

Exploring the Dynamics of Digital Transformation Capabilities and Adaptive Performance of Administrative Staff in Public Tertiary Institutions, South-West Nigeria

Tajudeen Adisa JIMOH¹ and Tolulope Elizabeth ADENEKAN²

¹Department of Office Technology and Management,
The Federal Polytechnic, Ilaro, Nigeria
ORCID ID: 0000-0002-6931-3369

²Department of Information Management,
Lead City University, Ibadan, Nigeria

ABSTRACT

The dynamic nature of modern organisations as a result of evolving technologies, changes in structures, systems and human components of workplace, among others, emphasizes the importance of digital technology and work environment. This study examined the influence of digital transformation capabilities on adaptive performance of administrative staff of public tertiary institutions in South-west, Nigeria. Descriptive survey design involving quantitative data collection was employed and the population comprised the administrative staff of 14 federal tertiary institutions, out of which 373 were selected through systematic multi-stage sampling technique. Data collected through a 4-point likert questionnaire were analysed with frequency count, percentage and mean while the hypothesis formulated was tested with multiple linear regression at 0.05 level of significance. It was found that transformational capabilities and digital capabilities have significant relative and combined influence on adaptive performance of administrative staff of federal tertiary institutions in South-west, Nigeria. The study concluded that digital transformation capabilities are critical factors that underlying the adaptive performance of administrative staff of federal tertiary institutions in South-west, Nigeria and other public tertiary institutions. It was recommended, among others, that management of public tertiary institutions in Nigeria should intensify their digital transformation efforts while the administrative staff should make conscious efforts for self-development in the skillful use of digital resources to enable them fit and function effectively in a technology-driven environment of tertiary institutions.

Keywords: Administrative staff, Adaptive performance, Digital transformation capabilities

INTRODUCTION

Job performance is consistently a topical issue to researchers, management practitioners, owners of business and organisations as success in any endeavour depends on how well people perform assigned roles. The fact that effective and efficient work teams meet deadlines, get things done, show good attitude, have mastery of their jobs and contribute to the organisation's bottom-line make organisations and their managers to rationally look for employees whose attitude and performance will guarantee the achievement of their mission.

Job performance reflects the accumulated value or result of the set of behaviours of employees, their skills, abilities and efforts in meeting job targets and fulfilling work expectations (Dahkoul, 2018). It refers to measurable and changing behaviours, actions and engagement outcomes of employees that are linked to overall organizational performance and capable of contributing to goal achievement (Viswesvaran & Ones, 2017; Leonard, 2019).

One of the prominent sectors for the economic, socio-cultural and technological development of a nation is the tertiary education sector which has the responsibility to provide good environment for nurturing critical thinking and life-long learning, innovations and

breakthroughs through researches and transformation of people for quality and productive living, economic growth of nations and enhanced earnings for individuals. Institutions of higher learning have different categories and cadres of workers who are employed to carry out different functions for the smooth running of the Institutions and the accomplishment of goals. The performance of the administrative staff of tertiary institutions have far reaching consequence on teaching learning and research outlook of public tertiary institutions (Adejare et al., 2020) as they perform administrative and support functions that are critical to the smooth running of the institutions. However, there have been criticisms and empirical evidences on undesirable performance of administrative staff in federal tertiary institutions, like other public enterprises, which are linked to poor service experience, delay in processing requests, poor attitude exhibition, unsatisfactory work habits, among others. If left unaddressed, these may result into deteriorating and unsatisfactory performance outcomes, inefficiency cum service failure, unsatisfactory work impact and inability to connect with modern reality of work practices. Available empirical studies rarely explore job performance of administrative staff in tertiary institutions in terms of task performance and the extent to which employees are able to change and adapt to evolving work demands (adaptive performance).

In assessing employees' performance, specifications for performance content (the context in which performance takes places) and performance process (the manner in which performance develops and changes over time) are important for three aspects of performance requirements - the behavioural and/or cognitive content, level of expected performance, and the conditions under which a particular level of performance is expected (Campbell & Wiernik, 2015). Hence, some definitions of job performance encompass series of job behaviours, while some focus on employee's duties and responsibilities and others deals with performance measures that impinge on organization's goal but do not fall under duties and responsibilities (Rotundo & Sackett, 2002).

Job performance has been conceptualized in different ways resulting its differing dimensions and measurement factors used by researchers, management experts and practitioners to describe and measure job performance. Work performance framework of Campbell was among the first model for assessing performance. The framework proposed that job-specific task proficiency, non-job-specific task proficiency, written and oral communications, demonstrating effort, maintaining personal discipline, facilitating peer and team performance, supervision, and management and administration are the eight work performance dimensions (Koopmans et al., 2011).

On a broad level, job performance depicts the impact or involvement of an individual in the overall goal achievement and success of an organization, specific and measurable indexes of job performance take cognizance of a number of factors with a broad consensus that job performance is a combination of task and contextual performance which are comprehensive dimensions that fully cover the full domains on which job performance is based (Nini, 2019). The classification of the dimensions of work performance in most literature depicts task performance, contextual performance (Dhammika, 2013; Koopmans et al., 2013) and counterproductive work behaviour (Koopmans et al., 2011), some other frameworks cover adaptive performance and similar components that do not fall into any of the generic dimensions of job performance (Foy et al., 2019).

