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Digital dexterity: employee as consumer approach towards organizational success

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ABSTRACT

The implementation of digital apparatuses is merely the investment of non-living resources while reaping prolific outcomes from digital business initiatives is ensured through talented and ambitious employees. This review study aims to shed the light on an imperative behavioural feature of employees i.e., digital dexterity (DD) that has emerged as the prognostic module of advantageous digital transformation. The review work developed an understanding of DD from the HRD context through digital business literature. The novel concept of DD was further delineated for practical implications by cognitive capabilities such as personal innovativeness, self-efficacy, and technological self-efficacy. Then strategies to develop the DD at the workplace were addressed towards employees, leaders, and business entities' perspectives. The research inferences can support the HRD managers, industry experts, and academic professionals to design a suitable plan of action by considering the employee as a top priority towards digital transfusion. This review would provide a better comprehension of the HRD along with the Management Information System field to emphasize the employee-level innovativeness at the workplace.

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Digital dexterity; digital transformation; efficacy; employee innovativeness

1. Introduction

For two decades, technology has embarked on the voyage of digital transformation in human life. The concepts of the Internet of Things (IoT), Big Data Analytics (BDA), Virtual and Augmented Reality (AR/VR), Cloud Computing, Ubiquitous Computing, Automation, etc. are empowering the smart life in each segment such as business, health, education, environment, and governance. This process of technological integration is either voluntary or enforced varies by circumstances. However, one factor that sustains the vital prominence in digital transformation, is volatility in human behaviour towards technology use. Consumers' behaviour towards modern-day equipment and services can be motivated through certain extrinsic arguments like benefits, convenience, and rules compliance. Although the ability and ambition to make better use of the innovative digital tools are individual's characteristics. Implementation of the digital business model in organizations without understanding this facet of human behaviour might hinder to harvest the fruitful results. This implication of ability and ambition in technology use is known as Digital Dexterity (DD) which was rolled out in 2016 by MIT Centre for

Business Research (Soule et al. 2016). Digital dexterity (DD) can be described as a tech-responsive mindset towards digital value creation. As DD is a non-technical aspect, it deals with the cognitive expressions of end-users i.e., employees and consumers, towards technology-related activities (Gartner 2018). Considering such an analogy, this review work unfolds the components of employees' DD behaviour patterns and assistive policies of organizations and HRD professionals to optimize the digital business outcomes.

In recent times, the employees are also deemed as consumers due to the parallel nature of engagement. Employees alike consumers can give back the higher level of returns and productivity upon proper attention and need fulfilment. Employees can shift companies like consumers more easily due to the lower barrier of switching. Towards the digital transition of the business, the employees need to be treated as consumers approach by addressing their needs, motivation (i.e., intrinsic, and extrinsic), and career prospects. As workplaces are equipped with digital tools and tech-based activities, the employees act as technology consumers for the organizational functions. These technology consumers can support the organizations to achieve the goals of digital optimization (i.e., enhance the current business models to digital operation) and digital transformation (i.e., exploiting the opportunities with new digital business models). To integrate the digital business model initiatives and get the desired results, the process needs to hone in the consideration of employees' personal and professional development towards organizational success (Meyers et al. 2015). The extent of the business's readiness towards transition portrays by employees' willingness to embrace the change and to strive for its implementation (Alnoor et al. 2020). In both scenarios, all organization units from the IT department to Marketing endeavour and plan for the prolific outcomes. However, Gartner (2018) reported about 83% of the surveyed organizations were still struggling to get the benefits of the digital transition. The problem reported was the lack of employee readiness in adopting the technology tools and methods whilst accomplishing the organizational duties. Respectively employees experience the complex situation in performing the tasks in the digital environment. Nevertheless, employees with higher digital dexterity levels are appeared as more productive and efficient in the digital environment because they can troubleshoot, diagnose, and solve the issues by saving the productive time, cost, and energy of organizational entities. Organizations spend fewer resources on highly dexterous employees in terms of training, supporting, and mentoring activities. However, the Gartner survey denoted that only 9% of employees in organizations were higher in digital dexterity. Moreover, the training process was also appeared as unable to quantify productive results due to overreliance and mismatching the needs of employees' development (Spritzer et al. 2017).

