A Study on the Driving Factors of Employees' Adaptive Performance in the Context of Digital Transformation

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Abstract: *With the progress of digitalisation, many enterprises have begun to use technology to improve the efficiency of their workforce. With the change in form of digital labour, this paper studies the concept and structure of adaptive performance and proposes a two-path driving-mechanism model consisting of individual cognition and organisational support. In terms of the construction of concepts, this paper puts forward that the three-dimensional dynamic structure of adaptive performance in the digital age consists of technological integration, relationship reshaping and self-regulation. Individual drivers have formed a chain activation in the form of digital cognitive schemas, and this has been mediated by digital agility and the digital self-efficacy nurtured through cognitive reappraisal to create an internal dynamic cycle. The following three factors will provide the background for the appearance of adaptive behaviour: Organisational support at the organisational level, the immersive effect of the digital environment, and the coupling mechanism between technological adaptability and individual adjustment ability and cross-level penetration of team transactive memory systems. Based on the theories and mechanisms that have been studied so far, this paper will provide all-encompassing analysis of the reasons for high employee performance in the digital era.*

Keywords: *Digital Transformation, Adaptation of Employee Performance, Digital Cognitive Schemas, Digital Agility, Team Transactive Memory Systems.*

Introduction

Organisations and people's work patterns have been changed to some extent by the organised introduction of digital technology. With the development of intelligent platforms and collaborative software, many of the old divisions of labour have disappeared; now, people's work is more diverse, cumulative and irregular. Therefore, in recent years, the ability of people to change behaviour, organise resources and adapt to changes in a dynamic environment has begun to play an important role in helping organisations remain resilient in the face of competition in the digital age. Most of the research on adaptive performance is still based on the assumption that the organisational environment is relatively stable, and the complexity of continuous interaction among people and technology in the digital era has not been fully considered. At the same time, most of the research on driving factors has focused either on the psychological attributes of individuals or on the environmental conditions of organisations and has not systematically studied the interaction mechanism between the two. Therefore, the subject of this paper is the context of digital transformation, and the three levels of theoretical analysis—conceptual reconstruction, individual drivers, and organisational support—will be employed to study the adaptation performance of all generations of employees and provide a new theoretical basis for research on digital human resource management.

1. Connotation and Dimensional Reconstruction of Adaptive Performance in the Context of Digital Transformation

1.1 Transformation of the Work Scenario and Evolution of Adaptive Demands in the Era of Digital Technology Embedding

Digital technology is changing the way organisations operate and the working environment for people in many respects at the bottom. With the introduction of intelligent platforms, collaboration

tools and algorithms, many of the old fixed-position jobs have gone away, and now most jobs are diverse, complex and irregular. With the development of information and decentralisation of decision-making, employees need to be able to obtain data signals promptly and make decisions in the face of uncertainty. Digital reconstruction of work scenarios shows that the role of individuals will change from carrying out fixed procedures to becoming problem-solvers for new and changing problems, so employees need to adapt in new ways that are different from the previous requirements.

As a result of changes in the work environment, many kinds of adaptation demands have arisen. In the past, most changes in working life were external, and the staff adjusted to the new conditions by changing themselves accordingly. With the start of digitalisation, staff need to be able to learn new technologies actively and use virtual collaboration tools effectively in light of changes in the mode of work. Employees need to be able to use the new digital tools, and at the same time, they should also be able to find opportunities, combine resources and change their own behaviour in a technologically advanced way. Therefore, it can be seen that adaptation is no longer an additional quality of employees but has become an essential demand for life and work in digital enterprises[1].

1.2 Extension of the Boundary of the Adaptive Performance Concept in the Digital Age

The traditional idea of adaptive performance mainly refers to people's behaviour and the results they achieve in the face of changes in their work, such as new tasks or unexpected problems, and its theoretical basis is a relatively stable organisation. The Digital Field is organised loosely, is very interconnected and constantly changing, so the boundaries and time-rhythms of traditional adaptive performances have been broken down. What people are feeling now is no longer a single case of change but rather continuous fluctuations caused by the combined effect of technological systems, social networks and algorithms. Therefore, we need to reconsider what we mean by adaptive performance and extend the concept from how well one can respond to changes to one's ability to participate in and operate in the entire digital environment.

In the Information Age, the idea of adaptation has been expanded, and at the same time, its application in cognition and behaviour has also changed. Cognitively, people need to build a model of digital thinking that changes with the times, and be able to learn how to understand and predict changes in work logic due to technology. At the level of behaviour, adaptive performance is no longer limited to responding to instructions from above; now it has also included meta-competence, that is, the ability to proactively create new circumstances for using technology, build good interaction models for virtual teams, and continuously improve one's own knowledge system. An extension of this boundary will make the idea of adaptive performance more inclusive and flexible, and it will also be more in line with how people work in the digital age.

