting and Sample

To address the research questions and deepen the current understanding of how ABWs enhance or inhibit creativity, we adopted a qualitative approach (Edmondson & McManus, 2007) and conducted expert interviews to explore and identify patterns in a relatively neglected research area (Bettis et al., 2015; Yin, 2009). In addition, our large sample ($N = 101$) facilitated quantitative evaluations and the prioritization of employee statements (Mayring, 2004).

The sample included 70 men (69%) and 31 women (31%). On average, interviewees were 42 years of age and had 13 years of experience in their respective industries, and 47% worked in a management position. All interviewees had relevant experience in designing ABWs and had played a decisive role in implementing an ABW; overall, 91% had worked or were currently working in an ABW. To ensure comparability, we verified before the study commenced that the workplaces in question matched the basic characteristics of ABWs, such as the provision of open, closed, and informal spaces for different tasks within a single work environment and support for autonomous employee access through desk sharing. As shown in Figure 2, most interviewees worked in small companies (1–200 employees). However, to ensure a balanced sample and to demonstrate that the findings are not confined to a specific company profile, we included German companies of all sizes.

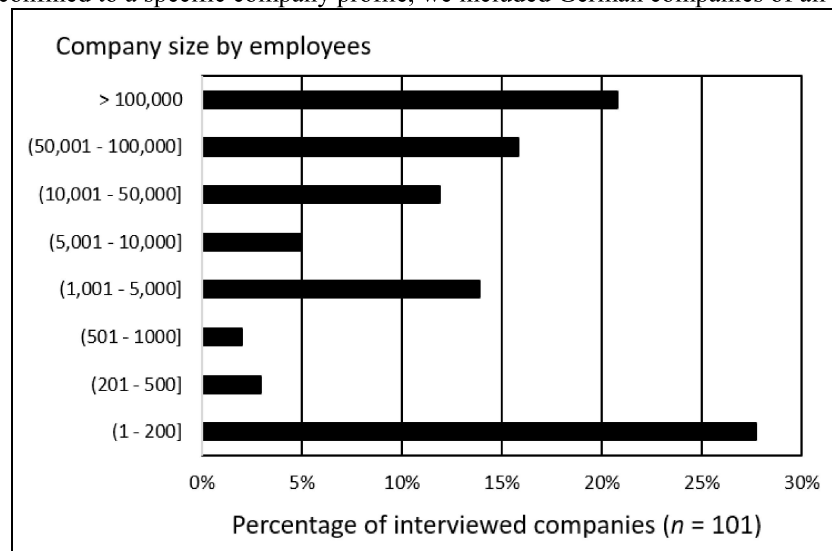


Figure 2. Classification of interviews by company size.

We specifically focused on recruiting a broad and diverse sample that included a range of different industries to provide a representative overview of ABW use across all sectors. As shown in Figure 3, the experts were drawn from 18 industries, ranging from automotive (14%) to telecommunications (2%) industries. This heterogeneity means that the results can be generalized and any potential negative effects of sample bias can be mitigated (Yin, 2009).

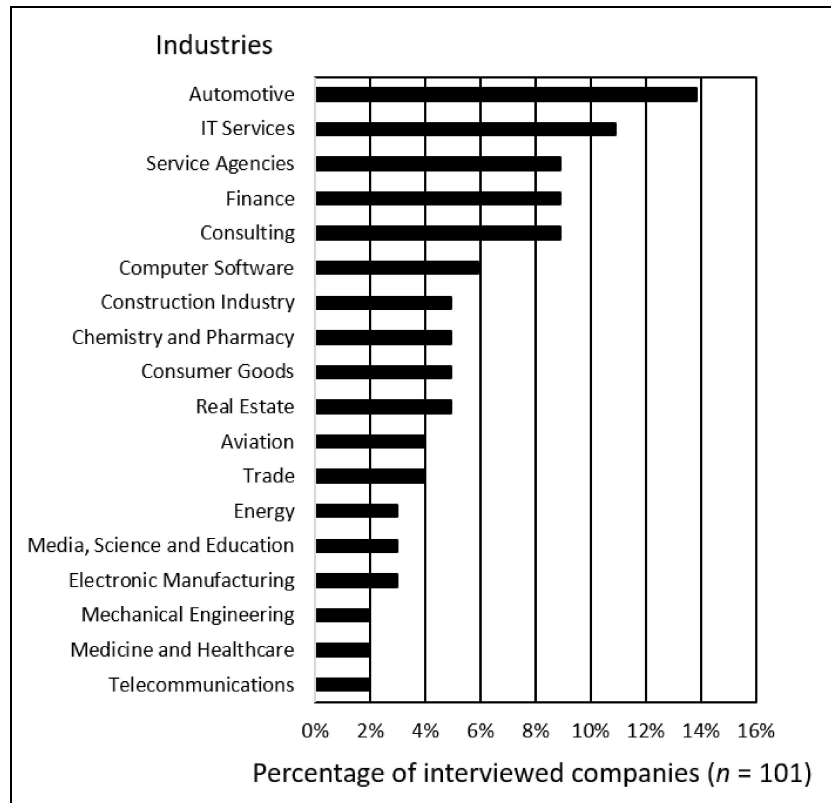


Figure 3. Classification of interviewees by industry.

3.2 Data Collection and Analysis

To begin with, potential interviewees were contacted by email or through business-related social networks. Interviews were conducted by telephone or web conferencing between June and December 2020 and were audio-recorded. Participation was voluntary, and interviewees were assured in advance that their names and companies would be anonymized to avoid any constraints on their answers (Yin, 2009). Participants were also informed in advance that the interview would focus on ABWs’ effects on employees. To avoid any undue influence or sensitization, no reference was made to the topic of creativity. The interviews were semi-structured and based on an interview guideline from which the interviewer could choose to depart, depending on how the conversation developed (see Appendix A1). In this way, it was possible to combine structured and open data collection (Cannell & Kahn, 1968). To make the very complex topic of creativity easy for the interviewees to understand, a brief definition of creativity according to Amabile (1988) was presented during the interview.

To facilitate the interview analysis, the audio recordings were transcribed and anonymized. In the first analysis step, the research team coded the interviews and used qualitative content analysis to identify categories that could help answer the research questions (Mayring, 2004). As shown in Table 1, the experts’ statements were paraphrased and generalized to achieve a higher level of abstraction.