The reports on digital transition explained the yields and hurdles of digital optimization and transformation however to encompass and manage the factors towards smooth digital initiatives, such as explaining the DD into implementable elements, are missing in the literature. The elements of digital dexterity, the connection of DD with HR processes, strategies to devise the DD for functional level are largely inattentive. Authors believe that the employees' technological adaptability lacking in digital initiatives coheres with less emphasis on digital dexterity in the human resource development context. With that in mind, this research work is intended to elucidate and develop the digital dexterity elements towards digital optimization in the HRD context. By doing so, digital dexterity would be argued as

a success factor for organizations' digital initiatives. HRD practitioners and industry experts would find this research's inferences supportive towards the formulation of the feasible talent strategies to manage, train, and make better use of employees' capabilities. This exploration of DD would support the HRD implications in a practical and theoretical context.

2. Employees and digital dexterity

Digital dexterity (DD) in an organization explores the employees' ability to perform certain tasks with technology and postulating enough ambition to use this ability in achieving success in business. Simply the DD is based on the know-how of technology use and passion to exploit this knowledge in personal and professional means. For organizations, the adoption and make use of modern technology is contemplated as the lifeline therefore workforce with digital dexterity possesses a significant impact on business development. No matter what type of digital environment is to be implemented for business growth, the results could be achieved only with employee digital dexterity. The description of dexterity explains the goals of HRD and coincides with talent management approaches. Managing talent in a digital environment is usually foretaken as training and development or new skills learning process. However, a survey by LinkedIn and Capgemini on Digital Talent Shortage illustrated that 42% of employees were not completely satisfied with training and development programmes and deemed that skills learning processes were not so likable towards career development (Spritzer et al. 2017). The reason lies in the fact that today's workplace scenario is partially digitized along with talent shortage for precisely skilled employees (or if we say 'dexterous employees'), lack of awareness of up-to-dated business process and employee focused HR strategies while the future workplace will have consisted of digital tools, artificial intelligence, advance communication apparatuses, and life-long learning scenarios (Linné and Frank 2018).

The dexterity level can be explained by a simple example, i.e., consider an individual who needs to book an air ticket for his trip. The resources to perform the task are already in his possession like a laptop, mobile, internet, etc. He undertakes the ability to use the technology and shows passion to book the ticket by himself through his online banking or virtual wallet process. By doing so, he saves time, cost, and energy in seeking assistance from third party procedures. Similarly, in digital business optimization/transformation, an employee interacts with various matters at the workplace from training and learning of new tools or processes to the technical issues from minor to major levels such as company virtual private network glitches, mail server collaboration, function ability on the centralized portal, personal laptops or tabs anomalies, etc. A dexterous employee can self-indulge in new skill learning through his passion to use technology for the professional needs prior to the company's training process. Towards the technical issues facing at the workplace, employees with proper dexterity considerate can effort to solve the problems on their behalf instead of waiting for the IT support staff and delaying in organizational activities. Such employees' percentage in the digital initiative taken organizations were counted to 9% from all departments (Gartner 2018). As dexterity level doesn't require to merely pop-out from the IT department but towards digital initiatives, DD necessitates all

employees to come up with agile and value-added outcomes. In the HRD scenario, enhancing digital talent management, organizations need to portray the concept of digital dexterity from employee perspective such as skills development for personal growth, the usefulness of training and development in future contexts, and learning systems for professional plus personal additivities. Formulating the digital dexterity elements on individuals' perceptual facades can better explain the process of the digital transition.

