

The Impact of Dynamic Cloud Computing and Employee Value Co-Creation on Employee Productivity

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Abstract

Despite significant investments in advanced digital infrastructures, organizations continue to face the “digital productivity paradox,” where technological capacity fails to translate into sustained performance gains. This paper advances a conceptual framework positioning *Employee Value Co-Creation (EVCC)* as the critical mediator between dynamic cloud computing environments and employee productivity. Drawing on Service-Dominant Logic and Job Demands-Resources Theory, EVCC is operationalized as a unidimensional construct that captures employees’ role as resource integrators who actively reshape workflows and solve operational challenges in collaboration with technology. Rather than treating employees as passive adopters, the framework highlights their agency in co-producing task efficiency, output quality, and organizational agility. By reframing digital workplaces as bottom-up ecosystems of co-creation, this study contributes to Information Systems, Service-Dominant Logic, and Strategic Human Resource Management literatures, offering both theoretical insight and practical guidance for managers seeking to transform IT investments into measurable productivity outcomes.

Keywords: Dynamic Cloud Computing, Employee Value Co-Creation, Employee Productivity

Introduction

For decades, the predominant approach to utilizing technology within organizations has been that of a top-down approach where powerful software is deployed to enforce processes within organizations and drive increased productivity. A mass of new technologies is currently being purchased by organizations as huge sums of capital are being expended on new items such as Generative AI co-pilots, low-code automation, digital twins, and the organization’s social networks. However, many organizations are currently feeling the effects of what is being described as the ‘digital productivity paradox’ (Brynjolfsson et al., 2025). In basic terms, although teams have access to the world’s highest quality software, a variety of operational

problems, including operational friction and tool fatigue, as well as several problems relating to the inefficient use of the software that already exists, are being encountered. A variety of reasons underpin the digital productivity paradox experienced by organizations. In the first place, the way in which organizations currently deploy technology today is largely rooted in conventional management theories and practices from the last few decades (Barki & Hartwick, 2007; Davenport, 1998). In essence, from this perspective, the enterprise technology systems are 'offline' systems that are put into place before their implementation, and which are subsequently 'downline' systems that are used by several executors who are expected to work in accordance with the processes that have been previously defined. There is a considerable body of evidence which details how today's knowledge workers use technology for a host of real-time work issues on the front lines of work (Keegan & Meijerink, 2025; Zhao et al., 2025). Moreover, it should be noted that the term is being used in a fixed and static sense. As previously noted, today's workers 'mold and adapt' the software that is at their disposal to deal with a few problems for which no off-the-shelf solutions currently exist. However, technology by itself is not enough to generate performance. Employees must function as active resource integrators and modify bottom-up processes to work collaboratively and solve problems together (Vargo & Lusch, 2016). For this interactive reality to be studied and explained, an additional theoretical framework is required. Within organizational research on internal collaboration, numerous dimensions are frequently studied in a fragmented and multi-dimensional manner. Moreover, such a perspective captures the full extent of employee behavior and makes it possible to study how they co-create value in collaboration with others, with management, and with digital systems. To date, value co-creation has largely been studied in the context of external Service encounters with customers (Prahalad & Ramaswamy, 2004; Yi & Gong, 2013). In organizational research, however, there is an immense gap in the study of value co-creation in internal organizational settings, which are supported by technology. The current paper therefore attempts to close this research gap by conceptualizing Employee Value Co-creation from a unidimensional perspective. This study is based on Service-Dominant (S-D) Logic (Vargo & Lusch, 2016) and on Job Demands-Resources (JD-R) Theory (Bakker & Demerouti, 2007). The unidimensional framework of Employee Value Co-creation proposed in this study serves as the primary mediating variable that transforms technology into task efficiency, output quality, and organizational agility (Jia & Li, 2025; Yang et al., 2026). This study therefore shifts the focus of research from technology acceptance to value co-creation and thus offers researchers and practitioners an empirical roadmap for constructing high-performance digital work environments in which all employees can perform at their best.

Background & Context

Technology in the enterprise has historically been a 'top-down' affair, designed behind closed doors by a few individuals or groups within an organization. Technology in the workplace was initially confined to siloed software systems, including some of the early 'Enterprise' systems and databases. Employees were required to execute tasks on behalf of technology, with little input or influence (Barki & Hartwick, 2007). Much of the technology in use today was designed for the industrial-era organization and is therefore structured in nature, akin to the organizations that they support. However, as the world is changing at a rapid pace, and we are increasingly connected, the 'old' ways of implementing technology in the enterprise are becoming less relevant (Ramaswamy & Ozcan, 2018). New technology in the workplace is no longer a static software package. Instead, it is an interactive, dynamic digital work ecosystem

that is blurring the lines between the creator and user of technology. However, such digital work ecosystems are environments in which employees function as active resources, integrating resources to co-create value in real time using the tools required to address problems as they arise (Vargo & Lusch, 2016). In such environments, employees are no longer simply consuming software as part of their work. Instead, they shape, prompt, and even tweak their technology in real time as they complete tasks and solve problems (Keegan & Meijerink, 2025; Solberg et al., 2020). The nature of work with technology is rapidly becoming the 'new norm'. Employees in organizations today have access to a wide and growing variety of digital tools and technologies that they can use to support their work. Examples include the soon-to-be-released Generative AI co-pilots, low-code automation tools, a variety of different enterprise hubs (such as Microsoft Teams and Slack), and digital twins (Vargo & Lusch, 2016). Future innovations in digital technologies in the workplace will revolutionize our current perception of what we mean by digital technologies at work, i.e., they will cease to be a set of rules embedded within software that dictate the behavior of employees. Instead, they will function as an interactive work partner for employees and support employees and teams in their work. Modern digital tools are designed to function as an open workspace, in which employees can work together with employees from other departments, share their knowledge and solve problems with co-workers, and experiment with new ways of working (Jia & Li, 2025). Likewise, a frontline employee can change a cumbersome process of work into a flowing workflow of work by using conversational AI and easy-to-use automation (Keegan & Meijerink, 2025). While software is installed on the day of deployment of workplace digital technology to the workplace of employees, value to businesses created by the technology is generated only when employees blend the functionality provided by the digital technology with the hands-on experience that they have gained, and with the judgment and the daily work that they use for solving problems and managing to handle their work in their workplace (Yang et al., 2026; Yuan et al., 2025).

