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# **Employee Creativity and Information Technology in the Context of COVID-19 Pandemic: Effect of Large-Scale Unexpected Event on Organizational Innovation**

*Emergent Research Forum (ERF)*

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## **Abstract**

In this study, we propose a theoretical model of factors influencing employee creativity as well as a proposed approach to testing this model. In the past, employee creativity and organizational innovation have been studied in the context of a stable work environment. However, the COVID-19 pandemic has altered the fundamentals of the traditional work environment in such a way that existing IS theories may not address creativity and innovation issues. We address this gap by proposing a theoretical model to investigate the antecedents and moderators of employee creativity and innovation in a pandemic context.

## **Keywords**

Creativity, innovation, COVID-19, remote working, IT capability.

## **Introduction**

The COVID-19 pandemic has changed the landscape of the work environment in a way that has never been seen before. At the peak of the pandemic, most organizations abruptly transitioned to allow their employees to work remotely with organizations being forced to reorganize their organizational structures and change their organizational processes (Karanasios 2021). It is unclear how these radical changes which include a shift from on-site to remote working, the introduction of new working tools and technologies, reward systems focusing on output among others, which have become near-permanent in most organizations impact creativity and innovation (Foss 2020).

It is well established that information technology (IT) and globalization in the 21<sup>st</sup> century have increased the competitive landscape in which organizations operate thereby heightening the importance of innovation (Demir and Javorcik 2018). Organizations must continually innovate in their creation of products and services to stay competitive (Rivera et al. 2021). Pandemics and natural disasters make this already difficult task a herculean one. Organizations lose resources as people are displaced and physical resources are limited. Some organizations do not survive at all. Yet, times like these are when the role of IT becomes crucial (Rudra et al. 2018). Indeed, an organization's innovativeness is rooted in the innovation by its employees (Janssen 2005). It is unclear to what extent the innovativeness of organizations and thus their employees have been affected by the global pandemic. More importantly, existing information systems (IS) theories were developed for explaining, describing information systems and innovation in a stable environment and not in the context of a global pandemic that has affected organizations (Gregor 2006). So, the existing IS theories related to organizational innovation are unlikely to address these unique pandemic-related challenges faced by organizations. In this research, we attempt to address this gap in the IS literature.

To begin our discussion, we turn to innovation research related which has defined innovative work behavior as a two-stage process consisting of idea generation or creativity and idea implementation (Anderson et al.

2014). Employees might not always have full control of idea implementation. However, idea generation is widely within their control. Consequently, employee creativity is the driving force behind employee innovative behavior (Janssen 2005). One of the important factors found to influence creativity is the work environment. Organizational creativity theory posits that the work environment influences creativity by impacting other individual characteristics that affect individual creativity (Amabile 1983).

Work environment characteristics that have been found to influence individual innovation behavior include organizational climate, peer support, and supervisor supportiveness (Janssen 2005). Traditionally, employees in most organizations are collocated when working making it possible to realize these characteristics. However, in the face of this new paradigm of remote working, most of these factors might change or may be completely absent, thereby impacting employee innovative behavior. One may argue that virtual teams have been in existence before the pandemic, therefore it is important to note the distinction between the new work environment created by pandemic-induced remote working and that of virtual teams. While virtual teams are designed with well-defined management and IT structures for collaboration, communication, and knowledge sharing, employees who transitioned into working from home due to the pandemic found themselves in a working environment with undefined structures, strategy, and policy especially at the beginning of the pandemic in early 2020. Nevertheless, there have been calls to fully explore the factors that influence creativity in virtual teams (Gilson et al. 2015), especially in the context of a pandemic or unforeseen wide-scale disasters. Thus, we specifically ask the following questions:

1. How does remote working influence employee creativity in the context of the work environment impacted by the Covid pandemic?
2. How does a remote working environment impacted by the Covid pandemic influence employees' intrinsic task motivation and creativity?