3. Elements of digital dexterity

To grasp the role of organizational strategies towards employee development and dexterity in digital initiatives, we have gone through the industry reports and academic literature in this regard. We found out that implementing the digital initiatives inside the organizations is quite complex and hard as compared to contrive digital services for customers, however, it is a multifaceted and lengthy process that is feasible with adept leadership and employee involvement. Singh and Hess (2017) proposed the role and characteristics of chief digital officer (CDO) in organizations for digital transformation where the position of CDO has the responsibilities of devising and implementing digital initiatives that are variant from the role of CIO. Comprehending the business research students' behaviour as the future digital workplace managers, the digital innovativeness, entrepreneurial abilities, and efficacy proved to play the key part in digital transformation (Mancha and Shankaranarayanan 2020). Another study explored the digital workplace transformation that mainly implied the role of management, business process, personal motivational aspect in dealing with the behavioural intention of employees towards digital optimization (Meske 2019). In the development of new ways of working, the analysis of three established companies portrayed that employee connectedness, responsive leadership, physical space, IT systems, and social media platforms were key components in successful digital initiatives (Dery, Sebastian, and van der Meulen 2017). However, these studies did not explicitly focus on employees' digital dexterity as portrayed by Gartner's report (Gartner 2018) that ambition and ability in employees are key postures of the digital transition process. Even though, the available industry reports on digital transformation are unable to answer the antecedents and behavioural aspects of digital dexterity. The previous studies that mentioned the term digital dexterity had explained either the importance of organizational success (Gartner 2018; Soule et al. 2016) or causal relationship with other variables (Ahmed et al. 2020a). Although, in the IoT adoption study, the digital dexterity behaviour in road travellers towards intelligent transportation was assessed by Neural Networks (Ahmed et al. 2020) where digital dexterity for the consumer was explained through personal innovativeness of an individual's personality. Similarly, another study (Linné and Frank 2018) presented the concept of digital innovativeness through entrepreneurial orientation & efficacy, technological efficacy, and basic digital competency. The theme of the study was relevant to the digital dexterity nonetheless it was focused on the business students instead of the employees. As DD shapes the e-business transfusion from the employees' point of view while the ingredients or contents of DD mechanisms are largely unidentified. However, innovativeness and efficacy in human personality can conceivably represent digital dexterity. To comprehend the HRD context and in congruence with Human-

Computer Interaction (HCI) literature, authors are opined to frame the digital dexterity on two rudiments i.e., innovativeness and efficacy.

Innovativeness

Personality characteristics enable the human attitude and behaviour towards performing certain tasks. Factors that influence the attitude, are perceived as positive and negative ones and this perception formulates the behavioural intention to accept or reject the process. Innovativeness in individuals has been emerged as a major predictor of behaviour to perform actions. In literature, it is known as Personal Innovativeness (PI) that deals with an innovative and persuaded mind towards non-traditional methods. This characteristic of personality is based on the experience throughout the life span, educational background, facilitating condition, and peers influence. PI shows the readiness and willingness to embrace the new ways of working and interaction with modern tools at the workplace. PI has a positive relationship with attitude and behaviour to perform the actions of buying, using, consuming, and applying the methods, services, and products (Slade et al. 2015). PI was intended to assess the behaviour towards basic information technology (IT) fields however the modern-day digital tools require an in-depth analysis of the human mindset. The definition of personal innovativeness (PI) was proposed towards the employees' use of new technology at the workplace and termed as personal innovativeness towards information technology (Agarwal and Prasad 1998). PI is based on the numerous beliefs such as the employee is enthusiastic about modern technology use, he is fluent towards experimenting the new technology, he identifies more about technology products/service among his peers, and he is quite certain about novel technology scenarios. PI enhances the creativity of employees to interact with digital technologies in the organization (Korzynski, Paniagua, and Rodriguez-Montemayor 2019). Innovativeness level in operational managers is correlated to their performances (Dabic et al. 2019). The workplace-related technological aspects and initiatives are strongly adopted by employees with higher personal innovativeness (Gupta, Bhardwaj, and Singh 2019). PI is used to enhance the value creation in the digital organization (Stauffer 2016). Ambition in digital dexterity is related to the concept of personal innovativeness. An employee with a higher PI level attracts innovative opportunities at the workplace. Employees with innovative beliefs can precisely support to achieve the dexterity level. PI usually acts as the main antecedent of technology acceptance studies however the nature and pace of technological volatility cannot rely solely on PI in the HRD field.