The nature of jobs in modern organisations require individuals who will exhibit desirable performance in their key roles and display positive characteristics that will make them fit in dynamic work environment (Dahkoul, 2018). This implies that beyond task performance, employees are expected to display remarkable level of adaptive performance to be able to adjust to changing circumstances and succeed in the face of new or evolving job demands and conditions (Nandini, 2020). Adaptive performance refers to individual employee's ability to adapt to dynamic work situations by adjusting behaviours to the dictates and demands of work

situations, new events and changes in job-related tasks (Yoonhee et al., 2020). Changes in the methods for accomplishing tasks, technology, job assignment, restructuring of organizations, new roles and job processes demanding new learning, new technologies, according to Charbonnier-Voirin and Roussel (2012), among others, require employees' adaptability to be able to effectively cope in the ever-dynamic work environment of modern organisations.

The need for success and growth of organisations prompt owners and managers of organisations to increasingly emphasize adaptive performance of their workforce thereby making adaptive performance and important performance index in addition to task-oriented performance and extra role behaviour especially when changes are imminent (Sweet et al., 2015; Yoonhee et al., 2020). Considering adaptive performance as an important factor situated within task-related changes at work, makes it fit squarely within the broader realm of job performance and particularly relevant to organizational objectives and facilitates growing interest in adaptive performance as a dimension of job performance (Jundt et al., 2015).

Adaptive performance general refers to individual employee's ability to adapt to dynamic work situations by adjusting behaviours to the dictated and demands of work situations and new events (Allworth & Hesketh, 1999; Hesketh & Neal, 1999; Pulakos, et al., 2000). In line with behavioural notion of job performance, adaptive performance is described as task-performance-directed behaviours which an employee manifests proactively or reactively to relevant changes in job-related tasks. Such changes include changes in the nature of job-related tasks, methods for accomplishing tasks (Jundt et al., 2015), technological transformations, changes in core job assignment, restructuring of organizations, new roles and job assignments demanding new learning, uncertainty, etc. which require effective adaptive performance to be able to efficiently deal with volatile work circumstances (Pradhan & Jena, 2016; Chan, 2000; Baard et al., 2014).

Adaptive performance reflects a set of behaviours necessary to maintain performance levels or limiting decrease in performance decrements as a result of changes that take place when organisation redesign jobs, employees take up new roles, adjust their behaviour, knowledge, skills, or need to acquire new skills with a view to responding appropriately and effectively to actual or anticipated work changes behaviours relating to adaptive performance are, often times, directed towards maintaining performance levels or minimizing shortfall or decrease in performance as a result of any form of change in work conditions, tools or environment (Jundt et al., 2015). This performance component shows the ability of an employee or group of employees to adjust their behaviours and cognitions in response to changing situations (Pulakos et al., 2000; Yoonhee et al., 2020).

Adaptive performance has multifactor dimensions involving the combinations of factors such as "dealing with uncertain or unpredictable work situations; handling emergencies or crisis situations; solving problems creatively; handling work stress; learning new tasks, technologies and procedures; demonstrating interpersonal adaptability; demonstrating cultural adaptability; and demonstrating physically oriented adaptability" attributed to an employee (Pulakos et al., 2002; Zhang & Barthol, 2010; Jundt et al., 2015) which are dependent upon organizational or occupational demands of a job (Charbonnier-Voirin & Roussel, 2012). A revised dimension of measures of adaptive performance comprised "applied creativity, adaptability in crisis situations, cultural adaptability, emotional control, emotional perceptiveness, flexibility of opinion, openness to criticism, proactive learning, and dealing with ambiguous situations" as indices of adaptive behaviour (Marlow et al., 2015;). The need for employees' characteristics involving the combination of some or all these dimensions of adaptive job behaviours is on the increase as modern workplace is characterized by evolving technologies and changing environments. Hence, there is increasing demand for flexible individuals who have the abilities to handle and adapt to changes positively (Calarco, 2016).

Recent development and advancement in technology, digital applications and the consequent integration of digital processes and technologies offer the opportunity for improved

work processes, flexibility and enhanced service delivery (Rachinger, 2019). The pervasiveness of these technological transformations brought about rapid adoption and utilization of digital tools and restructuring of organisational activities and models of tertiary institutions, thus changing the features of administrative functions (Morakanyane, 2020).

As a term used in the private enterprises in connection with the use of new technologies to stay relevant and survive in the competitive technology era, for the provision of services and products via technology enabled platforms (Berman, 2012; Mergela et al., 2019), digital transformation is used in the public sector enterprises to denote “new ways of working with stakeholders, building new frameworks of service delivery and creating new forms of relationships” (European Commission, 2013) which results in changes in the mode of services delivery and emphasis on direct interactions and changing needs of key stakeholders and service recipients with the use of emerging technologies and innovation. Digital transformation is thus an all-inclusive approach to translate government establishments, organisations and institutions “from simple digitization efforts to cultural, managerial, procedural, and developmental changes of the organization as a whole” (Mergela et al., 2019).