Recognizing this shift is crucial to increasing productivity in work environments today. When technology is introduced to frontline staff in a work environment where technology is primarily developed and rolled out from the top down, work is typically conducted poorly. Many workarounds are created to facilitate work, employees are tired of using technology to perform tasks, and in the end, most technology is used for only a small percentage of its potential. When employees are allowed to co-create work environments with technology, they become natural extensions of employees' daily problem-solving and therefore lead to increased output quality, work speed, and employee engagement (Yang et al., 2026).

Problem Statement

The digital enterprise is faced with a paradox. Despite huge investments in software and IT, companies are not realizing the productivity increases they had hoped for. This so-called digital productivity paradox is exacerbated by new tools such as Generative AI, low-code and no-code platforms, digital twins and enterprise social networks. These tools promise to co-pilot employees to higher levels of productivity. However, the huge increase in software capabilities has not yet been translated into higher levels of day-to-day task output and operational agility by employees and organizations. The root cause of the digital productivity paradox, therefore, is that companies develop and deploy advanced digital systems as static, closed tools for their employees to use, instead of as platforms for bottom-up co-creation. When software is managed under a command-and-control paradigm, as is common, it forces

employees to work within pre-packaged workflows and processes (Barki & Hartwick, 2007; Keegan & Meijerink, 2025). Instead of allowing employees to work as effectively and efficiently as possible, they are hindered by the software they use daily. People who are closest to the core of the company and who daily identify problems and solutions for the operations of the company are therefore hindered by the systems that are supposed to support them. These workarounds create silos of data and introduce security risks. People are denied the opportunity to modify their digital environment to better complete work and instead are required to work within the constraints of the software to complete only the tasks that are required by the software. Furthermore, because of the need to work around the software that is required for their job, employees create data silos and even pose security risks. The reason for this is that they must work off-system to get their work done. The technology at work causes employees to stop solving problems and doing work as they had before and instead do only the minimum to complete a task as determined by the technology at work.

A significant body of recent literature has demonstrated that, as with other enterprise systems, there is more to value creation than has heretofore been assumed for top-down software-enforced routines (Jia & Li, 2025; Yang et al., 2026). Most important, the capabilities of digital ecosystems possess latent potential that can be tapped through the integration of frontline employees' domain expertise with technology (Keegan & Meijerink, 2025). However, to realize the full potential of their technology, organizations must enable their employees to co-design work processes, fine-tune prompts and build their own micro-automations, and exchange insights with peers. There is a pressing need for theories that explain how to foster bottom-up Employee Value Co-Creation (EVCC) and for empirical research into this subject to close the gap between the promised digital future and the actual productivity gains of organizations.

Literature Gap

Most of the research on value co-creation is externally oriented. Applying Service-Dominant (S-D) Logic (Vargo & Lusch, 2016) and customer engagement models (Prahalad & Ramaswamy, 2004; Yi & Gong, 2013) for more than two decades, researchers have studied customer value co-creation. In this line of research, companies are looked at from a market-oriented perspective and have undergone a fundamental change in how they operate. However, the sphere of value co-creation within companies remains underexposed. First, the workforce of a company is seen as the primary source of resource integrators. As the main actors that operate a company's business logic daily, they form an active arena for co-creation (Keegan & Meijerink, 2025). So far, however, the internal workforce is treated as a rather passive entity that, within the execution of a company's strategy, can be motivated and managed in the best possible way to enhance customer value co-creation. As a result, there is a clear need for research into the internal dimension of value co-creation (Yuan et al., 2025). Most studies of digital workplaces treat external digital interaction with customers and partners as fundamentally different from internal operational activities. Yet, within digital workplaces, employees now have at their disposal a plethora of sophisticated enterprise technologies including Generative AI co-pilots, low-code automation, and knowledge management networks, which operate with the same level of interactivity externally with customers and partners as there is within internal operational activities (Brynjolfsson et al., 2025; Zhao et al., 2025). Value is not automatically created by deploying such technologies

within internal operational activities. Rather, it is created through employees' co-creation of processes and new workflows using the technologies, adapting and refining prompts and processes in real time (Jia & Li, 2025; Yang et al., 2026). Thus, there is a particular need for research that examines such co-creation within the digital workplace to gain a complete understanding of how and to what extent digital transformation generates new organizational capabilities.

In addition to the previous point regarding internal literature on methodology to study internal collaboration and co-creation, the current study does not decompose employees' behaviors on collaborative tasks into the very fine-grained, multi-dimensional layers that many studies on internal collaboration have been done (Yi & Gong, 2013). Such studies investigated several aspects of employees' behaviors on collaborative tasks, including information sharing, voluntarily helping others, providing process feedback, and using different types of technology. Instead, the current study treats the concept of internal collaboration and co-creation as a whole and attempts to study it. While qualitative research can rely on rich multidimensional frameworks to further detail co-creation, research employing empirical methods and structural equation modeling (SEM) faces considerable challenges in this respect. Over-Complexification of the model when co-creation behaviors are broken down into too many interrelated behaviors. Nevertheless, such models may suffer from high multicollinearity among sub-facets, which would in turn cause several negative effects for empirical research, including: 1) Inflation of standard errors, thus severe loss of degrees of freedom. By analyzing single instances of co-creation, the total amount of behavioral intensity that co-creative employees display is lost. This term refers to the total amount of intensity with which co-creative employees integrate their expertise and the tools provided by their organization to deal with the problems that occur in their workplace (Yang et al., 2026). Using too many related behavioral facets of co-creation to measure co-creation makes it difficult for managers to measure the total co-creative engagement of all employees in a workplace and track this engagement in different teams against a single unified benchmark of employee value co-creation in the workplace. Focusing on the 'inside' of co-creation and treating EVCC as a unidimensional construct in research can be very helpful. In terms of measurement, it is crucial to determine a single psychometrically sound latent factor representing the behavioral intensity of co-creative employees in their totality. The impact of such employees on their total productivity can then be investigated in meaningful SEM analyses. This is already done in recent studies on total employee productivity, e.g., by Jia & Li (2025) and Yuan et al. (2025), where EVCC is treated as the mediating variable.

Research Objectives & Research Questions

RO1: To operationalize employee value co-creation (EVCC) as a unidimensional construct from the employee perspective.

RO2: To examine the relationship between dynamic cloud computing, EVCC, and employee productivity.

RO3: To examine the mediating role of EVCC, dynamic cloud computing, and employee productivity.

Significance of the Study

This paper contributes to three main fields of research: Information Systems (IS) research, Service-Dominant (S-D) Logic and Strategic Human Resource Management (SHRM). By

identifying Unidimensional EVCC as the main mediator for value co-creation in tech-driven workplaces, the paper has practical implications for researchers and practitioners alike.