Efficacy

Efficacy refers to the performing activities to produce output with the given capacity by any product, service, or entity. Efficacy can be extended and managed with a broad array of fields. Its application in human personality is termed as Self-Efficacy that deals with individuals' beliefs towards performing a certain task at a satisfactory level. Self-efficacy is reckoned as an important factor in individual performance and development. Employees with high self-efficacy levels are motivated towards professional duties as they are aware of their capabilities to indulge in the organizational functions. This confidence in skills

and capabilities comes with experience and environment. In the case of digital transition in business models, employees with higher self-efficacy respond with positive agility. It has a positive impact on motivation towards change management among employees (Alnoor et al. 2020). Extending the efficacy level from human contextual frameworks, the Technological-Self-Efficacy calls for believing in fruitful completion of novel and complex computer-related tasks. Technology efficacy proved as a vital predictor of attitude and behaviour towards digital transformation in the health sector employees (Rahman et al. 2016). It positively impacts the attitude of employees to compile with technology usefulness requirements. The technology efficacy of employees can be achieved by proper training, employee-centred skills development, and flexible organizational culture. Self-Efficacy and Technology Efficacy both can best describe the Ability characteristic of digital dexterity. This ability to be digital proficient does not describe to merely train the employees towards certain digital processes and tools but it is the skilful level approach where employees integrate their expertise and its benefits towards the organizational goals.

4. Developing the digital dexterity

To develop the DD in organizational setup, components of DD will support the stakeholders to devise the policies for development. As DD is based on ability and ambition factors, we have postulated the personal innovativeness (PI) for the Ambition part and Efficacy (i.e., Self-Efficacy (SE), and Technology Self-Efficacy (TSE)) for the ability feature. [Figure 1](#) portrays the digital dexterity funnel by assimilating the three factors i.e., PI, SE, and TSE. Devising the digital dexterity into components will help to grow the circumstances for developing and evaluating the digital dexterity in HRD. Commitment from the top is a basic step to infuse the dexterity level in employees. Leadership in digital optimization and transformation bears great responsibility, as it is shown that employees are 2.4 times more involved in the transition phase whenever leaders are dexterous (Gartner 2018). Leaders will set the tone by creating an open culture, innovation enhancement activities, customized training, life-long learning, and syncing performance management with a level of digital dexterity through feasible goals. Managers are responsible to assess the new skills development among less tech-inclined employees and ensure the efficiency in their expertise level by daily setting goals and learning process through collaboration and teamwork. The managers with dexterous behaviour in the digital workplace can lead to boost the dexterity among employees. The collaborative and reiterative environment are also important to employee dexterity. The personal digital skills of employees are an overlooked particular of digital transforming organizations. The training of certain digital tools contains limited scope and employees are unable to proceed and advance their skills more than the given course. Improving the personal digital skills that entail understanding the IT systems, troubleshooting of common issues, and getting familiar with user-interface patterns towards performing a function can fortify the dexterity level.

The purpose of an innovative mindset workforce is to embrace the new technology, systems, and processes to gain a competitive advantage, retain the skilled talent, acquire the customer trust and proactively approach business development. To enhance the innovativeness level or ambition, organizations need to develop an innovative