Digital transformation is a term that covers technological potentials employed to effect changes in business and organizational models with a view to creating more value, providing efficient and quality services and satisfying stakeholders, clients or customers (Schallmo & Williams, 2018), the integration of emerging digital technologies into non-tech organisations and businesses (Khin & Ho, 2018). It is a deliberate and continuous digital evolution of an organisation’s operational, tactical and strategic activities in terms of work practices and processes, business strategies and methods (Mazzone, 2014) and continuous engagement of organisations in cycle of digital innovation processes and outcomes to develop or improve offerings and services (Skog, 2019). Digital transformation is the drastic changes in the core value proposition such as the constant changes of information and communication hardware into seamlessly little devices despite the ever increasing capacity for processing, storage and management (Brynjolfsson & Saunders, 2009) which are instrumental in the innovation and transformation efforts of organisations and business of different forms and nature (Tilson et al., 2010).

Studies in extant literature had explored constructs such as digital technology, digital capability, digital strategies, technology adoption level, organisational agility, degree of automation, innovative methods, digital skills and competence as indicators of digital transformation (Didier & George, 2020; Ghayth & Mundher, 2020). This study builds on the common elements of digital transformation – organisation, technology and people (George et al., 2014; Gerald, 2017; Khin & Ho, 2018; Kutnjak et al., 2019; Bourne, 2021) to explore transformational capabilities and digital capabilities as indexes of digital transformation capabilities of public tertiary institutions in Nigeria. The objective of this study was to examine the influence of digital transformation capabilities (transformational and digital capabilities) on adaptive performance of administrative staff of public tertiary institutions in Nigeria.

Indicators drawn from a wide range of areas - education, business, innovation, commerce, governance, economic and social outcomes on the likely indices of measuring digital transformation encompass the assessment of technologies underpinning the transformation, digital agility of the organisation or business, data set/flow and management, expertise and skills deployed, digital environment, digital leadership or governance, etc. and their impacts on performance, social wellbeing, service delivery, economic indicators (OECD, 2019). The key areas of interest or spheres of concern that define the coverage of digital transformation are customers/users/consumers of products or services, competitors/other organisations, need for data management, innovation involving new tools, processes and competent workforce and value creations from the adoption and implementation of digital transformation (Rogers, 2016). Hence, organisations focus on digital technologies, people’s competence to explore the

functional use of the technologies, collaborative efforts and capacity to redesign work flow and processes to facilitate digitally-driven changes and outcome to the benefit of the organisation and its targets constituents (Kutnjak et al., 2019). These are critical to digital transformation in business and service sectors as organisations' efforts in this change process are channeled to realign and adapt existing technologies, processes and structures; to develop human resource competence for digital innovation; and to learn, discover, embrace and adapt to emerging digital technologies while the interplay of digital technologies, innovation, employees' competence and skills required, are hinged on organisation's capacity to reorganize resources, methods, process and change initiatives within and outside the organisation (Ciarli et al., 2019). Regardless of the availability of innovative digital technologies, the essential needs for digital transformation is purpose-driven, envisioning and facilitation of changes in how an organisation carries out its operation and how services are rendered to deliver value to stakeholders which are purely management and people challenge, not just a technology issue (Westerman et al., 2011).

According to Polska (2018), transformational capabilities focus on the fitness of organisation's culture, change leadership and agility to embrace and implement disruptive innovations. In addition to other factors, having transformational capability is key to a successful digital transformation (Misauer, 2019). Transformational capability is really about how a company reacts to changes and requires dynamic capability – the ability to move fast (speed, nimbleness, responsiveness) and stability, a stable foundation or platform, if that do not change and serves as stable backbone that becomes a springboard for the company, an anchor point that does not change while a whole bunch of other things are changing as a result of the changes in the environment (Sheffield, 2021). Gunsberg et al. (2017) were of the view that strategy, structure in addition to leadership, culture, learning and change orientation among team leaders are the high-level transformational needs for digital change. Thus, transformational capabilities to adequately respond to technological changes and development could be assessed through change leadership, digital agility and innovation culture of an organisation.

While digital agility is one of the capabilities necessary to initiate and sustain digital transformation and remains an important determinant of capabilities required for innovation in product development and service delivery as the case may be (Çallı & Çalli, 2021), other factors—strategy, organizational structure, leadership, technology—are significant for purposeful prediction and identification of change needs as well as implementation of digital change initiatives in organisational activities, processes and operations (Cramner, 2021), all digital transformation models point to two important factors considered as essential for any digital transformation - digital technologies and the workforce which is endowed and positioned to explore, use and manage other resources, processes and innovations (Tratkowska, 2019). Digital capability thus includes the digital competence of people and innovative digital technologies which are distinctive knowledge or expertise built to drive digital solution and flexible technology resources and architecture to enable digital models and operations respectively (Polska, 2018).