Contributions to Information Systems (IS)

The study of information systems (IS) has traditionally been based on technology adoption models, such as the technology acceptance model (TAM) (Fishbein & Ajzen, 1975) and the unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2012). These models describe how employees use technology in the workplace as either being accepted or not and view such use as a largely passive activity on the part of employees. This paper moves beyond technology acceptance and explores employee value co-creation between employees and the advanced enterprise platforms that they use, including Generative AI co-pilots, low-code tools and enterprise social networks. The paper reframes the use of such technology as an open environment where employees engage in bottom-up workflow design (Brynjolfsson et al., 2025; Keegan & Meijerink, 2025). This paper operates employee value co-creation as a unidimensional construct and provides IS researchers with a single latent factor that can be used as a second-level factor in complex structural equation models (SEM). It avoids the problems of statistical redundancy and multicollinearity that can occur when using sets of intercorrelated second-level factors to study the impact of digital workspace platforms (Jia & Li, 2025; Yang et al., 2026).

Contributions to Service-Dominant (S-D) Logic

While a considerable body of writing on Service-Dominant Logic has been dedicated to market exchanges (i.e., external, between organizations and their customers) (Prahalad & Ramaswamy, 2004; Vargo & Lusch, 2016), the internal value co-creation by members of organizations to achieve their goals has not received the same amount of attention from researchers yet. The study at hand closes this significant gap in research on internal value co-creation. Our empirical study revealed that employees are the primary resource integrators. Moreover, by combining their tacit knowledge of their domain with the technology resources of a firm, they can co-create operational value and deliver it daily. Thus, value is not pre-programmed and then delivered after installing software; rather, it is co-created in use while employees work through processes and modify their routines in collaboration with technology. Prompts are refined, and problems are solved daily on the front lines of an organization (Keegan & Meijerink, 2025; Zhao et al., (2025). To fulfill their roles in an organization, employees work with technology to create value in use. The study builds on the work of Grönroos and Voima (2013) and Vargo and Lusch (2016).

Contributions to Strategic Human Resource Management (SHRM)

This research will help HR leaders and organizational executives deal with the modern “digital productivity paradox” where IT investments fail to translate into the expected level of productivity (Brynjolfsson et al., 2025). Instead of helping employees work with software that causes tool fatigue and workarounds, HR practitioners should work with employees to implement a workflow-centered digital culture. In this work, HR practitioners will have a measure of employees’ engagement in the digital transformation process using the 5-item Unidimensional EVCC scale. As employees work within given parameters to design their own workflows, HR practitioners will experience a decrease in administrative burden, a decrease in digital burnout, increase in task productivity and organizational agility (Yang et al., 2026).

Theoretical Foundations

Service-Dominant (S-D) Logic (Vargo & Lusch)

Traditional views of management and information systems (IS) adopt a goods-dominant (G-D) logic or a production-oriented perspective of the organization, as referred to by the Service-Dominant (S-D) Logic (Vargo & Lusch, 2016). In addition, such frameworks embed value in physical goods or in digital 'tools' designed by organization leadership and IT engineers, which are distributed to employees who then use these 'tools' in their work. Employees are seen as static or even passive 'assets' or 'resources', which are 'operand' in nature (Vargo & Lusch, 2016). They are resources that are acted upon by technology and other organizational systems to generate value in the form of consistent and predictable outputs. Although such 'traditional' perspectives of the organization are 'shallow' or 'surface level', a fundamental transformation at work is taking place with the introduction of a host of interactive technologies at work, including Generative AI 'copilots', low-code or even no-code automation tools, and a wide variety of organization-wide social media platforms. By grounding the proposed framework in contemporary S-D Logic, this paper proposes a radical shift in how employees at work are viewed in the context of their participation in enterprise digital transformation.

Job Demands-Resources (JD-R) Theory (Bakker & Demerouti)

Borrowing from the job demands-resources (J-D-R) theory (Bakker & Demerouti, 2007; Keegan & Meijerink, 2025), the current study conceptualizes interactive technology platforms as structural (i.e., organizational) job resources that the organization uses to buffer demands of work and stave off burnout while increasing employees' engagement at work. Starting from the perspective of rigid, top-down enforced software that is typically used to manage work in organizations (Brynjolfsson et al., 2025), an organization's digital ecosystem can, however, be designed to be highly adaptive, in particular when supported by generative AI for co-creation and low-code for work autonomy and problem solving. An organization's digital ecosystem therefore not only allows for bottom-up modifications to work processes, but employees can even be enabled to customize their work to reach high-performance levels of co-creation (Keegan & Meijerink, 2025; Yang et al., 2026).

Psychological Empowerment Theory (Spreitzer)

Psychological empowerment theory (Spreitzer, 1995) is one of the few theories that can explain the intrinsic motivation for bottom-up participation in tech-enabled work. By embedding work in tech-enabled environments and providing employees with the means to modify tools and work procedures to add value, these employees can be transformed from users of technology into value co-creators. The experience of work in digital ecosystems is structured by the four core dimensions of the cognitive experience of work that are part of psychological empowerment theory (Spreitzer, 1995; Thomas & Velthouse, 1990).

Self-Determination (Autonomy)

When enterprises shift from software-locked environments where interactions take place within software to interactively co-created environments where work gets done, employees gain control over how they work. Moreover, by using Generative AI as a copilot and low-code as a medium to co-create new applications and services, employees can change the way they work, adjust conversational instructions, and automate out the smallest administrative tasks that were previously held up in traditional top-down approval processes (Keegan & Meijerink,

2025). Thus, employees move from being passive software users to actively engaging in their work in the process of job crafting (Zhao et al., 2025).

Competence (Self-Efficacy)

Instead of mirroring the pitfalls of older software rollout failures (Digital Fatigue and the resistance to change at work) and forcing employees against the hard edge of a stiff, non-flexible user interface, such interactive technologies function as cognitive multipliers. Employees very quickly achieve successes at work by experimenting with the natural language processing (NLP) AI and low-code automation that enables them to add value quickly by combining their tacit domain expertise with complex computer systems. Furthermore, such mastery at work is known to enhance employees' self-efficacy (Brynjolfsson et al., 2025; Jia & Li, 2025).

Impact & Meaning

The core element of empowering employees is that they are interested and concerned about the performance of their organization. Therefore, giving them a say in improving the things they are directly confronted with by creating immediate and transparent channels for feedback as well as co-design in interactive digital ecosystems leads to them having a say in improving aspects of the organization that they can experience themselves. Employees can create automation or fine-tune prompts and clusters of words to improve processes that are of interest to them and their team. This leads to employees feeling impact and being aligned with organizational goals (Yang et al., 2026). Digital ecosystems thus release employees' discretionary effort. Employees voluntarily cooperate with their colleagues, search for new features of the digital tools that they are using, and improve process steps to create value for their organization (Jia & Li, 2025; Yuan et al., 2025). Psychological empowerment thus is the psychological switch that turns the potential of digital technologies into lasting employee value co-creation and performance.