Table 1. Example of Qualitative Content Analysis

Question	Interview / Line	Quote	Paraphrase	Generalization	Category
Which aspects of ABWs make employees more creative?	I1 / L. 172–174	“The fact that you can change workplaces from time to time, that you get to hear more, and that you’re in contact with different people, I believe these features make people more creative.”	ABWs make employees more creative by allowing them to move between workplaces and talk with new colleagues.	Moving between workspaces. Discussions with new colleagues.	Top code: Territorial flexibility Sub code: Availability of different workplaces Top code: Increased communication Sub code: Changing discussion partners

In the second step, the generalized statements were grouped into appropriate categories and the frequency of statements within categories was quantified to weigh and prioritize categories (Nardo, 2003). Such inductive development of categories was recommended by Gioia et al. (2013) as a means of deriving new insights and maintaining an exploratory approach. In each category, top codes and the related sub codes were created for each of the following three main study topics: (1) companies' reasons for implementing ABWs, (2) ABW elements that enhance creativity, and (3) ABW elements that inhibit creativity. In the final analysis step, a researcher reviewed the quotations, codes, and sub codes for comprehensibility and made sure that the interviewees' opinions were not distorted. The number of top codes and sub codes was unspecified at the outset and emerged during the analysis.

4. Findings

The 101 interviews generated a significant amount of data. Figures 4–6 summarize the top codes and the number of mentions in relation to the three main research topics. As no limits were imposed on interviewees regarding the length and number of answers, multiple mentions could be assigned to a given top code. Detailed information about the top codes and the corresponding sub codes, along with example statements, can be found in Appendices A2–A4.

The interviewees cited several reasons for implementing ABWs ($n_r = 303$). As shown in Figure 4, these answers were grouped into 14 top codes (n_{r1-14}) comprising 50 associated sub codes.

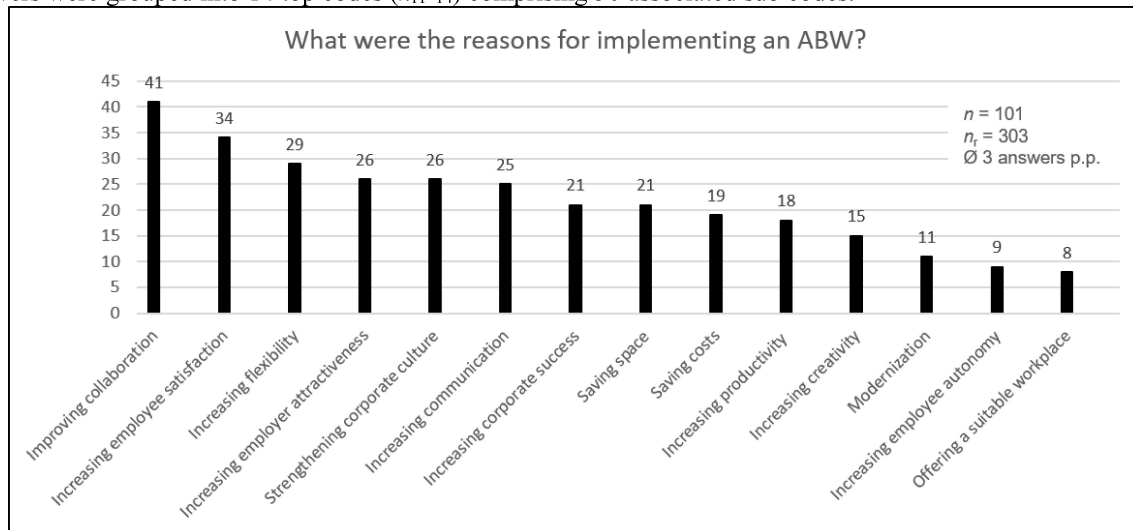


Figure 4. Reasons for implementing ABWs.

The highest relevance was assigned to the top code *Improving collaboration* ($n_{r1} = 41$; 13.5% of all answers)—for example, this top code includes the sub codes *Fostering interdisciplinary exchange* and *Enabling spontaneous meetings*. The following example statement clarifies the meaning of this top code:

“The advantage of working in an ABW is that, in the best case, you are much more collaborative [...] because people don’t just sit in their own rooms, they get to know much more about each other.” (Expert #15)

The second most mentioned top code *Increasing employee satisfaction* ($n_{r2} = 34$; 11.2%) includes sub codes such as *Increasing employee well-being* and *Improving work-life balance*.

“If employees are satisfied and happy with their jobs, they will also enhance company performance. I think that always has to be the goal—a focus on people.” (Expert #17)

The third most mentioned top code was *Increasing flexibility* ($n_{r3} = 29$; 9.6%), which includes sub codes like *Increasing agility* and *Easier building of project teams*.

“The original motivation [...] was to promote reaction speed and agility.” (Expert #79)

The top codes *Modernization* ($n_{r12} = 11$; 3.6%), *Increasing employee autonomy* ($n_{r13} = 9$; 3.0%), and *Offering a suitable workplace* ($n_{r14} = 8$; 2.6%) were mentioned the least frequently.

Responses to the question of which ABW elements can inhibit creativity ($n_{ci} = 121$) were grouped into nine top codes (n_{ci1-9}) comprising 34 sub codes. Figure 5 shows the ranked responses.

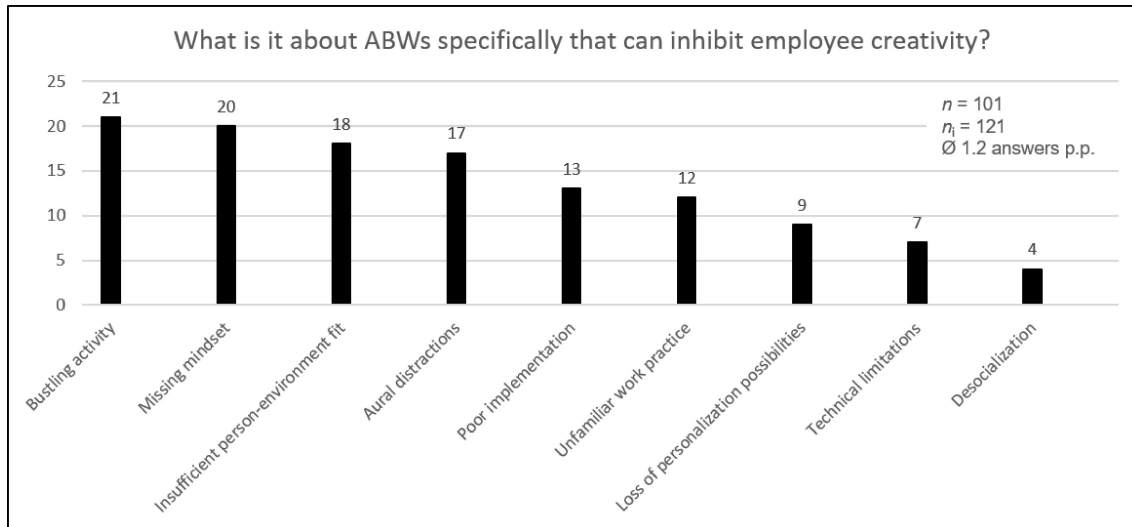


Figure 5. ABW elements that inhibit creativity.