To answer our research questions, we draw on Amabile's (1983) componential theory of creativity to examine the work environment that is created in remote working settings and the impact it has on employees' motivation to innovate and create.

## **Literature review, theory, and hypothesis development**

### ***Remote Working, Creativity, and Innovation***

Thanks to IT, most organizations were able to transition to remote working at the peak of the pandemic. Indeed, remote working has been a resilience strategy for organizations during crises (Sakurai and Chughtai 2020). Literature on the effects of remote working on employees and organizations is mixed. Studies have found positive effects including increased performance, freedom to work, and decrease in work-home conflict (Bloom et al. 2015). Yet, there are negative findings like lack of social connection and conflict in virtual teams (Hinds and Bailey 2003). One area that has not received enough attention is creativity in remote working (Gilson et al. 2015). Research suggests that getting more employees to work remotely and virtually can increase diversity and creativity (Zakaria et al. 2004). However, different demographic metrics have been found to have different effects on creativity (Martins and Shalley 2011). While these are great contributions, these studies have focused more on individual characteristics and less on work environment.

### ***Componential Theory***

Amabile's (1983) componential theory provides the theoretical foundation in our quest to answer our research questions. The theory proposes that employee creativity is influenced by four main components. Three of these components: creativity-relevant skills, domain-relevant skills, and intrinsic task motivation are intra-individual skills while the other component: work environment is external to the individual. The theory proposes that for creativity to materialize, all four components must be available. However, for this study, we focus on only one of the three intra-individual components: intrinsic task motivation and work environment. We argue that both creativity-relevant skills and domain-relevant skills at any point in time will remain the same regardless of the work environment. Creativity-relevant skills are defined as cognitive and personality characteristics that help an individual solve problems by taking risks, and using different perspectives to generate novel ideas (Amabile 1983). These are innate traits that are developed over time and not affected by a sudden change of work environment. In the same way, domain-relevant skills which

include skills and expertise related to a field (Amabile 1983), are also specific to an individual based on training and are not expected to change drastically due to a change of work environment. We proceed to examine the other two components related to our study to develop our hypotheses.

## **Proposed Theoretical Model**

### ***Intrinsic Task Motivation***

Intrinsic task motivation is found to emanate from an individual's attitude towards a task and his or her perceptions of the rewards he or she will get from engaging in the task (Amabile 1983). These rewards including enjoyment and satisfaction are inwardly driven as opposed to extrinsic motivation like remuneration, competition, etc. Intrinsic task motivation is seen as the driver for creativity. Individuals with low motivation tend to undertake the minimum required tasks or routine tasks. Previous studies have empirically confirmed the relationship between intrinsic motivation and creativity. Studies have concluded that certain cognitive factors can increase intrinsic motivation which in turn increases creativity (Shalley and Perry-Smith 2001). Therefore, we argue that in remote working, employees with higher intrinsic motivation are more likely to exhibit creative behavior. Interestingly, recent studies on intrinsic motivation and creativity have emphasized how external factors like extrinsic motivation and social environment can affect intrinsic motivation (Grant and Berry 2011). We argue that the workplace can influence intrinsic motivation. Organizational climate, and the physical presence of peers and supervisors may have an impact on an employee's intrinsic motivation to innovate when on site. However, these conditions are absent when working remotely. Therefore, the level of intrinsic motivation when on-site might be different from when an employee works remotely. Thus, we hypothesize the following:

- H1: Intrinsic motivation positively influences employee creativity in Covid impacted work environment.  
H2: Workplace moderates the intrinsic motivation and employee creativity relationship.