The effectiveness and progress of digital transformation efforts is indicated in an organisations' commitment, investment in digital technology but significantly dependent on the attitude of people in the organisation as well as their competence and mastery of digital skill to facilitate the digital transformation drive the digital transformation journey (Ghayth & Mundher, 2020). This shows that skill, competence and capability of people needed to explore, identify and maximize the offering of digital innovations in a work organisation are major consideration for any digital change (Khin & Ho, 2018). Competences are a blend of knowledge, understanding, skills and attitudes that are suitable in a given perspective while the key ones which include digital competence are needed by individuals to personal and career

fulfilment and growth, social inclusion, productive engagement and employment opportunities (European Commission, 2020). Digital competence is a key concept that describes technology-related skills and the type of mastery, competence and knowledge required to function effectively in the knowledge society in which emerging technologies and innovation are central to the provision of solutions and offering of new opportunities (Ilomäki, et al., 2016). It is one of the key competences for lifelong learning considered as transversal in facilitating the acquisition of others skills in a modern society.

The combination of new technologies with innovative methods of data processing and analysis disrupts existing business processes and enables completely new business models thereby making organisations to exploit digital technologies in order to ensure or enhance individual and organizational performance, growth and survival (Li et al., 2016). Digital technologies refer to electronic devices, automatic systems, and technological resources that generate, process or store information (Johnson, 2021). It is also referred to as the provision and the use of electronic tools that are needed to install and combine other forms of technology as well as working principles, processes and models (Rabab & Gilbert, 2021). Technological tools in this sense include internet and website applications, computers and smart phones, artificial intelligence, virtual reality, big data, office assistance, electronic records system, e-books, cloud computing, multimedia, 3D printing and graphics, nano technology, etc. that form the driving force in modern organisations (Brunetti et al., 2020).

METHODOLOGY

Descriptive survey design involving the collection of quantitative data was employed as the population of interest, that is, administrative staff of public tertiary institutions comprises large number of individuals in different cadres of work groups, different institutions and wide geographical coverage which spans across the six states of the South-west Geopolitical zone of Nigeria. 14 federal tertiary institutions in the study area were covered - six universities, five polytechnics and three colleges of education owned by the federal government. Preliminary investigation revealed a total of 5557 administrative staff who are senior registry staff (secretaries, executive officers, administrative officers and officers in the registrars cadre) in the federal tertiary institutions.

For the purpose of this study, a sample of 373 administrative staff was considered appropriate from the population of administrative staff of federal tertiary institutions in South-west, Nigeria. The sample size was determined with the use of Taro Yamane's method of sample size determination in a known population of study. Multi-stage sampling technique was used for sample selection.

The federal institutions were stratified into universities, polytechnics and colleges of education and stratified sampling technique was used to determine the sample size from each stratum. Then, convenient sampling technique was employed for the selection of the sample because of possible non-availability of all administrative staff in each institution at the time the survey was conducted.

In determining the nexus and influence of digital transformation capabilities on adaptive performance of the administrative staff, it was postulated that there is no significant influence of digital transformation capabilities (transformational and digital capabilities) on adaptive performance of administrative staff of federal tertiary institutions in Southwest, Nigeria.

The instrument used for data collection was a structured questionnaire which made use of existing structured scales with appropriate properties. Factor input for adaptive performance were adapted from Koopmans et al. (2013) individual work performance frameworks and Sohee and Soyoung (2019) individual work performance indicators. The scales were designed with a 4-point likert rating options - transformational capabilities has nine items covering commitment of management to digital changes, cultivating digital culture across organisation,

identifying new digital opportunities, and so on. Digital capabilities has two components – digital technology with eight items and digital competence comprising 6 items. The reliability of the scales was determined with Cronbach’s alpha which gave reliability coefficient of 0.72, 0.70 for adaptive performance and digital transformation scales respectively and 0.70 for the instrument as a whole.

RESULTS

The null hypothesis one which states that there is no significant influence of digital transformation capabilities (transformational and digital capabilities) on adaptive performance of administrative staff of federal tertiary institutions in South-west, Nigeria was tested using multiple linear regression analysis. In the analysis, the values of adaptive performance metrics were regressed on the values of digital transformation sub-measures (transformational capabilities and digital capabilities. Data for the independent variable was generated by summing responses of all variable items respectively and that of the dependent variable was generated by adding responses of all items used to measure the variable. The test was done with aid of SPSS Version 25 at 95% confidence interval and the decision was to reject the null hypothesis if the significant value is less than 0.05, and accept the alternative hypothesis.