The results show that *Bustling activity* ($n_{ci1} = 21$; 17.4%) was blamed the most often for inhibiting employee creativity in ABWs; the sub codes include *Disruptive behavior of others* and *Concentration difficulties*. The following example statement clarifies the meaning of this top code:

“I feel I can’t concentrate at all because there are too many people around me, so then I can’t be creative either.” (Expert #10)

In second place, *Missing mindset* ($n_{ci2} = 20$; 16.5%) included *Not following the rules* and *Not accepting the concept*.

“If an employee does not accept this modern way of working, [they might say] ‘I can’t work like this, I’m not creative here.’” (Expert #29)

This was closely followed by the top code *Insufficient person-environment fit* ($n_{ci3} = 18$; 14.9%), which includes the sub codes *Wrong/poor ABW design* and *Lack of free suitable workplaces*.

“I think if you get the design of the work environment badly wrong [...] people are not creative at all.” (Expert #34)

The least mentioned creativity-inhibiting elements were *Loss of personalization possibilities* ($n_{ci7} = 9$; 7.4%), *Technical limitations* ($n_{ci8} = 7$; 5.8%), and *Desocialization* ($n_{ci9} = 4$; 3.3%).

During the study, the experts also mentioned ABW elements that can enhance creativity ($n_{ce} = 196$). Figure 6 shows the 14 top codes (n_{ce1-14}) comprising 48 sub codes.

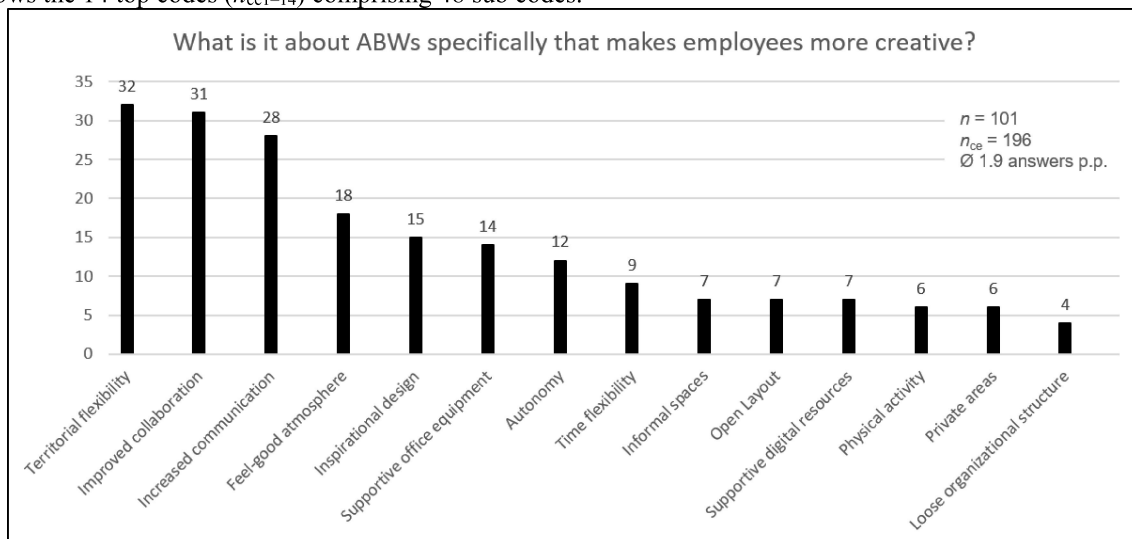


Figure 6. ABW elements that enhance creativity.

Territorial flexibility ($n_{ce1} = 32$; 16.3%) was considered the most important creativity-enhancing element. Associated sub codes include *Availability of different workplaces* and *Change of activities*. The following example statement clarifies the meaning of the top code:

“In particular, moving between different activities can certainly promote creativity.” (Expert #2)

The experts also attributed considerable importance to *Improved collaboration* ($n_{ce2} = 31$; 15.8%), which

includes the sub codes *Interdisciplinary collaboration* and *Learning from each other*.

“I need colleagues around me so that we can help each other with creative processes and project collaboration.” (Expert #1)

Increased communication ($n_{ce3} = 28$; 14.3%) was the third most important element and includes the sub codes *Better flow of information* and *Changing discussion partners*.

“This kind of environment encourages communication and the emergence of new ideas.” (Expert #70)

The least mentioned creativity-enhancing elements were *Physical activity* ($n_{ce12} = 6$; 3.1%), *Private areas* ($n_{ce13} = 6$; 3.1%), and *Loose organizational structure* ($n_{ce14} = 4$; 2.0%).

5. Discussion

5.1 Reasons for Implementing Activity-based Workspaces

The goals of our study are to identify companies' reasons for implementing ABWs and to determine which ABW elements influence creativity. Our in-depth analysis suggests that companies implement ABWs for various reasons that reflect the needs and perspective of particular companies, as indicated in Figure 7.

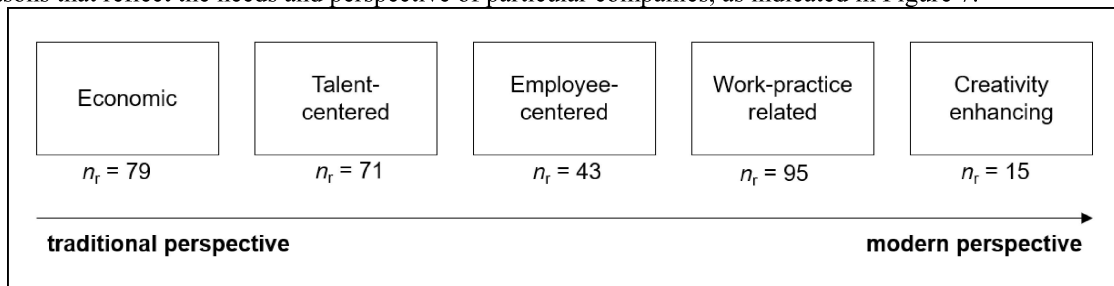


Figure 7. Company perspectives informing ABW implementation.

The results confirm that many companies still see ABW benefits primarily in economic terms. The interviewees referred to *Increasing corporate success* (n_{r7}), *Saving space* (n_{r8}), *Saving costs* (n_{r9}), and *Increasing productivity* (n_{r10})—in short, to cost and productivity reasons that align with the traditional perspective on reasons for workplace changes (Appel - Meulenbroek et al., 2011; Kim et al., 2016; Van Ree, 2002).

Increasing employer attractiveness (n_{r4}), *Strengthening corporate culture* (n_{r5}), *Modernization* (n_{r12}), and *Offering a suitable workplace* (n_{r14}) were also mentioned as important reasons for implementing ABWs, indicating a talent-centered approach. As the war for talent continues to intensify (McDonnell, 2011), attracting skilled employees by offering appealing workspaces is part of keeping up with the competition (Bokor & Fiset, 2019).

Some companies implemented ABWs as part of a more modern, employee-centered perspective, which places employees at the heart of the company and focuses on improving their well-being via PWE enhancements. *Increasing employee satisfaction* (n_{r2}) and *Increasing employee autonomy* (n_{r13}) are strong indicators that a company is responding to employee needs. The increase in motivation after ABWs implementation is a key driver of the employee-centered approach to workplace design (Appel-Meulenbroek et al., 2016).