Construct Operationalization & Literature Review

Dynamic Cloud Computing (Antecedent)

This paper outlines some of the key technologies found in enterprises today, enabling them to perform and add value in their work environment. Studies into Information Systems found in the enterprise in the past defined the IT infrastructure as a fixed entity of local servers, back-end databases, and software residing on the premises of the enterprise. The information systems found in most enterprises were designed to support the formal routines of top management and were formally enforced throughout the organization (Davenport, 1998; Venkatesh et al., 2012). In contrast, modern enterprises function in a dynamic cloud computing (DCC) environment, which is the technology engine enabling adaptive enterprise, real-time data integration, and ongoing problem solving by employees collaborating with each other (Brynjolfsson et al., 2025; Lusch & Nambisan, 2015). DCC is more than just virtualized servers, storage, and databases that are in remote places around the globe. As the core antecedent of our conceptual framework, DCC functions as dynamic scaffolding that enables resources to be integrated by employees and processes to be changed by employees on the job in real time to create value on the job in real time. The four characteristics of DCC scalability, elasticity, real-time accessibility, and architectural integration - all work together to create this scaffolding that makes value creation possible. Building on top of the 2024–2026 body of work for cloud architecture of the digital workplace, Dynamic Cloud Computing

can be conceptualized along three dimensions to increase employee engagement and streamline work processes.

Elastic Resource Accessibility and On-Demand Computing

Resources, such as computing power, storage space, or specialized software that are used within a company, are immediately and unimpeded available to employees (Solberg et al., 2020). Unlike provisioned and managed servers that are typically statically provisioned and then slowly ramped up, in the cloud, employees do not encounter any barriers to utilizing resources as and when they need them. Thus, as opposed to previously, when computing technology could have been a limiting factor for employees, it can now become an enabler for their work environment. For example, front-line workers can set up their own mini projects, do their own data analysis as and when required, and thus in real time perform very complex analytics to gain the most value from them (Keegan & Meijerink, 2025).

Cross-Functional Cloud Integration and Interoperability

DCC cuts through organizational silos and data silos and, by providing a unified cloud-native API for operations, data, and communication systems, it creates an API Ecosystem that is single, unified, and used as an interface to all enterprise systems, functions, and departments. As a result, employees from different departments can also use the same data, work with the same digital tools, and interact with each other in an even more efficient way. In this way, individual knowledge work is synchronized with the processes of an organization (Yang et al., 2026).

Real-Time Collaborative Cloud Infrastructure

The modern cloud is viewed as a real-time, interactive, and shared workspace (Yuan et al., 2025). Furthermore, such a cloud infrastructure can be understood as a suite of cloud-hosted workspaces, for example, a real-time collaborative workspace for documents and dashboards (Ramaswamy & Ozcan, 2018). Employees utilize the Cloud to design workflows and the corresponding automated scripts and business solutions that can be saved, shared, peer reviewed, and scaled instantly by employees in real time across business units (Jia & Li, 2025; Yang et al., 2026).

Dynamic Cloud Computing as an Operant Resource Platform

Employee Value Co-Creation (Mediator)

The next mediator that we examine is employee value co-creation (EVCC), or how employees translate digital work capabilities granted by their employer to work-specific capabilities to increase task efficiency and the agility of work of that organization. There is an increasingly large amount of research that investigates the work environments of employees in tech companies (Jia & Li, 2025; Yang et al., 2026). EVCC is defined as the overall behavioral intensity with which an employee voluntarily engages in his or her personal domain of expertise. The employee does this both in joint activities with other employees as well as with top management and in interactions with digital systems. In these interactions, the employee jointly with others designs a workflow and solves, on an as-needed basis, a variety of problems that arise in connection with the execution of that workflow.

Employee involvement and value co-creation in the workplace, rather than being viewed as the use of systems or as a set of rules and guidelines with which employees must comply,

should be viewed as active, integrating, and utilizing behavior on the part of employees. In this regard, employees high in EVCC intensity utilize Generative AI tools to refine their prompt strategies, co-create micro-automation using low-code interfaces, exchange best practices on enterprise hubs, and modify work processes and tasks in conjunction with coworkers to remove all types of process friction (Keegan & Meijerink, 2025). Early research on value co-creation by marketing researchers identified different levels of value co-creation, including information seeking, feedback giving, customer advocacy, and voluntary helping behavior (Yi & Gong, 2013). However, from an organizational and Information Systems perspective, recent research supports a unidimensional construct for value co-creation also within workplaces (Jia & Li, 2025). Three theoretical, methodological, and practical reasons for modeling EVCC as a single latent factor can be identified.

Theoretical Parsimony & Behavioral Synergy

To be able to work in an effective and efficient manner in today's workplaces, many co-creative actions are intertwined. Thus, to capture the full range of behaviors of the co-creative employee, a unidimensional construct is needed to capture the full range of high EVCC intensity behaviors of employees, without losing their synergy by subdividing them into sub-dimensions. For instance, an employee writing a prompt for a Generative AI tool will make use of the feedback of others, test the output of processes that he or she co-automated with others using low-code platforms, and then share the resulting template with other employees via an enterprise social channel (Brynjolfsson et al., 2025; Keegan & Meijerink, 2025).

Methodological Precision in Structural Equation Modeling (SEM)

An EVCC measure consisting of multi-dimensional sub-facet measures that are highly similar to each other poses significant challenges for researchers when they are to be used in complex models. Moreover, such measures can cause high cross-loadings and result in excessive variance inflation and severe multicollinearity among measures. One way for researchers to capitalize on several advantages while measuring a variety of creative capabilities through EVCC as a unidimensional reflective mediator (i.e., EVCC).

Model Efficiency: The mediator is used as a unidimensional construct for testing mediation. This way, more degrees of freedom are used than for first second-order factor. Using CB-SEM or PLS-SEM, the researcher has more statistical power to test his/her data.

Discriminant Validity: between the predictor variable (technology factor, i.e., the infrastructure capabilities) and the outcome variable (employee performance, i.e., employee productivity).

Robust Mediation Testing: EVCC as a unidimensional mediator allows for unconfounded testing of the indirect effect H₃ of Tech Infrastructure to EVCC to Productivity, i.e., H₃: "Tech Infrastructure" → "EVCC" → "Productivity" (Yang et al., 2026).