Table 1: Summary of descriptive analysis of adaptive performance

Adaptive Performance	VH	H	L	VL	Mean
Showing resilience and open-mindedness	107 (33.8%)	181 (57.1%)	29 (9.1%)	-	3.25
Adjusting to emerging job requirements	115 (36.3%)	171 (53.9%)	31 (9.8%)	-	3.26
Learning new skills	137 (43.2%)	142 (44.8%)	36 (11.4%)	2 (0.6%)	3.31
Grand Mean					3.31

Source: Field Survey Results (2023)

As shown in Table 1, on the average, showing resilience and open-mindedness revealed a mean of 3.30 depicting considerable ability to cope with new work demands, flexibility to challenges and handling difficult work situations; weighted men of 3.32 for respondents’ abilities to adjust to new emerging job and task requirement which covers the capability to adjusting to new work processes and tools, accepting new technologies and readiness to meet emerging work demands; and 3.31 for learning new skills which encompasses adjustment to new work processes and tools, accepting and learning new technologies and readiness to meet emerging work demands. The grand mean for adaptive performance is 3.31 which suggests that the level of adaptive performance of administrative staff of federal tertiary institutions under reference is moderately high.

Table 2: Summary of descriptive analysis of digital transformation capabilities

Digital Transformational Capabilities	VH	H	L	VL	Mean
Transformational Capabilities					
Digital Leadership	122 (38.5%)	143 (45.1%)	46 (14.5%)	6 (1.9%)	3.20
Innovation Culture	118 (37.2%)	140 (44.2%)	53 (16.7%)	6 (1.9%)	3.17
Digital Agility	108 (34.1%)	145 (45.7%)	62 (19.6%)	2 (0.6%)	3.13
<i>Weighted mean</i>					<i>3.16</i>
Digital Capabilities					
Digital Technologies	120 (37.9%)	124 (39.1%)	55 (17.4%)	18 (5.7%)	3.09
Digital Competence	97 (30.6%)	149 (47.0%)	61 (19.2%)	10 (3.2%)	3.05
<i>Weighted Mean</i>					<i>3.07</i>
Grand Mean					3.21

Source: Field Survey Results (2023)

Table 2 shows that shows a weighted mean of 3.16 for transformational capabilities which captures digital leadership (emphasizing and ensuring digital leadership at all levels, commitment of management to digital changes and integration of digital technology into strategic planning); innovation culture (innovation practices across sections and departments, freedom for creativity and idea generation among staff and cultivating digital culture across the organisation) and digital agility (identifying new digital opportunities, developing and enhancing human capacities for emerging technologies and taking advantage of digital resources). for digital capabilities, the result gave a weighted mean of 3.07 depicting level of digital technologies (IT-enabled internal communication networks, internet resources/facilities, cloud computing facilities, virtual interactions resources, staff database architecture, students database management system, cyber security system and e-service platforms and architecture) and digital competence level of the administrative staff (communication in online interactions, office suites and applications usage, virtual collaboration for data creation and sharing, cyber security competence, multi-media usage and digital information security). On the average, digital transformation capabilities has a mean of 3.21 which portends remarkable digital transformation of the surveyed federal tertiary institutions.

Table 3: Summary of regression analysis for the influence of digital transformation on adaptive performance

Model	F(df)	Anova Sig	
R	0.715		
R Square	0.512	109.371(3,313)	
Adjusted R Square	0.507		
Coefficients	Unstandardized Coefficients	t	sig
Constant	1.755	19.021	.000
Transformational capability	.418	10.241	.000
Digital capability	.151	3.160	.002
a. Dependent Variable: Adaptive performance			
b. Predictors: (Constant), Digital transformation capabilities			

Source: Field Survey Results (2023)

From the results in Table 3, digital transformation has strong positive and statistically significant relationship with the job performance of administrative staff of federal tertiary institutions in South-west, Nigeria. ($R = 0.715$, $p < 0.05$). The coefficient of determination (Adj. R^2) of 0.507 shows that digital transformation predicts 50.7% of the changes in adaptive performance of the administrative staff, while the remaining 49.3% changes in the adaptability could be explained by other external factors. The results of the ANOVA, showing the overall model significance of regression test revealed that digital transformation capabilities have significant influence on adaptive performance of the administrative staff. This can be explained by the F-value (109.371) and low p-value (0.000) which is statistically significant at 95% confidence interval. Hence, the result posited that digital transformation capabilities of the federal tertiary institutions in South-west, Nigeria significantly influenced the adaptive job performance of administrative staff of the institutions.

Furthermore, the results of regression coefficients revealed that a positive and statistically significant relative influence was reported for transformational capability and digital capability. Specifically, the results reveal that at 95% confidence level, transformational capability ($\beta = 0.418$, $p = 0.000$, $t = 10.241$) and digital capability ($\beta = 0.151$, $p = 0.000$, $t = 3.160$) were statistically significant as the p-values were less than 0.05 and the t-values greater than 1.96. Also, the results of regression coefficients position that, a unit change in transformational

capability will lead to a 0.418 increase in the adaptive performance of administrative staff. Also, a unit change in digital capability will lead to 0.151 increase in the adaptability of the administrative staff given that all other factors are held constant.

Of the digital transformational capabilities examined, transformational capability has the highest relative influence (Beta=0.418) followed by digital capability (Beta=0.151). These relative contribution to adaptive performance were positive and statistically significant at probability values less than 0.05. Given this result (Adj. $R^2 = 0.507$, $F(3,313) = 109.371$, $p = 0.000$), this study rejects the null hypothesis which states that digital transformation capabilities have no significant influence on the adaptive performance of administrative staff of federal tertiary institutions in South-west, Nigeria.