Overall, the most common reasons for implementing ABWs were related to work practices. According to our findings, *Improving collaboration* (n_{r1}), *Increasing flexibility* (n_{r3}), and *Increasing communication* (n_{r6}) are among the six most important company reasons for switching to an ABW. This output-oriented approach is considered to exert a positive influence on work outcomes and, therefore, on overall output, which aligns with recent evidence (Kingma, 2019; Waber et al., 2014).

Our findings confirm that companies implement ABWs for various reasons. Generally, the reasons reflect the traditional economic perspective ($n_r = 79$) rather than the talent-centered ($n_r = 71$) and employee-centered ($n_r = 43$) perspectives. Overall, the modern work-practice perspective receives the most mentions ($n_r = 95$) and can thus be considered the most important reason for implementing ABWs. While previous research indicates that the reasons for implementing ABWs change over time, traditional perspectives have not disappeared, and various reasons continue to coexist. Consequently, we formulated the following proposition:

Proposition 1a: Traditional and modern perspectives on ABW implementation coexist rather than replace each other.

Our results also suggest that more attention should be paid to creativity as a reason for implementing ABWs, as this reason was not the main driver in most cases ($n_r = 15$). At first glance, creativity plays a minor role, accounting for only 5% of all mentions. However, as Suckley and Nicholson (2018) noted, there is an increasing focus on office elements that influence employee creativity. Meinel et al. (2017) argued that the opportunities afforded by creative workspaces, such as ABWs, for communication and teamwork can play an important role in creativity, and this creativity-enhancing tendency may further explain the interest in ABWs. However, many of our interviewees referred to *Improving collaboration* and *Increasing communication* as reasons for implementing ABWs. The latter are prerequisites for creativity, but *Increasing creativity* was rarely mentioned

directly, which indicates that companies still find this idea difficult to grasp (Kampylis & Valtanen, 2010) and approach creativity indirectly by trying to foster communication and collaboration. Therefore, we formulated the following proposition:

Proposition 1b: Although few companies implement ABWs with the direct intention of enhancing creativity, known creativity drivers, such as increasing communication and collaboration, are among the most important perceived reasons for ABW implementation.

5.2 Creativity-enhancing and Creativity-inhibiting Elements in Activity-based Workspaces

A further aim of our study was to identify which ABW elements can enhance or inhibit creativity. Using Manca et al.'s (2018) conceptual framework for collaborative workplaces to categorize the findings from the expert interviews, we assigned the top codes to the model's four deployment areas. The results are shown in Table 2.

Table 2. ABW Elements That Enhance or Inhibit Creativity

	Creativity-enhancing elements $n_{ce} = 196$	Creativity-inhibiting elements $n_{ci} = 121$
Physical layout and facilities	<ul style="list-style-type: none"> ▪ Inspirational design ($n_{ce5} = 15$) ▪ Supportive office equipment ($n_{ce6} = 14$) ▪ Informal spaces ($n_{ce9} = 7$) ▪ Open layout ($n_{ce10} = 7$) ▪ Private areas ($n_{ce13} = 6$) <p>$n_{ce} = 49$</p>	<ul style="list-style-type: none"> ▪ Insufficient person-environment fit ($n_{ci3} = 18$) ▪ Loss of personalization possibilities ($n_{ci7} = 9$) <p>$n_{ci} = 27$</p>
Human Resources and work practices	<ul style="list-style-type: none"> ▪ Territorial flexibility ($n_{ce1} = 32$) ▪ Improved collaboration ($n_{ce2} = 31$) ▪ Increased communication ($n_{ce3} = 28$) ▪ Time flexibility ($n_{ce8} = 9$) ▪ Physical activity ($n_{ce12} = 6$) <p>$n_{ce} = 106$</p>	<ul style="list-style-type: none"> ▪ Bustling activity ($n_{ci1} = 21$) ▪ Aural distractions ($n_{ci4} = 17$) ▪ Unfamiliar work practice ($n_{ci6} = 12$) <p>$n_{ci} = 50$</p>
Organizational culture and structure	<ul style="list-style-type: none"> ▪ Feel-good atmosphere ($n_{ce4} = 18$) ▪ Autonomy ($n_{ce7} = 12$) ▪ Loose organizational structure ($n_{ce14} = 4$) <p>$n_{ce} = 34$</p>	<ul style="list-style-type: none"> ▪ Missing mindset ($n_{ci2} = 20$) ▪ Poor implementation ($n_{ci5} = 13$) ▪ Desocialization ($n_{ci9} = 4$) <p>$n_{ci} = 37$</p>
Information and communication technologies	<ul style="list-style-type: none"> ▪ Supportive digital resources ($n_{ce11} = 7$) <p>$n_{ce} = 7$</p>	<ul style="list-style-type: none"> ▪ Technical limitations ($n_{ci8} = 7$) <p>$n_{ci} = 7$</p>

While previous studies have shown that collaborative workplaces, such as ABWs, can have both positive (see Arundell et al., 2018; Wohlers & Hertel, 2017) and negative (see Hoff & Öberg, 2015; Martens, 2011) effects on employee creativity, the experts interviewed in our study identified more creativity-enhancing ($n_{ce} = 196$) than creativity-inhibiting ($n_{ci} = 121$) ABW elements. Therefore, we formulated the following proposition:

Proposition 2a: For company experts, ABWs' creativity-enhancing elements exceed the creativity-inhibiting elements.

Our results also indicate that the deployment area of *information and communication technologies* accounts for the fewest mentions of creativity-enhancing ($n_{ce} = 7$) and creativity-inhibiting ($n_{ci} = 7$) elements. This suggests that the influence of technologies on creativity in ABWs is quite weak compared to other deployment areas. While our experts noted the negative effects on employee creativity due to ABWs' technical limitations (e.g., non-functioning hardware), supportive digital resources, such as mobile devices, were considered to

enhance creativity by facilitating flexible working. Previous research has also noted the positive impact of digital communication tools on employees' creative processes in work environments (Bonnardel & Zenasni, 2010; Kim et al., 2016). Nevertheless, the present findings indicate that the perceived impact of information and communication technologies on creativity is marginal. Therefore, we formulated the following proposition:

Proposition 2b: In ABWs, information and communication technologies play a minor role in both enhancing and inhibiting creativity.

A closer look at the role of *organizational culture and structure* suggests that many of the elements assigned to this deployment area can also impact employee creativity in ABWs. According to the interviewed experts, a loose organizational structure and the associated high levels of autonomy enhance creativity. ABWs' feel-good atmosphere was also mentioned as an important driver of creativity. However, corporate culture and structure were also considered to potentially have a negative impact on employee creativity in poorly implemented ABWs, characterized by the wrong mindset or desocialization, elements that have been neglected in previous research. Despite the many perceived positive effects of ABW culture and structure on employee creativity ($n_{ce} = 34$), these effects were slightly outweighed by the negatives ($n_{ci} = 37$), which shows that creativity-inhibiting factors must be carefully managed. Therefore, we formulated the following proposition:

Proposition 2c: Organizational culture and structure pose a particular challenge to companies implementing ABWs, as inadequate implementation can have predominantly negative effects on employee creativity.