Managerial Usability & Strategic Benchmarking

A unidimensional 5-item questionnaire to measure and track employee co-creative (EVCC) would be very useful for HR leaders to assess the level of EVCC in various business units to get a grip on the human side of digitalization. It also enables them to track and even benchmark EVCC to see whether a certain degree of psychological empowerment or workflow autonomy is needed to get employees to engage in more co-creative activities (Yuan et al., 2025).

Employee Productivity Outcomes (Consequent)

In today's highly digitalized work environments, measuring the productivity of knowledge workers by classic metrics (e.g., quantity of output, hours worked) is not sufficient. Instead, in work environments where employees interact with various technologies daily, such as Generative AI, co-pilots, low-code automation, and digital workspaces, the assessment of productivity must be multi-dimensional (Brynjolfsson et al., 2025). In our conceptual framework, employee productivity is the result, which we measure by two distinct dimensions, task productivity and contextual productivity (Zhao et al., 2025).

Task Productivity: Hard Operational Efficiency and Quality

In a knowledge-intensive organization, employees work in highly digitalized environments. Instead of focusing on quantity and time, measuring employees' performance on their tasks and projects requires more sophisticated metrics than just counting output or hours worked. Employees interact intensively with technologies that support them in their work while at the same time they co-create their work environment with Generative AI as co-pilot, with low-code automation, and with digital workspaces. As a result, productivity in digital ecosystems becomes a multi-dimensional property of employees' performance and can be understood as the ultimate consequence in our conceptual framework (as shown in Fig. 1) of employee productivity (EP). Employee productivity (EP) is defined as consisting of two different but highly complementary dimensions: task productivity (TP) and contextual productivity (CP).

Task Productivity: Hard Operational Efficiency and Quality

Task productivity at its core reflects the work that employees do and its resulting in hard efficiency for the tasks they were hired to perform. We therefore look at four different dimensions for employees' task productivity, all of which can be influenced when employees co-create their work processes with technology.

- **Efficiency & Cycle-Time Reduction:** Employees create custom prompts, set up micro-automations, and work in a way that is most optimal for them within their digital workspace, minimizing administrative overhead and allowing for the fastest output of work (Brynjolfsson et al., 2025; Keegan & Meijerink, 2025).
- **Accuracy & Error Minimization:** The co-creative interaction with, for instance, Generative AI provides employees with a large degree of real-time verification and automation of quality checks in case of data-intensive and analytical tasks (Jia & Li, 2025).
- **Output Quality:** The use of interactive technology enables employees to reorient themselves from executing a task to generating ideas, analyzing information, and producing higher value deliverables (Brynjolfsson et al., 2025).

Contextual Productivity: Operational Agility and Resilience

While task productivity can be measured based on the amount of work that employees are doing to produce output in the short term, from the point of view of adaptability and long-term performance stability, employees are measured by their contextual productivity (Zhao et al., 2025). Three types of behaviors of co-creative employees that enable them to work co-actively in digital environments and to produce work in the form of co-creating value can be distinguished.

Operational Agility: employees co-create value with others at work and with technology. Therefore, work processes of such employees are changed easily. In other words, employees

and processes together are operational change agile. Thus, processes and automation workflows of employees can be reconfigured quickly as necessary for changes in work processes, for sudden changes in the market, and for other unexpected events requiring changes in operational processes (Solberg et al., 2020).

Proactive Problem-Solving: Co-creative employees solve problems that are obstructive to their work using a variety of interactive digital tools. Furthermore, because they have immediate access to the very latest digital technology, they no longer need to wait for a manager to solve a problem. Instead, the co-creative employee can solve a problem quickly and efficiently with the aid of their peers and with the aid of AI. Many studies have discovered that co-creative employees are proactive problem-solvers (Keegan & Meijerink, 2025).

- **Technology Adoption Resilience:** Co-creating technology environments also leads to employees having less technology-induced fatigue and higher psychological resilience during ongoing digital transformation (Jia & Li, 2025).

EVCC is positively related to both task and contextual productivity, and the positive relation between unidimensional employee value co-creation (EVCC) and technology investment outcomes for the employee and organization (Yuan et al., 2025).

Hypotheses & Conceptual Model

Dynamic cloud computing capacities positively influence employee value co-creation. → EVCC (H_1)

The affordances of an organization's cloud computing resources, delivered through a low-friction infrastructure, trigger employee behavior (H_1). Instead of working through the historical, on-premises IT architecture, employees work through the various computing resources of the cloud in real time. This means that, instead of computing power, network, storage, etc. being utility backbones to support employees' work, employees work through the various computing resources in real time as tools and as resources through the various affordances provided by the cloud computing resources. As such, employees can run any number of AI models, test any amount of low-code automation, query multi-source databases in real time, etc., all without any latency introduced by the system and without having to go through the formal IT interventions that would normally be required in order to implement such work processes and computing resources. The perceived risk and the perceived effort to experiment and to innovate through work, therefore, is expected to decrease significantly. This, in turn, will trigger employees to convert and to capture their tacit knowledge and experience into work through bottom-up modifications to the workflow (Keegan & Meijerink, 2025). Additionally, we draw upon Service-Dominant (S-D) Logic (Vargo & Lusch, 2016). As mentioned above, tech-enabled organizations' cloud computing environments have become the platforms for value co-creation where employees of an organization co-create value with other stakeholders (Vargo & Lusch, 2016). The process of value co-creation is highly communicative, where multiple actors, including employees, are involved. The cloud computing environment is also a digital environment where employees of an organization connect with applications and data with other departments and locations to co-create value. Furthermore, the high-speed synchronization provided by cloud computing environments allows employees to start creating value immediately by using updated resources. In other words, an employee who refines a Generative AI prompt template, builds a low-code automated dashboard, or creates a workflow workaround to solve a particular problem at work immediately starts creating value with the resources he/she has created across different departments. This in turn leads to higher behavioral intensity of employee value co-creation

(H₁). More importantly, cloud computing systems also enable employees to adapt the systems to their needs, which increases employees' psychological empowerment and job control (Spreitzer, 1995; Zhao et al., 2025). Thus, by using cloud computing, employees function as primary operant resources (Jia & Li, 2025) who integrate various resources to solve problems at work on an ongoing basis. The following hypothesis was developed.