DISCUSSION

Transformational capabilities falls under the organisation domain of digital transformation and entails the ability of the institutions to respond to technological developments in changing their operations and methods by adopting digital methods, processes, tools and applications. Digital Capabilities covers the people and technology components and it reflects digital technologies, tools, applications and resources that are required for driving the institutions' digital transformation on one hand, and the digital competence, technology-related skills, expertise, knowledge, disposition and attitude required of the administrative staff to perform their jobs, solve problems, communicate, manage information, collaborate, create and share digital content independently and appropriately in a digitally transforming/transformed institutions.

From the results of test of hypothesis one, it was found that digital transformation capabilities have positive and strong relationship with adaptive performance of administrative staff of federal tertiary institutions in South-west, Nigeria. The findings show that transformational capability (digital leadership, innovation culture and digital agility) has higher relative influence on adaptive performance of the administrative staff of federal tertiary institutions in South-west, Nigeria followed than digital capability (digital technologies and digital competence). The results implies that transformational capabilities as a key component of digital transformation showing the fitness of organisations' culture, change leadership and agility to embrace and implement digital tools and processes; to change quickly and adapt to new technology is potently instrumental in facilitating desirable performance level in the discharge of administrative functions, responsibilities and service delivery. This portends that the culture of innovation, the dynamic nature of the leadership of the federal tertiary institutions to recognize and respond to technological changes by integrating digital technology into their strategic plans, giving room for innovation practices and creativity among staff are fundamental in their digital transformation and essentially in leveraging technology for enhanced adaptability of their administrative in discharging their responsibilities.

This finding aligns with a number of existing research findings. For example, a well-grounded measurement model of digital transformation revealed that organisation's capability, leadership commitment to digital transformation, degree of agility for digital process integration, people's expertise, readiness to learn new technology and digital strategy, empowerment of human capacity and technology adoption and usage are key drivers of job performance and organisations' functions in modern days (Rossmann, 2018). Also, the ambition of public organisations for digital transformation which is reflected in the leadership disposition, commitment and investment in digital tools and human capacities was reported to be significant in igniting completely new ways of working in public organisations and facilitates desirable functioning of organs of public organisations (Benjamin & Potts, 2018). The results are in line with previous research submissions that digitally transforming organisation are characterized by organisations' readiness, innovation culture, digital agility and culture

(Aslanova & Kulichkina, 2020) availability of IT solutions, investment in digital technologies (Periyasamy, 2022) competence and mastery of digital skills or expertise to achieve active usage and optimal engagement level by employees (Dieffenbacher, 2022).

As digitally supportive organisational culture was reported by Martínez (2020) to energize and propel digital strategies, operations and subsequently results in increased strategic benefits and value creation, the finding of this study also positions that integration of digital technology into the institutions' strategic plan, embeddedness of digital culture across the institutions, motivation for innovations and creativity among staff are key ingredients necessary to propel digital transformation into yielding desirable blend of performance indexes for among administrative staff of federal tertiary institutions in South-west, Nigeria. The result of this study also supports other previous research findings that employees' digital competence enhances individual performance and their intentions to continue in the environment as a result of their perceptions of ease of use of technologies provided as submitted by Marsh (2018), thus revealing a significant need for digital literacy being a fundamental requisite for technology utilization.

In addition, the results point to the fact that availability of capacity development and enhancement mechanisms in the area of digital competence and access to digital resources foster the deployment of digital processes and tools as well as readiness and willingness of administrative staff to learn new technologies, master and streamline new work processes. These will be helpful in proffering solutions to administrative work issues, in communicating with other persons and departments and allows for good work flow, dissipation of minimal manual efforts, timeliness and effective administrative service delivery. This supports the submission that organisations' capabilities for internet of things, cyber security system, big data management, cloud computing, etc. is significant in driving any meaningful digital transformation in organisation and that only organizations which have agility as a (dynamic) capability can effectively cope with the changes in technology and adopt same for improved workers' performance, operations efficiency and effectiveness, stakeholders' satisfaction and organisational growth (Mrugalska & Ahmed, 2021).

As the adoption of digital technology was reported by Carvalho et al. (2019) to be significant in transforming existing work processes easily and quickly and in spinning up new work patterns to respond to digital changes, this study also reveal that digital transformation capabilities of the federal tertiary institutions in South-west, Nigeria was found to be capable of enabling the administrative staff to exhibit adaptive use of technology, flexibility to challenges, to be dynamic in handling difficult work situations and in generating new ideas for discharging their administrative roles. With digital leadership and culture across the institutions, the administrative staff will learn new methods and demands of work, exhibit abilities for innovative thinking, digital disposition, collaborative competence, active participation in virtual communication and commitment to digital up-skilling which are essential attributes for adaptability to meet job demands in the ever-changing technology-driven institutions of higher learning.