When linking PWE and creativity, previous studies have focused on facilities and the provision of open, closed, and informal spaces (Martens, 2011; McCoy & Evans, 2002; Meinel et al., 2017). However, our results clearly show that the deployment area of *physical layout and facilities* is ranked second among creativity-enhancing elements ($n_{ce} = 49$) and third among creativity-inhibiting elements ($n_{ci} = 27$). Meanwhile, *human resources and work practices* were seen as having the highest creativity-enhancing ($n_{ce} = 106$) and creativity-inhibiting ($n_{ci} = 50$) potential. In particular, the most relevant indicators of ABWs' creativity enhancement were said to include greater flexibility, increased or improved communication and collaboration, and increased physical activity, while aural disruptive activity, aural distractions, and unfamiliar work practices were considered to be the main inhibitors of employee creativity. Therefore, we formulated the following final proposition:

Proposition 2d: In ABWs, human resources and work practices rather than physical layout and facilities exert the greatest influence, both positive and negative, on employee creativity.

Based on these findings and Manca et al.'s (2018) conceptual framework for collaborative workplaces, we developed our own model of creativity-enhancing ABWs. Figure 8 indicates the potential of each of the four deployment areas for developing and enhancing employee creativity in ABWs. While all deployment areas clearly influence one another and contribute to ABW implementation, some areas (notably *human resources and work practices*) exert a greater influence on creativity and must be weighted accordingly.

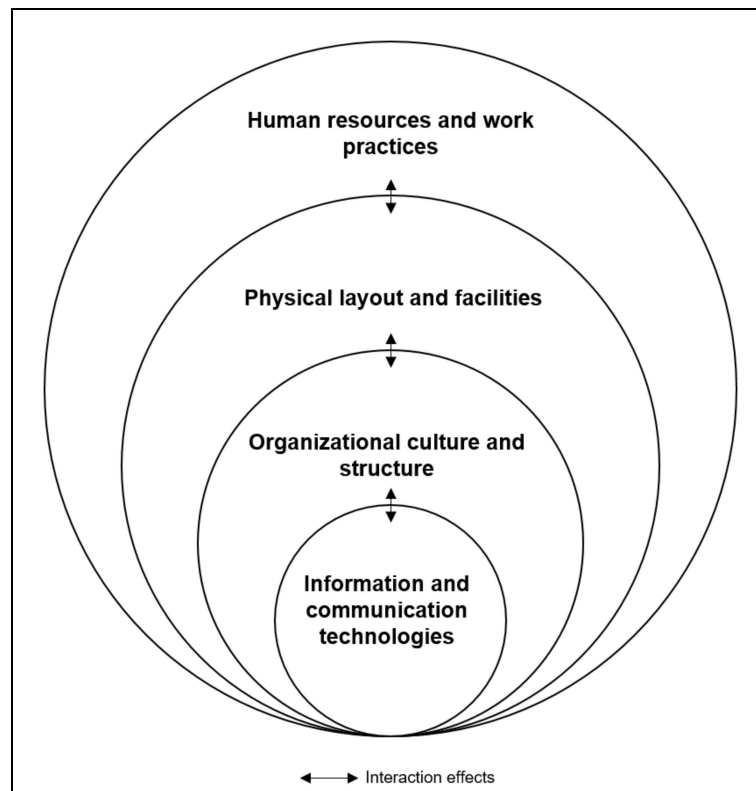


Figure 8. Framework for creativity-enhancing ABWs (Source: Authors, based on Manca et al., 2018).

5.3 Theoretical and Practical Implications

Our findings have important implications for scholarship. First, the study strengthens the links between ABWs and creativity by providing a much-needed overview. By identifying ABWs' specific elements that influence creativity, our findings extend the existing literature and deepen our understanding of the relationship between ABWs and creativity. Second, by specifying how different ABW elements influence creativity, our findings clarify earlier conflicting evidence on whether ABWs have an enhancing or inhibiting effect. Based on a large sample of 101 experts, our interview data show that ABWs' creativity-enhancing elements outweigh creativity-inhibiting elements, implying a predominantly positive effect. Finally, building on the work of Manca et al. (2018), our model of creativity-enhancing ABWs ranks *human resources and work practices* as the most influential of the four deployment areas, followed by *physical layout and facilities*, *organizational culture and structure*, and *information and communication technologies*.

Our findings also have significant practical implications for companies implementing ABWs. First, companies should use our framework to determine which areas should be prioritized to foster employee creativity, focusing on the more influential deployment areas to inform structured implementation. Second, negative effects on employee creativity can be prevented by addressing potential creativity-inhibiting elements. For example, noise-absorbing ceiling panels and carpets can be used to reduce aural distractions, and managers should allow their employees sufficient freedom to be creative rather than imposing rules that are unduly strict. In addition, conducting employee surveys prior to ABW implementation can help ensure an adequate person-environment fit while also encouraging a more positive mindset regarding activity-based working. Finally, as the deployment area of *human resources and work practices* was found to exert the strongest influence on creativity enhancement and inhibition, companies should organize workshops and training on appropriate ABW use and related work practices, with a particular emphasis on exploiting the different spaces to optimize creative output.

6. Limitations and Future Research

While this study provides novel in-depth insights, it has some limitations that suggest directions for future research. In their original conceptual framework for collaborative workplaces, Manca et al. (2018) also analyzed the interaction effects between deployment areas. While acknowledging the importance of these interaction effects, our study focuses on ranking the four deployment areas and has little to say about the relations between them. For example, it remains unclear how ABWs' *physical layout and facilities* influence *human resources and work practices*, and vice versa. Based on our framework for creativity-enhancing ABWs, future research should explore the direct interaction effects between these deployment areas.

Further, this study is limited to companies located in Germany exclusively, raising the question of whether employees from other cultural regions have different requirements for a creativity-enhancing work environment. Investigations in other countries and cultures would therefore lead to an even more comprehensive understanding of ABWs' impact on creativity. This is especially important for companies that have office locations around the world, in order to assess whether their preferred PWE can be used in other countries as well or needs to be adapted.

While our findings indicate that *information and communication technologies* exert the least influence (both positive and negative) on employee creativity in ABWs, many employees have been unable to use company facilities during the COVID-19 pandemic, and collaboration and communication with and between their teams have depended on digital tools. It seems important to explore how this has affected creative processes in teams and how better use of these digital technologies can be made to enhance employee creativity, both now and in the future (Toumi et al., 2021). As innovation typically emerges in the PWE, future research should explore how ABWs can more fully support employee creativity in the “new normal.”