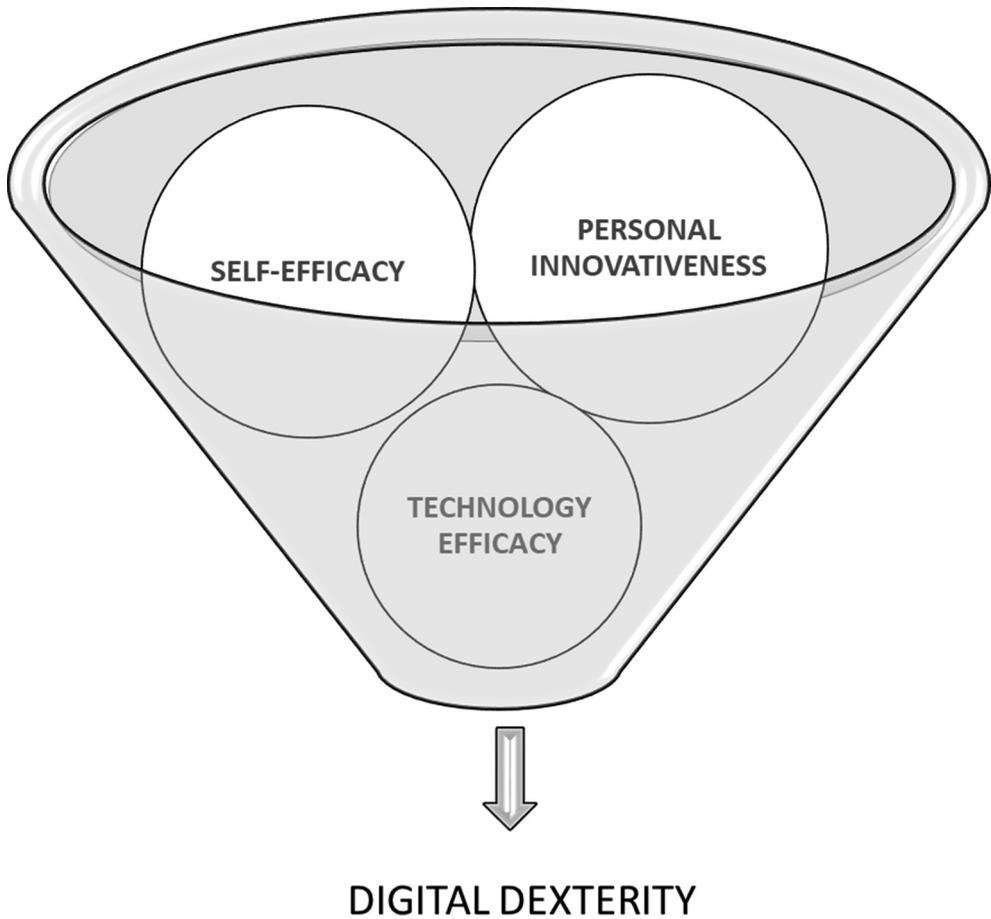


Figure 1. Digital Dexterity Funnel.

mechanism in the shape of an innovation lab where employees are encouraged to share the new ideas in open culture without fear of job arbitration. For example, the self-driving car idea was the outcome of Google employees' innovation lab i.e., GoogleX. The risk-taking culture in an organization should be supported by the managers to provide autonomy to the employees in collaborating, sharing, and interacting with idea generations in problem-solving scenarios. Enhancing the learning agility in an organization by providing disruptive learning, compels the workforce to take every interacting situation as the opportunity to work for better outcomes. Another tool to boost the innovativeness at the individual level, managers need to form the cross-functional teams where team members from different skill sets collaborate for the organizational activities. This skill diversity setup ultimately enhances the organizational agility towards digital transition. Hiring talent with an innovative mindset will support the digital transformation and optimization and will create the innovation management culture to retain the creativity attitude. Adding the reward system with an innovativeness level is quite an efficient way of boosting the dexterity level. Besides these, employees' perception of fairness in the organization with perceived organizational support impact the level of personal

innovativeness (Abbas and Weiwei 2019). In all this scenario to enhance the digital dexterity, the role of managers entails vibrant significance. DD is the responsibility of managers and the innovativeness level develops among employees when managers are higher in the dexterity level.

The other half of DD is devised as efficacy that unifies by the self-efficacy (SE) and technology efficacy (TSE). Taken from Bandura (1997), components of efficacy at the digital workplace are mainly grounded as mastering the experience (i.e., task, activity, computer software, digital process), vicarious exposure by surrounding with the same level of expert people at the workplace, and verbal and emotional support from superiors towards goal accomplishment. To level-up the dexterity with innovativeness, HR managers should initiate the process from the recruitment phase by probing the efficacy level in applicants. Improving the training and development process by hybrid targeting the personal and professional needs of employees towards organization activities. Improve the self-management of employees by setting reasonable goals at the workplace. Digital initiatives should be implemented through employees with high efficacy levels (i.e., self and technological). The learning process should be customized and carefully selected the course of action for each employee. In this procedure, make the groups of employees with the same efficacy level, then formulate the training process towards their performance management. Employees with a better self-efficacy level can boost the other team members' motivation in organization tasks, and individuals with high technology-efficacy possess the power to lift the colleagues by collaborating and supporting in digital workplace activities. Setting the goal that gestures for better performance appraisal also improves the efficacy level.