CONCLUSION AND RECOMMENDATIONS

The nature of work of the administrative staff of federal tertiary institution requires a considerable level of adaptability signifying remarkable abilities to adjust and adapt to changes in work roles, methods, technology, disposition toward resilience, open-mindedness and flexibility in handling difficult work situations effectively. The willingness and readiness to learn new skills, adaptability to emerging job requirements, and ability to generate innovative ideas are indicative of administrative workforce that is well-rounded to meet the challenges of their roles, and contribute to the advancement of their institutions in an ever-evolving environment.

The level of adaptive performance of administrative staff of tertiary institutions in South-west, Nigeria is significantly related and dependent on digital transformation capabilities in the institutions. Transformational capability (innovation culture, digital leadership and agility) and digital capabilities (availability of digital resources and the people's competence in the use of digital tools and processes) are critical digital transformation factors that largely influence the adaptive performance of the administrative staff and are essentially required to facilitate improvement in administrative functions, responsibilities and service delivery. Implementation of digital transformation initiatives and sustenance of digital ecosystem within the federal tertiary institutions and similar educational institutions will ignite new work patterns, propel adaptive use of technology, facilitate staff flexibility and versatility of the administrative personnel to generate innovative ideas which are necessary to enhance internal and external communications, simplify and streamline students enrolment and support services, improve inter-departmental workflow, foster digitalized staff and students records management, information security and general institution's administrative effectiveness and efficiency.

Hence, based on the findings of this study, it is recommended that management of federal tertiary institutions in South-west, Nigeria should focus more attention on the performance of the administrative staff not only in their traditional functions but also on their adaptability to new work demands, technology-enabled work processes and adjustment to emerging roles and expectations through domain-specific and purpose-driven digital training. Administrative staff of federal tertiary institutions in South-west, Nigeria should make conscious personal efforts towards self-development in the skilful use of digital technologies for effective functioning in a digital environment, be willing and ready to adapt to technology-related changes and expectations in their jobs.

REFERENCES

- Adejare, B. O., Olaore, G. O., Udofia, E. E., & Emola, T. B. (2020). Inefficiency among non-academic staffs in Nigerian tertiary institutions: The role of training and development. *Journal of Efficiency and Responsibility in Education and Science*, 13(2), 56-66. <http://dx.doi.org/10.7160/eriesj.2020.130201>
- Aslanova, I. V. & Kulichkina, A. I. (2020). Digital maturity: Definition and model. *Advances in Economics, Business and Management Research*, 138, 443-449.
- Baard, S. K., Rench, T. A., & Kozlowski, S. W. J. (2014). Performance adaptation: A theoretical integration and review. *Journal of Management*, 40, 48-99.
- Benjamin, K. & Potts, H. W. (2020). Digital transformation in government: Lessons for digital health. *Digital Health*, 3, 1-5. <https://doi.org/10.1177/2055207618759168>
- Berman, S. J. (2012). Digital transformation: Opportunities to create new business models. *Strategy and Leadership*, 40(2), 16-24. <https://doi.org/10.1108/10878571211209314>
- Bourne, V. (2021). Digital transformation index. <https://www.delltechnologies.com/asset/en-us/solutions/business-solutions/briefs-summaries/dt-index-2020-full-findings-report.pdf>
- Brunetti, F., Matt, D., Pedrini, G., & Orzes, G. (2020). Digital transformation challenges: Strategies emerging from a multi-stakeholder approach, *Total Quality Management Journal*, 32(4), 697-724. <https://doi.org/10.1108/TQM-12-2019-0309>
- Brynjolfsson, E. & Saunders, A. (2009). *Wired for innovation: How information technology is reshaping the economy*. MIT Press, Cambridge.
- Calarco, H. N. (2016). Measuring the relationship between adaptive performance and job satisfaction. <https://jewelscholar.mtsu.edu/server/api/core/bitstreams/bdf1e27a-c137-4b2b-809d-65a1a51d84e1/content>.
- Çallı, B. A., & Çallı, L. (2021). Relationships between digital maturity, organizational agility, and firm performance: an empirical investigation on SMEs. *Business & Management Studies: An International Journal*, 9(2), 486-502.