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Appendix

A1

Interview Guideline

Part 1: About the Interviewee

1. Could you briefly tell us something about yourself? (Age [in years]), job title and area of responsibility, job tenure [in years], industry experience [in years], management responsibility or not).
2. What do you understand by the term activity-based workspaces?
3. Do you work in an ABW? Or have you worked in one?
4. Have you played a decisive role in the design of an ABW?

Part 2: About the Company

1. How many employees work in your company?
2. In which industry is your company mainly active?
3. How old is your company (in years)?
4. For how long has your company been working in ABWs (in years)?

Part 3: Reasons for Implementing ABWs

1. Why did your company implement an ABW?
2. What could be the goals of other companies?
3. Are there specific departments / employee groups for which the ABW is particularly suitable? Which ones?
4. Are ABWs part of your corporate strategy?

Part 4: ABW Execution

1. What does an ABW look like in your company?
2. What technical equipment do you need to work activity-based or flexibly?
3. What types of space exist in your company?
4. Which spaces are particularly suitable for which tasks?

Part 5: ABW Impact

1. What positive effects do ABWs have on the individuals in your company?
2. What negative effects do ABWs have on the individuals in your company?
3. What positive effects do ABWs have on your company in general?
4. What negative effects do ABWs have on your company in general?

Part 6: ABWs and Creativity

1. What do you need to be creative? (In other words, what stimulates the creation of new ideas?)
2. Can ABWs make employees more creative?
3. What is it about ABWs specifically that makes employees more creative?
4. What is it about ABWs specifically that can inhibit employee creativity?

A2
What were the reasons for implementing an ABW?

#	Top Code	Sub Code	Mentions <i>n_i</i>	Example Statement	Expert #
1	Improving collaboration	Increasing collaboration in general	16	"The advantage of working in an ABW is that, in the best case, you are much more collaborative [...] because people don't just sit in their own rooms, they get to know much more about each other."	Expert #15
		Fostering interdisciplinary exchange	8	"The main goal for us was to promote more efficient official channels, for example exchange between the individual departments."	Expert #99
		Creating a culture of networking	7	"[...] we want to encourage random conversations, random meetings, and socializing and connecting."	Expert #75
		Enabling spontaneous meetings	4	"[...] that you can also talk and work in an open space across projects [...] exchanging ideas and preventing classical silo thinking."	Expert #66
		Increasing teamwork in general	4	"[...] we need teamwork, we need areas that also support this team idea."	Expert #83
		Improving project- and task-oriented work	2	"We created a space where colleagues could flexibly select the space and work on their projects [...]."	Expert #81
		Increasing employee satisfaction	13	"If employees are satisfied and happy in their jobs, they will also enhance company performance. I think that always has to be the goal—focus on people."	Expert #17
		Increasing employee well-being	9	"The goal is the well-being of the employee. Of course, we want to be as free as possible and have fun at work."	Expert #86
		Responding to employees' work needs	6	"The other reason is that [activity-based working] is how employees will want to work in the future."	Expert #25
		Increasing employer motivation	4	"So, I think it's important [...] to motivate employees."	Expert #41
3	Increasing flexibility	Improving work-life balance	2	"The main reason is [...] to give employees the opportunity to balance their private and professional lives."	Expert #42
		Increasing flexibility	19	"One goal is to increase flexibility."	Expert #87
		Increasing agility	9	"The original motivation [...] was to promote reaction speed and agility."	Expert #79
4	Increasing employer attractiveness	Making it easier to build project teams	1	"[...] restructuring processes to enable new teams to be established more easily [...]."	Expert #14
		Increasing workplace attractiveness	9	"The goal is clearly [...] to make multiple attractive workspaces available to employees."	Expert #19
5	Strengthening corporate culture	Attracting new talent	6	"The company wants to [...] attract talent."	Expert #99
		Increasing employer attractiveness in general	6	"What is our goal? To become a more attractive employer."	Expert #54
		Employer branding	3	"One reason is certainly employer branding [...] to advertise that we are not a classic large corporation."	Expert #23
		Counteracting fluctuation	2	"Like every consultancy, we struggle with fluctuation. [...] That's why we believe we have to do something about it."	Expert #39
		Promoting culture change	12	"One reason is that the corporate culture, which is very strong in our company, is changing."	Expert #29
6	Increasing communication	Increasing exchange	17	"[...] we want to promote exchange [...]."	Expert #76
		Increasing interpersonal contact	3	"Another reason is that the staff feel a sense of belonging, with opportunities to play together, eat together, and exchange ideas."	Expert #37
		Simplifying knowledge transfer	3	"Mainly so that [...] the hurdles are low for knowledge exchange."	Expert #57
		Faster exchange	2	"So that communication goes faster [...] and you don't have to write emails."	Expert #61
7	Increasing corporate success	Increasing innovation	11	"We try to give as much freedom as possible [...] and thus the potential to unfold innovative power in the mind."	Expert #42
		Increasing revenue	10	"After that, it's the usual goal [...] to bring in revenue."	Expert #33
8	Saving space	Saving space in general	7	"Ultimately, of course, it is to save space [...]."	Expert #71
		Increasing space efficiency	7	"It's about using the space efficiently."	Expert #99
		Optimizing workplaces	6	"It's simply a matter of supporting the employees with optimized office space or collaborative spaces [...]."	Expert #10
		Emphasizing desk sharing	1	"We want that the desk-sharing principle prevail, which means that no one has a fixed workstation [...]."	Expert #70
		Saving costs in general	16	"This is definitely intended to reduce and contain costs."	Expert #5
10	Increasing productivity	Improving resource efficiency	3	"A goal is to use all the resources that the company makes available to you and [work] in a resource-conserving and resource-efficient way."	Expert #76
		Increasing employee productivity	9	"We are introducing an ABW because we expect benefits in terms of employee productivity."	Expert #13
		Increasing work efficiency	5	"[...] it's very important to us, everything that affects efficiency."	Expert #97
11	Increasing creativity	Optimizing processes	4	"For us, the objectives are [...] to optimize process flows."	Expert #54
		Increasing creativity in general	13	"[...] we want to build an environment that will promote [...] creativity [...]."	Expert #4
12	Modernization	Encouraging creative work	2	"We came to the conclusion that we want to do more to encourage [...] creative work."	Expert #1
		Implementing modern ways of working	5	"The managing director said he would like people to [...] adopt a modern way of working."	Expert #32
		Becoming a digital company	3	"We wanted to move to digital working, which was no longer possible in the old set-up."	Expert #29
13	Increasing employee autonomy	Investing in the future	3	"[...] to position us for the future."	Expert #36
		Promoting self-responsible work	4	"The main reason is to promote self-responsible action [...]."	Expert #43
14	Offering a suitable workplace	Providing freedom of workspace choice	4	"We want the employees to use the spaces accordingly to their current requirements."	Expert #68
		Increasing freedom in general	1	"Because we believe that with these spatial structures, it is possible to provide freedom to the employees [...]."	Expert #52
		Offering suitable working environments	7	"Why introduce activity-based working? [...] Because it offers a working environment that is ideally suited to employees' activities."	Expert #13
		Enabling concentrated work	1	"Why do we do this? [...] To be able to work in a very concentrated way."	Expert #64
		Sum	303		

A2 (continued)
What were the reasons for implementing an ABW?