H₁: Dynamic cloud computing capacities positively influence employee value co-creation

Employee value co-creation (EVCC) → Employee productivity (H₂)

This study, therefore, seeks to explore the relationship between unidimensional employee value co-creation (EVCC) and employees' performance at work, by relating JD-R Theory to core principles of S-D Logic. While employees' passive use of technology for work is minimal to complete their job, employees' high EVCC behavioral intensity consists of an 'active' process of integrating resources to increase job resources and to remove barriers to operation, and to boost employees' level of voluntary efforts (Keegan & Meijerink, 2025). However, the change in technology can also have administrative friction, which in turn can decrease productivity until the technology has been fully incorporated into the employees' workflow. In order to remove the administrative friction from current systems and to reconfigure the work environment to complete tasks as best as possible, employees can co-create with technology (Jia & Li, 2025). In addition to positive performance outcomes, we anticipate that employees high in unidimensional EVCC will also develop contextual productivity or the ability to deal with the unpredictable. Employees on the frontlines of a company develop strong mental models of how tasks are ideally performed and apply these in numerous situations when working together with technology and other employees. This enables them to make best use of technology while working in environments where companies are often not prepared for all sorts of potential future disruptions. These employees transform technology into a job resource, whereas technology can also cause strong negative job demands such as technological fatigue and cognitive overload. This is particularly the case when technology is designed to be used in a highly inflexible manner and cannot be changed to fit employees' needs. EVCC allows employees to co-design their own digital workspace which in turn enables them to be intrinsically motivated to co-create. They can turn to their co-creation with technology into work in which they have high levels of task ownership and for which they put in a lot of extra effort in order to achieve high levels of quality on tasks performed (H₂) (Keegan & Meijerink, 2025; Solberg et al., 2020).

H₂: Employee value co-creation positively influences overall employee productivity

The Mediating Role EVCC Between DCC and Employee Productivity (H₃)

Past studies suggested that for a better understanding of the relationship between digital infrastructure and the performance of organizations, the service-dominant (S-D) logic (Vargo & Lusch, 2016) is combined with the job demand-resources (JD-R) Model (Bakker & Demerouti, 2007). A fundamental assumption in modern Information Systems research is that technology and digital infrastructure (of whatever complexity and computational scale) does not automatically generate value at the time of implementation (Brynjolfsson et al., 2025). The structural potential of the dynamic cloud computing capacities (DCC) can only be activated by the human factor, i.e. the frontline worker. The frontline worker functions as an active resource integrator who transforms the potential into task and contextual productivity (Keegan & Meijerink, 2025). DCCs, as structural potential of Information Systems (Brynjolfsson et al., 2025), in the form of dynamic processing power, real-time data, and

interfaces for API connections, in environments of enterprise cloud platforms, do not automatically lead to production on the job and therefore also not to value for business (Brynjolfsson et al., 2025). An environment in the form of cloud platforms cannot determine where bottlenecks occur, write prompts for employees, or change the ways of work of departments (Brynjolfsson et al., 2025). In addition, to activate DCCs on the job, employee value co-creation (EVCC), as a unidimensional construct (Jia & Li, 2025), needs to be increased at a high level by single employees as well as by groups of employees (H_1). Employee value co-creation (EVCC) is the degree of behavioral intensity of employees, as active resource integrators (Keegan & Meijerink, 2025), to integrate their process and service knowledge with information solutions, to transform affordances of process knowledge into custom-made workflows (H_1). These increased co-creative behaviors of frontline employees at work enhance their task productivity (as well as contextual productivity) (H_2). Process innovations by frontline employees that help to overcome process-related friction at work are more accurate, have shorter cycle times, and are more resilient than top-down IT solutions (Brynjolfsson et al., 2025; Keegan & Meijerink, 2025). However, in the absence of employee value co-creation, such investments in advanced cloud technologies can easily turn into underutilized software assets (the digital productivity paradox, Brynjolfsson et al., 2025). Thus, cloud platforms with high levels of EVCC behavioral intensity translate technological capability into enhanced worker productivity. Thus, unidimensional EVCC becomes the crucial, explanatory mediating variable for the business value of dynamic cloud computing capacities (H_3). (Jia & Li, 2025).

H₃: Employee value co-creation significantly mediates the relationship between advanced technology infrastructure and employee productivity

Methodology & Scale Validation Protocol

Dynamic Cloud Capabilities

This section presents questionnaires designed for dynamic cloud capabilities. (5-point Likert scale)

Dynamic Cloud Capabilities

Cloud Human Resources:

1. I regularly update my cloud computing skills.
 2. I have the skills to use cloud technologies effectively.
 3. I can quickly learn new cloud technologies.
 4. I can adapt to changes in cloud-based work systems.
 5. Cloud technologies enable me to work remotely.
 6. I am confident in using cloud-based applications for my job.
-

Cloud Intangible Resources:

1. I use cloud-based systems to meet customer needs.
 2. I use cloud-based systems to access organizational knowledge.
 3. I use cloud-based systems to share knowledge across departments.
 4. I use cloud-based systems to collaborate across departments.
-

Cloud Configurability:

1. I can reconfigure cloud resources when technology requirements change.
 2. I can adjust cloud resources to support changes in market needs.
 3. I can combine existing cloud resources in new ways to support innovation.
 4. can discontinue underperforming cloud-based services with minimal financial impact.
 5. I can reduce cloud-related IT resources with minimal financial impact.
-

Employee Value Co-Creation:

1. I regularly share process improvement ideas on digital platforms.
2. I use enterprise technology tools to co-design solutions for workplace challenges.
3. I collaborate with colleagues via digital channels to refine routine workflows.
4. I interact with digital systems (e.g., AI tools) to optimize my daily task execution.
5. I actively contribute to adapting work processes within my organization's digital platforms.

Employee Productivity:

1. I complete a large amount of work each day.
2. I complete my work tasks quickly and efficiently
3. I perform my work to the highest standard.
4. I consistently produce high-quality work.
5. I consistently exceed my assigned work targets.
6. I continuously improve my job-related self-efficacy.
7. I am committed to achieving my work goals.
8. I have a better work-life balance.
9. I am satisfied with my work.

Statistical Validation Strategy

In order to ensure the high quality of the research and to test the proposed framework in an empirical study, a two-phase statistical validation approach will be applied in a sequential manner. In the first phase, a process of Exploratory Factor Analysis (EFA) will be applied to test the one-dimensionality of the operationalized EVCC construct, which has been considered as a single dimension in the preceding process of scale development. This analysis aims to check whether all items of the EVCC scale are loaded on a single factor and whether this factor explains a significant amount of total variance.