Viewing the development of digital dexterity from the bird-eye, the result-orientated business entities engage in multiple phases. In the initial step, companies take the first-mover advantage of setting digital dexterity a priority in the business by embracing the advanced consumer technologies, exploit the leaning with hands-on experience, acquaint with employees' behavioural mechanisms and enhance the diversity at each level of planning. In the second stage, organizations build the skills and competencies and identify the gaps and weak areas to use appropriate learning methodology and initiate the innovative mindset culture in the organization. The third phase induces the businesses to collaborate with peer organizations to share, learn, and mutually develop the workplace strategy towards digital dexterity. In the final step, employment of DD for the workforce through advancing job activities with modern technology, adopting the modern tools and techniques in organizational activities to enhance the productivity of human and system processes. An important stance in this step is to address the employees' needs and requirements on a personal and professional basis towards organizational development.

5. Conclusion

This review aimed to comprehend the expression of digital dexterity in digital businesses transition and it explored that technological implementation and its training are different phenomena than digital dexterity. The DD is a combination of hard-soft skills of employees that polish with the time, exposure, and experience and ultimately explores the collaborative behaviour with flexible and iterative aspects at the workplace. It is

honed as the combination of cognitive competencies i.e., personal innovativeness (PI), self-efficacy (SE), and technological self-efficacy (TSE). We define the dexterous employee as ‘an innovative individual with the self-efficacy to engage, without solely relying on the assistance, in the novel and sophisticated digital workplace activities towards the achievement of the organizational goals’. The cognitive capabilities of employees can be upgraded through a supportive environment, long-term needful skills learning, and efficient leadership.

Being pioneer research to devise the digital dexterity from the employees’ perspective, we have presented the two operative factors (i.e., innovativeness and efficacy) to infuse the understanding of the industry and academics’ interest. This delineation of DD can accomplish the practical implications by supporting:

- Organizations towards digital optimization.
- HRD professionals.
- Change management process.
- Industry-Academia collaboration.

Organizations on the way to optimize the digital initiatives can be buoyed by our DD impression through employee enablement in the innovation process along-with enhancing the organizational IQ (i.e., targeted digital proficiencies for the workforce). It can support the businesses to align their objectives through comprehending the employee’s digital dexterity and to effectively manage the digital workplace structure. HRD professionals can successfully implement the employee development policies by classifying the ability and ambition requirements of the digital dexterity through the duo of innovation and efficacy. The framework of digital dexterity points out to synergize the HRD authorities and Information System managers in digital transformation policymaking. HR experts can assess the level of digital optimization through this perspective of DD in multiple business segments and the comparison based on company size, sector, demographics, and geographics could provide an insight of digital workplace integration towards business success. The change process is evident in today’s businesses and to sustain the employee’s skills and capabilities level at the breakeven point towards industry requirements, the DD can be the saviour. As the validity of the trained skills become irrelevant after three years due to the change of technology, regulations, and business competitions, industry experts urge to excel in the rhythm of training and development (Baker 2020). Here considering the components of DD would support the mitigation of change impact by promoting the innovative culture with an ambitious mindset among employees. For instance, the recent effect of the pandemic COVID-19 on doing business has altered the organizational activities and technology-intensive operational strategies are implemented. At this time, focusing on the personal innovativeness and technological efficacy of employees would be fruitful in managing the functional teams, collaboration on projects, enhancing productivity, and handling the work from home issues. This review can support the industry-academia collaboration by keeping the DD components at the focal point during talent acquisition processes. Digital transition in academic activities can also be supported by an explanation of DD elements as shaping the future talent from their study life by improving their innovation and efficacy level would yield far better results.

Consequently, the research is limited to categorize and explain the elements of digital dexterity from digital business literature while it lacks in experiential inferences and statistical validation of DD components. As the notion of DD is quite novel in HR and IS literature, the researchers can enhance the body of knowledge by accumulating more cognitive and contextual factors of dexterous employees towards DD endorsement. Future research with empirical evidence through quantitative analysis could better explain the impact of DD on employee performance and willingness to engage in business development activities. While using qualitative analysis methods, the in-depth interviews of employees, and steering the observational approaches in the digital workplace would provide the broad vision of DD to support the businesses towards implementing the result-oriented digital initiatives.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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