### ***Work Environment***

The only external component of the componential theory is the work environment. The work environment provides the conditions for creative behavior to be exhibited and consists of five main categories of factors. First, encouragement of creativity, which captures support for creative behavior in the organization from organizational, supervisory, and peer levels. Researchers found organizational support, supportive supervision, and team support to positively influence creativity (Çokpekin and Knudsen 2012). It is likely that the physical presence of peers, supervisors, etc., at the workplace and their support (or not) will impact employee creativity differently than their absence in remote working. The second is freedom which indicates the autonomy an employee is afforded to work. Employees who enjoy more freedom to work have been found to exhibit creative behavior (Unsworth and Clegg 2010). However, we do not know how remote working impacts employees' perception of freedom. The third is resources. Remote working might impact employees' access to resources needed for work. Availability of resources may be a limitation for employee creativity (Unsworth and Clegg 2010). The fourth category is pressures. There is a growing concern about the effects of remote working pressures on well-being (Hafermalz and Riemer 2021). However, very little is known on how these pressures affect employee creativity. Organizational impediments is the final category. These include organizational politics, toxic competition, and conservativeness which inhibits creative behavior. Remote working might likely decrease the impact of these on employee creativity. With the above discussion, we hypothesize the following:

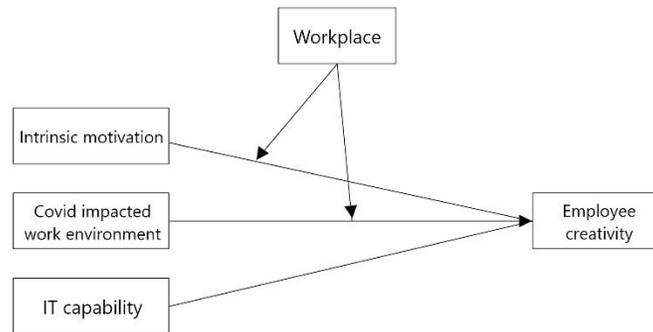
- H3: Covid impacted work environment influences employee creativity.  
H4: Workplace moderate the Covid impacted work environment and employee creativity relationship.

### ***IT Capability and Innovation***

Research has found that IT contributes to innovation in three main ways (Kleis et al. 2012). First, IT enables collaboration between peers. Second, IT provides a platform for the management of new ideas. Third, IT supports the design and implementation of creative ideas. Organizations that invest in IT are likely to see an increase in innovation performance. Thus, the level of IT capability that supports creativity and

innovation in an organization impact employee creativity. More so in remote working, availability, and accessibility to key IT systems impact employee creativity. therefore, we hypothesize the following:

H5: Organizational IT capability influences employee creativity in Covid impacted work environment.



**Figure 1. Proposed theoretical model**

## Research Methodology

To answer our research questions, we will test our proposed research model using survey research methodology. The nature of our study requires that we collect primary data from the population of interest, in this case, employees working from home due to pandemic-related circumstances. To achieve some level of generalizability, we will collect data from employees across various industries in the US who were forced to work remotely due to the pandemic. Therefore, an instrument based on theory will be designed to collect data via a third-party collection platform. Specifically, we will draw from the componential theory to develop questionnaires on intrinsic motivation, work environment, IT capability and creativity related to each employee to test our hypotheses. This will be administered after satisfactory results from a pre-test and pilot study. We will use structural equation modeling to analyze the data to test the hypotheses.

## Conclusion

Remote working is not just a resilience strategy for organizations anymore. It is now an important way of working following the COVID-19 pandemic. Therefore, it is important for organizations to realize the full benefits of remote working in terms of employee creativity for innovation. Previous research has focused on individual factors that affect creativity. Our study is one of the first few studies that highlights the impact of the new work environment on creativity. Thus, our study will contribute to theory in two ways. First, we will contribute to creativity and innovation literature by investigating the relationship between intrinsic motivation, work environment, IT capacity and employee creativity. Second, extant research has studied employee creativity under the assumption of a stable organizational conditions. We contribute by studying employee creativity in the context of a large-scale unexpected event in an organization. Our study also has practical implications. First, our study will highlight how managers' actions and inactions can influence employee creativity in remote working settings. Second, the pandemic exposed how most organizations lacked IT capabilities to support remote working. This study will highlight why organizations must invest in IT to increase employee creativity for remote workers.

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