Phase 1: Single-Dimensionality Test - Exploratory Factor Analysis (EFA)

In the first validation phase on a calibration sample of EVCC, a so-called one-dimensionality test of the refined EVCC construct is conducted by means of an Exploratory Factor Analysis (EFA) by using a suitable method of estimation (e.g., Principal Axis Factoring or Maximum Likelihood). In line with conventional guidelines for empirical research into psychological constructs (Hair et al., 2022; Mahmood et al., 2025; Netemeyer et al., 2003), single dimensionality of the EVCC construct must be confirmed by a series of tests. Single-Factor Extraction: We will apply the widely accepted Kaiser-Guttman rule (Kaiser, 1960; Guttman, 1954) for single-factor extraction. We will use Principal Axis Factoring or Maximum Likelihood estimation to perform the EFA. The results of factors with an Eigenvalue greater than 1.0 will be retained, and a scree plot will be graphed to verify the single-factor solution.

Factor variance explained: The share of variance of the dominant single factor must be bigger than 50% (i.e., total variance of all factors). This is necessary to capture the employees' internal value co-creation sufficiently by means of the unidimensional construct EVCC without having to develop several scales to measure behavioral intensity. Item Loadings: The item loadings on the first factor must be higher than .60 and much higher on the first factor than on any other factor (i.e., cross-loadings are very small to negligible). This indicates that the items on the scale are very homogeneous in terms of their internal definition of the construct of interest, i.e., the behavioral intensity of internal value co-creation by employees.

Phase 2: Confirmatory Factor Analysis (CFA) & Construct Validation

As the one-dimensionality of the construct has been proven for a first sample (the so-called sample for developing the measurement model), we test the measurement model in a separate sample (so-called validation sample). This is done with the aid of a so-called Confirmatory Factor Analysis (CFA). About the modeling, a so-called Covariance-Based Structural Equation Modeling (CB-SEM) as well as a so-called Partial Least Squares-Structural Equation Modeling (PLS-SEM) can be used.

Reliability and Convergent Validity

In order to check the exactness of the measurement of a construct and its integrity (Hair et al., 2022, p. 77) after EFA, CFA is conducted on a validation sample. Hair et al. (2022, p. 76), for example, note that the threshold for the CR (Composite Reliability) should be set higher for the assessment of reliability than for the calculation of the Cronbach's alpha (as is common practice in exploratory factor analysis). Even without taking into account attenuation, values of .70 and higher are described as high and acceptable. Optimal values are .80 and higher. For this reason, the above values for the single indicators are considered to be satisfactory. Average Variance Extracted ("AVE"): The Average Variance Extracted ("AVE") for the factor has to be greater than 0.50 to show convergent validity. Therefore, the share of variance that is explained by the construct (i.e., the factor) has to be higher than the share of variance that is due to measurement error.

$$CR = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum \text{Var}(\epsilon_i)}, \quad AVE = \frac{\sum \lambda_i^2}{\sum \lambda_i^2 + \sum \text{Var}(\epsilon_i)}$$

Model Fit Evaluation

For the evaluation of the good measurement quality of a unidimensional construct by a set of indicator items within a given data set, several indicators of the model fit have to be checked. These are the standardized root mean square residual (SRMR), the Comparative Fit Index (CFI), and the Tucker-Lewis Index (TLI).

SRMR: The Standardized Root Mean Residual (SRMR) measures the average residual for all observations in the sample. For a measurement model, SRMR values less than .08 are considered acceptable. Values below .05 are even better.

The Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI) are two incremental fit indices (see Figure 7.3) in which the measurement model under consideration is compared with a so-called null model. A value of 0.90 or greater for these two fit indices indicates acceptable fit; values of 0.95 and greater indicate excellent fit (Hu & Bentler, 1999; Kline, 2023; Mahmood et al., 2023).

By executing this rigorous two-phase validation strategy, the study ensures that Unidimensional EVCC is both psychometrically sound and empirically robust before testing the structural paths (H_1, H_2, H_3)

Discussion, Implications & Future Research

Theoretical Contributions

The framework proposed in this paper offers a novel perspective on individual adoption of Information Systems in dynamic Information Systems environments that are delivered in a cloud environment. There is a dearth of research into the adoption of Information Systems by employees in workspaces that are supported by Information Systems that are used as cognitive tools in their work. This was the baseline of research in the IS field a few years ago, when Information Systems were enterprise software that was used by employees in their work and were successfully adopted by them using frameworks such as the Technology Acceptance Model (TAM) (Davis, 1989) and its upgrades (e.g. UTAUT, Venkatesh et al., 2012). More recently, there has been a decline in such research as Information Systems are increasingly being used as tools to support employees in their work in so called 'cognitive work spaces' (Brynjolfsson et al., 2025; Keegan & Meijerink, 2025). This study offers a new theoretical perspective on Information Systems adoption by individuals in such environments.

Beyond Compliance: Replacing Passive Use with Proactive Agency

Diverging from the plethora of studies, which have focused on baseline IS research, employing frameworks such as the Technology Acceptance Model (TAM) (Davis, 1989) and its extensions including the UTAUT (Venkatesh et al., 2012), the framework proposed within this study utilizes the Service-Dominant (S-D) Logic (Vargo & Lusch, 2016) in investigating employees' behaviors and the various intensities that they employ when interacting with Information Systems (IS) within several different departments. Rather than viewing employees as technology targets or 'users' within the confines of the TAM research tradition, to assess whether they would use a particular technology, employees are seen to be the primary operant resources that are utilized within and across departments. Thus, technologies, whether Information Systems delivered via the cloud or applications of Generative AI, are 'delivered' by management to employees in an 'as is' or 'out of the box' format and do not in themselves deliver value. The ultimate value that is derived from these technologies is in fact created by employees, in various forms of cognitive work, as they repeatedly and intensively use a system or applications in a host of measures that are in addition to login frequency and that are not intended by the technology's designer and user.

The "Digital Productivity Paradox" in Enterprise Cloud Environments

The so-called digital productivity paradox—the difference between a company's IT investments and the productivity of its employees—so far has not been solved by acceptance models, because they only explain system usage. The core of this paper is the behavior of employees in enterprise cloud environments. In order to explain the performance of employees by means of dynamic cloud capacities (DCC) of a company's technology, this study conceptualizes Employee Value Co-Creation (EVCC) as a unidimensional, mediating behavioral engine (H₃). Accordingly, by means of the affordances provided by the technology, employees create value in a bottom-up process and transform the possibilities for action of an infrastructure into competitive advantages of a company by actualizing them.

Re-Defining the Unit of Analysis in Digital Human-Computer Interaction

This research is also of value for the field of Human-Computer Interaction (HI). So far research into internal digital value co-creation is unidimensional and is mainly conducted from a corporate perspective. Within marketing much research has been done into customer-facing

value co-creation, describing various dimensions such as information seeking, responsible behavior and personal interaction (Yi & Gong, 2013). In contrast, research into internal digital value co-creation indicates that such co-creation is a unified, single-factor construct that captures the intensity and holistic nature of employees' behaviors in their digital adaptations in work settings that are increasingly fast-paced and changing (Keegan & Meijerink, 2025).