1.3 Analysis of the Multidimensional Structure of Adaptive Performance from the Perspective of Dynamic Interaction

A new theoretical basis for the study of the internal structure of adaptive performance in the era of change has been established. The old division of labour is no longer suitable for dealing with the new attributes that have arisen due to the continuous interaction of people and technology. According to the model of dynamic interaction, adaptive performance is not only an endogenic trait of individuals but is also constantly generated and promoted by all sorts of periodic interactions among various factors, such as digital tools, the organisational environment and collaborative networks. Based on the above, the structure of adaptive performance should be regarded as an open system, and all levels are interconnected and work together to achieve people's adaptation in the digital age[2].

The three types of dynamic interaction in adaptive performance can be divided into the dimension of technological integration, the dimension of relationship restructuring and the dimension of self-regulation. The dimension of technological integration is one's ability to use digital tools as extensions of thought and behaviour, and it can be observed in the application and innovation of workflow technology. Relationship reconstruction is a sense of security, conflict resolution and agreement-making that people can create in their online communication, and it shows how they have adapted to virtual work. Self-regulation is the capacity to regulate emotions and thoughts in light of changes in technology and the large volume of information. The three dimensions do not exist independently but are close to one another and together form a complete adaptive system for the digital age based on the actual experiences and thoughts of the people.

2. Interactive Driving Mechanism of Individual Cognition and Digital Competence

2.1 The Formation of Employees' Adaptive Intentions According to Digital Cognitive Schemas

As the internal knowledge system for learning about and adapting to changes in the world of technology-driven work, digital cognitive schemas have changed the emotions and behaviour of employees in the digital age. Employees' previous knowledge of technology, information sharing and computer operation in their former lives will affect how much attention they pay to and learn about the new digital work environment. People with a high digital cognitive schema are more likely to find the new technologies relatively easy to use for work purposes, can learn the necessary information from complicated data windows and operating steps more quickly, and form a clear mental model of how to use digital technology. The organised cognitive foundation mentioned above offers an explanation system and psychological basis for the appearance of adaptive will.

Adaptation intention is one's will to change behaviour in response to the changes of the digital era, and it can be regarded as an adjustment of cognitive structures. Digital cognitive schemas can help employees find patterns and regularities in changes in technology, and they can also use past experiences and responses as coping mechanisms for the present situation by means of analogy and transfer. If a person already has a mental model for dealing with digital life and some working habits, they will be more willing to learn about new technologies or adapt to changes in the system. The connection between deep cognitive structures and behaviour in the world is not random; rather, it is based on how people learn and construct knowledge of the digital world[3].

2.2 Mediation effect of Digital Agility on Technological Iteration

Digital Agility is the ability of staff to learn new technologies and adapt to changes in the digital age quickly through the use of digital tools. With the progress of digitalisation, changes in technology have been happening at a high speed, and the old knowledge we have accumulated is no longer reliable; we need to be able to learn new systems and adapt to changes in work patterns quickly. Employees with good technological literacy can apply the general rules and flexible strategies of their digital cognition system to learn how to use new-technology platforms quickly and bridge the gap between knowledge and application. Therefore, we will be able to keep up with the changes in versions and modules and maintain the quality of the work.

Digital Agility is the Link Between Cognitive Schemas and Adaptive Behaviour. Employees' knowledge and expectations of the technological environment are in the form of digital cognitive schemas, and they need to be transformed by digital agility before they can be manifested in actual changes in work and problem-solving efforts. Digital agility can help to redirect cognitive resources towards behaviour and thus achieve the externalisation of adaptive intentions at the cognitive level in the form of coping performances in rapidly changing technological environments. When the speed of technological change is too high for people to learn effectively, they have no choice but to improvise; based on experience and intuition, they make decisions without full knowledge in an unstable environment to maintain good results.

2.3 The Chain Activation Path of Cognitive Reappraisal and Digital Self-efficacy

Cognitive reappraisal is a type of deep processing that can change one's attitude and perception of a situation in the digital workplace. Due to the instability in the digital era, employees need to constantly update their mindset on how to use new-technology systems, what their work will be different now, and what their roles in the organisation will be. Change how people think about why they are using technology, and they will begin to believe that it can improve work efficiency or broaden their own horizons. Reconstruction of meaning can reduce the cognitive load of learning new technologies and free up other mental resources[4].

At the same time, people's sense of self-efficacy in the face of problems is also gradually growing. A good attitude towards the changes at work can make people feel more in control and confident in using the new system and solving any problems that arise. Every successful application of technology is a real experience that promotes the development of digital self-efficacy, and this sense of efficacy can help people remain calm in the face of more serious problems with technology. Cognitive reappraisal and digital self-efficacy are related; that is to say, by changing one's perception of a problem, emotional arousal can be reduced, and a high level of digital self-efficacy can increase motivation and

perseverance in the face of difficulties. Together, they will form the internal circuit that is employed for operation.

3. The Generative Logic of Organizational Support Elements and Adaptive Behaviour

3.1 The Infiltration Effect of Digital Climate on Employees' Exploratory Behaviour

Digital Climate is people's perception of a company's technology environment and offers a basis for behavioural changes among staff. Regarding the three areas mentioned above, the company has started to introduce new digital tools, is willing to take some risks with technology, and has begun exploring all sorts of new applications. Gradually learn about the hidden knowledge system of digital work through symbols and interactions in daily work. In an open and supportive digital environment, employees will feel safe to learn about new technologies and try different ways of working; thus, they will be less anxious about making operational errors or experiencing a drop in efficiency, and will be able to start experimenting in a psychologically safe way. Although the institution has not officially put forward the idea of psychological safety, it has gradually been formed through the cooperation of colleagues, the tolerance for minor errors during the exploration of new technologies by supervisors, and the basic support provided to new ideas by the organisation; together, these have created a network of emotional support at work[5].