#	Top Code	Sub Code	Mentions <i>n_i</i>	Example Statement	Expert #
6	Increasing communication	Increasing exchange	17	"[...] we want to promote exchange [...]."	Expert #76
		Increasing interpersonal contact	3	"Another reason is that the staff feel a sense of belonging, with opportunities to play together, eat together, and exchange ideas."	Expert #37
7	Increasing corporate success	Simplifying knowledge transfer	3	"Mainly so that [...] the hurdles are low for knowledge exchange."	Expert #57
		Faster exchange	2	"So that communication goes faster [...] and you don't have to write emails."	Expert #61
8	Saving space	Increasing innovation	11	"We try to give as much freedom as possible [...] and thus the potential to unfold innovative power in the mind."	Expert #42
		Increasing revenue	10	"After that, it's the usual goal [...] to bring in revenue."	Expert #33
9	Saving costs	Saving space in general	7	"Ultimately, of course, it is to save space [...]."	Expert #71
		Increasing space efficiency	7	"It's about using the space efficiently."	Expert #99
		Optimizing workplaces	6	"It's simply a matter of supporting the employees with optimized office space or collaborative spaces [...]."	Expert #10
		Emphasizing desk sharing	1	"We want that the desk-sharing principle prevail, which means that no one has a fixed workstation [...]."	Expert #70
		Saving costs in general	16	"This is definitely intended to reduce and contain costs."	Expert #5
10	Increasing productivity	Improving resource efficiency	3	"A goal is to use all the resources that the company makes available to you and [work] in a resource-conserving and resource-efficient way."	Expert #76
		Increasing employee productivity	9	"We are introducing an ABW because we expect benefits in terms of employee productivity."	Expert #13
		Increasing work efficiency	5	"[...] it's very important to us, everything that affects efficiency."	Expert #97
11	Increasing creativity	Optimizing processes	4	"For us, the objectives are [...] to optimize process flows."	Expert #54
		Increasing creativity in general	13	"[...] we want to build an environment that will promote [...] creativity [...]."	Expert #4
12	Modernization	Encouraging creative work	2	"We came to the conclusion that we want to do more to encourage [...] creative work."	Expert #1
		Implementing modern ways of working	5	"The managing director said he would like people to [...] adopt a modern way of working."	Expert #32
		Becoming a digital company	3	"We wanted to move to digital working, which was no longer possible in the old set-up."	Expert #29
13	Increasing employee autonomy	Investing in the future	3	"[...] to position us for the future."	Expert #36
		Promoting self-responsible work	4	"The main reason is to promote self-responsible action [...]."	Expert #43
14	Offering a suitable workplace	Providing freedom of workspace choice	4	"We want the employees to use the spaces accordingly to their current requirements."	Expert #68
		Increasing freedom in general	1	"Because we believe that with these spatial structures, it is possible to provide freedom to the employees [...]."	Expert #52
		Offering suitable working environments	7	"Why introduce activity-based working? [...] Because it offers a working environment that is ideally suited to employees' activities."	Expert #13
		Enabling concentrated work	1	"Why do we do this? [...] To be able to work in a very concentrated way."	Expert #64
		Sum	303		

A3
What is it about ABWs specifically that can inhibit employee creativity?

#	Top Code	Sub Code	Mentions <i>n_d</i>	Example Statement	Expert #
1	Bustling activity	Visual distractions	9	"If I sit in an open space and I am constantly disturbed by people walking around, then, of course, it's diminishing creativity."	Expert #64
		Disruptive behavior of others	7	"To be creative, personally I need quiet [...]. If I go into a meeting room, I don't want someone to knock on the door because they think it's 'urgent' and pull me out anyway."	Expert #61
		Concentration difficulties	3	"I feel I can't concentrate at all because there are too many people around me, so then I can't be creative either."	Expert #10
		Overstimulation	2	"Perhaps also some people are so overwhelmed [...] that they don't know exactly what is right for them."	Expert #11
2	Missing mindset	Wrong handling of an ABW	6	"Creativity in an ABW can be diminished [...] by blocking spaces or places to meet."	Expert #6
		Not following the rules	5	"If staff don't follow the rules, or some people simply ignore the rules, that can also be a problem."	Expert #76
		Not accepting the concept	4	"If an employee does not accept this modern way of working, [they might say] 'I can't work like this, I'm not creative here.'"	Expert #29
		Leadership culture prevents new ways of working	4	"I'm talking about a leadership culture [...] that doesn't allow this [new approach] and favors a strict hierarchy. I think that's when it gets difficult."	Expert #32
3	Insufficient person-environment fit	Messy workplaces	1	"Messy desks inhibits many people."	Expert #86
		Lack of free/suitable workspaces	7	"There is no creativity if the employees don't find suitable workplaces."	Expert #28
4	Aural distractions	Wrong/poor ABW design	4	"I think if you get the design of the work environment badly wrong [...] people are not creative at all."	Expert #34
		Discomfort in general	3	"It can block employees if they don't feel comfortable where they are."	Expert #87
		Workspace does not meet employee needs	2	"[...] if the different space types are not aligned with actual needs and prerequisites."	Expert #7
		Uncertainty	2	"[...] during the introductory phase, fear of loss and the unknown play a big part and create resistance."	Expert #1
4	Aural distractions	Noise level too high	8	"[...] when it is too loud in the office."	Expert #7
		Noise level in general	7	"Blocking creativity? Noise, for example [...]."	Expert #12
		Loud phone calls	2	"We used to have a foosball table in our office. That reduced creativity because it became loud and exhausting."	Expert #33

A3 (continued)
What is it about ABWs specifically that can inhibit employee creativity?