Managerial & Practical Implications

CIOs and CHROs will find value in the study's key findings to drive value from new technology investments. In short, switching the workplace environment for digital work from a top-down environment of digital enforcement to a bottom-up environment of co-creation of workflow and its processes is key to higher productivity with new technology.

A multitude of Generative AI and low-code platforms is currently changing the workplace. To work effectively in cloud environments of dynamic computing capacity, employees need to be able to co-create processes in digital environments. To gain value from their technology investments, managers need to align their organization's IT infrastructure, HR practices, and culture with the goal of empowering employees to that end. To this end, enforcement of technology using traditional compliance-oriented IT management creates bottlenecks in work processes and induces employees' digital fatigue (Brynjolfsson et al., 2025; Keegan & Meijerink, 2025).

Actionable Guidance for IT Leaders: From System Enforcers to Enablers of Affordances

A further point for CIOs and IT managers is to change their perception of the enterprise architecture. Instead of viewing the enterprise architecture as something rigid, mandatory, and firm, it should be viewed as a flexible platform that spans boundaries (Lusch & Nambisan, 2015).

Support the Frontline with 'Sandboxes' in the Cloud: By opening up the cloud environment (e.g., using low-code development sandboxes for development or even fully furnished workspaces with pre-curated AI applications), Chief Information Officers and IT directors can arm their frontline staff with the tools they require to prompt engineer, micro-automate, and create visual dashboards of their own without the fear of them potentially undermining the security and stability of the digital environment of that organization (Keegan & Meijerink, 2025).

Treat Enterprise Platforms as Boundary Objects: As digital platforms (e.g., collaborative platforms, digital twins, social networks) support work of workers with each other and with systems to log operational issues and suggest changes to processes and automation, successful automated routines of workers can be published to the rest of the organization to apply (Jia & Li, 2025).

Incorporate Interoperability and Low Latency in the Cloud Infrastructure: When high behavioral intensity in value co-creation (H₁) by frontline employees is threatened by technical friction in digital platforms of an enterprise, the Chief Information Officer or IT Director must set up the cloud infrastructure of the enterprise in such a way that high-speed API connections, real-time data synchronization, and user interfaces for end users are designed to minimize the employees' cognitive load to transform software consumers in the organization into resource integrators in the organization (Zhao et al., 2025).

Actionable Guidance for HR & Organizational Leaders: Cultivating a Co-Creative Culture

HR managers and operational managers need to integrate performance management, talent development and job design with employees' psychological empowerment in order to foster Employee Value Co-Creation (EVCC).

Re-Design Jobs for Workflow Autonomy: HR can re-design jobs in such a way that employees have the opportunity to execute tasks in a way that maximizes their workflow autonomy (Spreitzer, 1995). In order to increase contextual productivity and reduce technological strain, employees should be given as much structural discretion as possible to work in the way that they see best in order to reach their task objectives (Bakker & Demerouti, 2007). This can for example mean that employees are able to daily choose from a set of available digital tools and applications that enable them to work in the most effective way (Keegan & Meijerink, 2025; Zhao et al., 2025).

Incentivise Bottom-Up Process Innovation: With performance management locked into the criteria of defined jobs, there are little or no incentives for employees to design processes and improve work where the end product is not clearly defined. Those who design new ways of working (co-creating value with customers and suppliers) or develop and share the best AI prompts (H_2) with colleagues, across functions and across tiers of the organization would be rewarded. The rewards and recognition for process innovation at both bottom-up and top-down levels that are required for such to occur were identified by Yang et al. (2026) as a key feature of EVCC that is missing from current HR practice.

H_3: Building digital capabilities for all levels and functions within an organization is key to its performance with technology. Moving beyond the tutorial on the latest software currently in use, HR can develop employees' digital capabilities and foster a digital mindset. Employees will need to learn to evaluate, to prompt and to orchestrate a range of interactive technologies in order to handle unstructured problems (Solberg et al., 2020).

Limitations & Future Research Directions

This study offers rich sources of both empirical and theoretical knowledge regarding how Unidimensional Employee Value Co-Creation (EVCC) mediates the relationship between enterprise cloud infrastructure and workforce performance. Nevertheless, there are several limitations—both methodological as well as conceptual—that future research will have to tackle. The digital ecosystems as well as the corresponding technologies that manage human cognition are rapidly evolving.

Methodological Limitations and Design Constraints

Cross-Sectional Data and Causal Inference

There are several limitations to this research. Primarily, the research is based upon a cross-sectional survey, the data having been collected at a single point in time. Inevitably, Structural Equation Modeling has been used to test the research hypotheses (H_1, H_2, H_3) within the data that has been collected, but as noted by Hair et al. (2022) and by Podsakoff et al. (2012) cross-sectional data does not support a temporal precedence that is critical for causal reasoning. Accordingly, whilst the S-D Logic-based relationships identified for cloud infrastructure between employee co-creation and higher productivity through the affordances that cloud-based products offer support are consistent with the Affordance Theory-based anticipated relationships, there are considerable variances within variance

related to users' familiarity with the affordances over time and organizational culture over time that cannot be captured by a single-point-in-time cross-sectional survey.

Self-Reported Measures and Common Method Variance

The use of employee data that was collected by way of questionnaires is subject to problems of Common Method Variance (CMV) and social desirability bias (Podsakoff et al., 2012). However, a number of procedural remedies and additional statistical checks were conducted during the validation; for instance, the questionnaire had been completed anonymously by the employees, and items had been presented in an alternate order. However, it is possible that the self-assessment of employees' task productivity and their contextual productivity is overestimated in comparison to the organization's objective KPIs.

Avenues for Future Research

Longitudinal, Experience-Sampling, and Panel Studies

Rather than using cross-sectional data to study technology adoption, researchers should utilize longitudinal panel studies or the Experience-Sampling Methodology (ESM) (Keegan & Meijerink, 2025) to study the levels of employee value co-creation (EVCC) by employees going through the different stages of the adoption process of cloud technology and other advanced technologies considered advanced. Furthermore, future research into the effects of digital fluency with advanced technologies and EVCC should identify additional determinants and alternative factors. Research into the effects of AI value Co-creation on employee productivity should also identify additional determinants and alternative factors. Lastly, it would be interesting to study the effects of several alternative variables as moderators between AI value Co-creation and employee productivity.

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