With the continuous spread of digital culture, exploratory behaviour has changed from being done occasionally by individuals to an organised type of behaviour. Infiltration is not the direct cause or result; rather, it creates a general atmosphere in the workplace that makes employees view technological exploration as part of their work rather than additional work. Therefore, the employees will be able to learn about the new functions in the interface independently, try linking data from different platforms, and create their own digital work processes. The spread of digital culture can motivate employees to be more proactive in their work, and by spreading examples and experiences from all departments in the company, this sense of initiative can be spread and strengthened throughout the organisation. When new ways of working are put forward by some staff and then adopted by others, they gradually lose their individual initiative, are integrated into the shared work culture and technology system of the team, and eventually become collective assets that help the company respond to changes in the digital era.

3.2 The Coupling Mechanism of Supply for Technological Adaptability and Individual Adjustment Abilities

Supply of technological adaptability refers to how well the digital tools, platforms and systems provided by the organisation can meet the actual needs of employees in their work and daily life. An increase in the level of supply technology will reduce the cognitive switching costs for employees and help them learn the system logic and apply it in their daily work more quickly. When the layout of a technological tool, its operation feedback and information display are in line with people's cognitive habits, employees can save some mental energy on learning how to use the tool and focus more of their mental resources on processing the content of their work and applying it in deeper ways[6].

At the same time, the supply of technological adaptability will also affect how well people can be self-reliant. On the one hand, the very adaptable supply of technology has reduced the learning curve for employees; thus, even those with relatively weak adjustment abilities can learn the basics of using the new technology successfully and help the company enter the digital era smoothly in the beginning. At the same time, if the employees have a good sense of adaptability, their feedback and usage data can also be employed to guide the optimisation of technology supply and prompt the organisation to make iterative improvements in response to changes in user needs. The link between supply and demand is no longer unidirectional; now, it is a dynamic equilibrium that is continuously changing due to the interaction of technology and people. The behaviour of the employees is to learn how to use the current technology system and to actively explore and redefine the opportunities created by new technologies. New behaviours of users have been added to the feedback loop for continuous improvement of the technology system, so co-evolution of technology and individual ability will be promoted in a spiral ascent to provide a stable generation of adaptive performance in the digital era.

3.3 Cross-level Penetration of Team Transactive Memory Systems in Adaptive Performance

Team transactive memory systems refer to the common cognitive system in a team that knows who has what knowledge, skills and information. With the development of digitalisation, changes in technology and the division of labour have increased the specialisation of work, and now it is difficult for individuals to learn all the required knowledge for their jobs independently. A transactive memory system can help team members quickly find the source of knowledge needed to solve a problem by gaining mutual awareness and cooperation, and it integrates all the knowledge of individuals into a collective knowledge base for the team. The first is to spread knowledge, and the second is to reduce the cognitive load of digital work.

Cross-level penetration of transactive memory systems in individual adaptation performance is achieved by means of information flow and cognitive support in daily collaboration. When people have technical problems or other operational issues, they can quickly get help from colleagues or learn about past projects in the team's memory system to reduce the time it takes to solve these problems. At the same time, the technical coping routines and problem-solving templates that the team has developed are also gradually being absorbed into the cognitive structure of the individuals and can be used independently to deal with similar situations. The path of penetration from the team's cognitive reserve to individual behaviour shows that the creation of adaptive performance is not solely due to personal factors but is also closely related to the knowledge network and collaboration mode at the team level.

Conclusion

Research has been carried out on the reasons for employees' adaptation to the new digital era, and based on the concepts of connotation, individual mechanisms and organisational logic, a three-level theoretical system has been established in this paper. In terms of concept, this paper thinks that the dynamic structure of adaptive performance in the digital age consists of three parts: technological integration, relationship reshaping and self-regulation; that is to say, how to respond to specific changes and one's ability to participate in the broader digital environment fall under this definition. Therefore, it is assumed that individual drivers were more able to adapt to the changes in cognition. Digital agility has also promoted this change in thinking, and as a result, people's confidence in technology has risen; thus, they are more willing to learn. According to the Organisation Support Scale, it has been observed that a good digital environment promotes exploration through diffusion effects, and technological adaptability and individual adaptation are in a state of symbiosis; team transactive memory systems have spread at all levels of the team, from team cognitive reserve to individual behaviour.

Further studies can explore how the driving factors mentioned above are expressed at different times in the digitalisation of organisations, carry out an in-depth study of the moderating effect of the speed of technological iteration on the relationship between individual cognition and elements of organisational support, introduce longitudinal research designs to track changes in adaptive performance over time, and investigate how algorithmic management alters the traditional driving mechanism of human-computer collaboration.

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