#	Top Code	Sub Code	Mentions n_a	Example Statement	Expert #
5	Poor implementation	Wrong implementation	4	"If an ABW is poorly implemented, it can kill creativity."	Expert #35
		Lack of change management	4	"[...] when [employees] have not been trained and don't know what they want, what they need, or what is available."	Expert #98
		Transition to ABWs	3	"Difficulties are inevitable during the transition to ABWs."	Expert #75
6	Unfamiliar work practice	Limiting rules	2	"At most, it's blocked if too many rules are involved."	Expert #41
		Greater pressure	4	"Creativity can be blocked because the employer demands more and creates pressure."	Expert #97
		Unfamiliar concept	4	"[...] if the concept is not really well implemented and the work simply does not align with the employee's way of working, which may have developed over a long period."	Expert #97
7	Loss of personalization possibilities	Difficulties in self-organizing	3	"[...] you first have to sensitize an employee to deal with this new freedom to self-organize."	Expert #96
		Lack of structure	1	"A lack of structured processes [...] will always introduce an element of chaos."	Expert #34
		Lack of individual space	5	"It can be [difficult] when people are sitting too close."	Expert #85
8	Technical limitations	Uninspiring environment	2	"Creativity can be inhibited if the ABW is equipped with boring desk columns."	Expert #3
		No fixed workspace	2	"Eliminating fixed workspaces can block some people's creativity."	Expert #94
		Technical hurdles	3	"[...] if it's too difficult to log in at a workstation, you are blocked."	Expert #18
9	Desocialization	Non-functioning hardware	3	"[...] hardware that doesn't work, like my laptop or mobile phone [...]"	Expert #16
		Lack of hardware	1	"[...] when technology and hardware are limited, people are limited in what they can do, and this inhibits their creativity."	Expert #7
		Searching for someone	2	"Because it can be annoying when you're looking for a certain person and you just can't find them."	Expert #10
		Isolation	1	"If [...] you feel very isolated, the setting is not right."	Expert #96
		Intimidation	1	"If the individual sitting next to you has a particularly strong personality, you may not feel able to express your ideas, even if they're good [...] which leads to blockages."	Expert #85
		Sum	121		

A4
What is it about ABWs specifically that makes employees more creative?

#	Top Code	Sub Code	Mentions n_{ce}	Example Statement	Expert #
1	Territorial flexibility	Availability of different workspaces	14	"Employees need more influences through different workplaces because creativity is also based on this input."	Expert #1
		Territorial flexibility in general	12	"The flexibility through different spaces also increases for the employees, and that helps as well."	Expert #29
		More flexible thinking	3	"Definitely by motivating employees to think more flexibly."	Expert #9
		Change of activities	3	"In particular, moving between different activities can certainly promote creativity."	Expert #2
2	Improved collaboration	More collaboration	13	"I need colleagues around me so that we can help each other with creative processes and project collaboration."	Expert #1
		Interdisciplinary collaboration	8	"When you have networking and interdisciplinary exchange, this makes employees more creative."	Expert #22
		Different points of view	4	"That you can look at problems from multiple angles and come up with creative solutions."	Expert #33
		Learning from each other	4	"I believe learning from others promotes a certain level of creativity."	Expert #97
3	Increased communication	Establishing strong relationships	2	"Employees meet a larger number of people and build relationships."	Expert #86
		Better flow of information	12	"By asking around, you're picking up information. That's when you're more creative."	Expert #33
		More communication	5	"This kind of environment encourages communication and the emergence of new ideas."	Expert #70
		Unplanned communication	4	"To achieve higher employee creativity, we enable unplanned exchanges."	Expert #66
4	Feel-good atmosphere	Changing discussion partners	3	"When [...] have discussions with someone different, I suddenly get a completely different perspective on things."	Expert #44
		Faster communication	2	"People enter into discussions and create new ideas more quickly."	Expert #27
		Easier communication	2	"[...] you can simply go somewhere else to talk with two or three people [...]"	Expert #41
		Diverse impressions	7	"You have more impressions, and this is important for creativity."	Expert #1
5	Inspirational design	Feeling good	5	"I am convinced that the well-being of the employees is very important [...] to be creative."	Expert #90
		Removing blockages	2	"This [atmosphere] also helps you to be creative [...] if you are blocked."	Expert #2
		Casual atmosphere	2	"And the relaxed working atmosphere can also increase creativity."	Expert #10
		Sensory stimulation	2	"I think it's about stimulation of the senses."	Expert #14
6	Supportive office equipment	Interior design in general	8	"We also try to create an environment and a design that is visually stimulating [...]"	Expert #83
		Color concept	3	"I also feel more [...] creative as a result of the new colorful spaces—they're inspiring."	Expert #98
		Plants	2	"It could also be plants on the wall that ensure your mind is activated."	Expert #26
		Aesthetic surroundings	2	"If there's chaos, or I'm sitting in an area that I don't find visually beautiful, I tend to feel constrained, and I can't let my creativity run free."	Expert #23
7	Supportive office equipment	Whiteboard	7	"Tools [...] like whiteboards definitely help people to be more creative."	Expert #65
		Work resources (post-its, pens, magic paper)	4	"The permanent availability of office resources [...] promotes this creative process."	Expert #59
		Writable walls	2	"With the introduction of activity-based working, each of our meeting rooms has writable walls [...] to stimulate creativity."	Expert #74
		Flipcharts	1	"For example, flipcharts [help me] to manage this creative process."	Expert #95

A4 (continued)
What is it about ABWs specifically that makes employees more creative?

#	Top Code	Sub Code	Mentions n_{ce}	Example Statement	Expert #
7	Autonomy	Work more freely	4	"That employees have certain freedoms in their work."	Expert #23
		Free allocation of work	4	"The freedom to decide when I do something just makes me more creative."	Expert #36
		Individuality	2	"For employees, it [creativity] depends on the possibility for individuality."	Expert #11
		Opportunities for development	2	"[...] creativity or development is supported by activity-based working."	Expert #80
8	Time flexibility	Flexible working time	6	"Everyone has their own rhythm. If you can decide when you want to work, you become more creative."	Expert #37
		More time	3	"To have more time to engage with ideas."	Expert #10
9	Informal spaces	Informal seating area	3	"We have a lounge [...] which often helps one to be creative."	Expert #4
		Relaxation	2	"I think ABWs make you more relaxed and satisfied."	Expert #5
		Social interaction	2	"... this [ABW] facilitates social interaction and the emergence of creativity."	Expert #3
10	Open layout	Open spaces	4	"The condition of openness through open spaces increases creativity."	Expert #39
		Transparent environment	2	"Innovation also has something to do with [...] visibility. In an ABW, for me, that's what innovation needs."	Expert #54
		Looking out the window	1	"Large windows with a view—that makes a difference [to creativity]."	Expert #5
11	Supportive digital resources	New digital tools	5	"We do a lot of creative work [...] by using digital Kanban boards. It's all becoming more IT-focused."	Expert #4
		Adequate technical equipment	2	"... when the company provides really good technical opportunities to work things out."	Expert #51
12	Physical activity	More movement	4	"Change of location per se makes employees more creative through movement."	Expert #53
		More activity	2	"When I'm standing, I stimulate the synapses in a different way. In other words, I get new ideas."	Expert #6
13	Private areas	Silence	4	"A lot of creativity is about concentration and being able to work things out in a quiet environment."	Expert #93
		Quiet zones	2	"It's about [...] having an area for retreat."	Expert #86
14	Loose organizational structure	Flat hierarchies	2	"[...] the fact that leadership isn't [...] hierarchical."	Expert #40
		Change culture	2	"An open change culture is a very powerful driver of creativity."	Expert #91
		Sum	196		

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