- Campbell, J. P. & Wiernik, B. M. (2015). The modeling and assessment of work performance. *The Annual Review of Organizational Psychology and Organizational Behaviour*, 2, 47-74.
- Carvalho, A. M., Sampaio, P., Rebentisch, E., Carvalho, J. Á., & Saraiva, P. (2019). Operational excellence, organisational culture and agility: The missing link?. *Total Quality Management & Business Excellence*, 30(13-14), 1495-1514. <https://doi.org/10.1080/14783363.2017.1374833>
- Chan, D. (2000). Understanding adaptation to changes in the work environment: Integrating individual difference and learning perspectives. *Research in Personnel and Human Resources Management*, 18, 1–42.
- Charbonnier-Voirin, A. & Roussel, P. (2012). Adaptive performance: A new scale to measure individual performance in organizations. *Canadian Journal of Administrative Sciences*, 29, 280–293.
- Ciarli, T., Kenney, M., Massini, S. & Piscitello, L. (2021). Digital technologies, innovation, and skills: emerging trajectories and challenges. *Research Policy*, 50(7). <https://doi.org/10.1016/j.respol.2021.104289>.
- Dahkoul, Z. M. (2018). The determinants of employee performance in Jordanian organizations, *Journal of Economics, Finance and Accounting*, 5(1), 11-17.
- Dhammika, K. A. S. (2013). Measuring employees' performance in the public sector in Sri Lanka: Testing of two models. *Kelaniya Journal of Human Resource Management*, 8(1).
- Didier, B. & George, W. (2020). The nine elements of digital transformation. <https://sloanreview.mit.edu/article/the-new-elements-of-digital-transformation>
- Dieffenbacher, S. (2022). What is digital maturity, how to measure, tools & models? <https://digitalleadership.com/blog/digital-maturity/>.
- European Commission (2020). The digital competence framework for citizens why, what, for whom. <https://ec.europa.eu/jrc/sites/default/files/DIGCOMP-FINAL%20UPDATED%2002-06-2016.pdf>
- Foy, T., Dwyer, R. J., Nafarrete, R., Hammoud, M. S. S., & Rockett, P. (2019). Managing job performance, social support and work-life conflict to reduce workplace stress. *International Journal of Productivity and Performance Management*, 68(6), 1018-1041.
- Ghayth, A. J. & A. S. Mundher, A. S. (2020). Assessment of digital competence of employees and teaching staff at the Technical College of Management, Kufa. *International Journal of Innovation, Creativity and Change*, 12(12).
- Gunsberg, D., Callow, B., Ryan, B., Suthers, J., Baker, P. A. & Richardson, J. (2018). Applying an organisational agility maturity model. *Journal of Organizational Change Management*, 31(6), 1315–1343. <https://doi.org/10.1108/JOCM-10-2017-0398>
- Hesketh, B. & Neal, A. (1999). Technology and Performance. In Ligen D. R. & Pulakos, E. D. (Eds.), *The changing nature of performance: Implications for staffing, motivation, and development*. Jossey-Bass.
- Iloäki, L., Paavola, S., Lakkala, M. & Kantosalo, A. (2016). Digital competence: An emergent boundary concept for policy and educational research. *Education and Information Technologies*, 21(3), 655–679. <https://doi.org/10.1007/s10639-014-9346-4>.
- Johnson, K. (2021). *What is Digital Technology? 25 Best Examples*. <https://honestproscons.com/what-is-digital-technology-25-best-examples>
- Jundt, D. K., Shoss, M. K., & Huang, J. L. (2015). Individual adaptive performance in organizations: A review. *Journal of Organisation Behaviour*, 36, 53–71.
- Khin, S. & Ho, T. (2018). Digital technology, digital capability and organizational performance: A mediating role of digital innovation. *International Journal of Innovation Science*. <https://doi.org/10.1108/IJIS-08-2018-0083>

- Koopmans, L., Bernaards, C. M. & Hildebrandt, V. H. Vet, H. C. W., Beek, A. J. (2013). Measuring Individual Work Performance - Identifying and Selecting Indicators. *Journal of Prevention, Assessment & Rehabilitation*, 45(3). <https://doi.org/10.3233/WOR-131659>
- Kutnjak, A., Pihiri, I. & Furjan, M. T. (2019). Digital transformation case studies across industries: Literature review. *Electronics and Microelectronics*, 1293-1298.
- Kyoung-Ah N. & Sunyoung, P. (2019). Factors influencing job performance: organizational learning culture, cultural intelligence, and transformational leadership. *Performance Improvement Quarterly*. <https://doi.org/10.1002/piq.21292>
- Leonard, K. (2019). Importance of employee performance in business organizations. <https://smallbusiness.chron.com/importance-employee-performance-business-organizations-967.html>
- Li, F., Nucciarelli, A., Roden, S. & Graham, G. (2016). How smart cities transform operations models: A new research agenda for operations management in the digital economy. *Production Planning & Control*, 27(6), 514-528.
- M. Rachinger, M., Rauter, R., Müller, C. Vorraber, W. & Schirgi, E. (2019). Digitalization and its influence on business model innovation. *Journal of Manufacturing Technology Management*, 30(8), 1143-1160. <https://doi.org/10.1108/JMTM-01-2018-0020>
- Marlow, K. K., Calarco, H. N., Frame, M. C., & Hein, M. B. (2015). Building a better adaptive performance measure: Factor analysis and scale validation. 11th Annual River Cities Industrial/Organizational Psychology Conference, Chattanooga.
- Marsh, E. (2018). Understanding the effect of digital literacy on employees' digital workplace continuance intentions and individual performance. *International Journal of Digital Literacy and Digital Competence*, 9(2), 15-33.
- Mazzone, D. M. (2014). Digital or death: Digital transformation - the only choice for business to survive smash and conquer. <https://www.amazon.com/Digital-Death-Transformation-Business-Survive/dp/0993957307>
- Mergela, I., Edelman, N. & Haug, N. (2020). Defining digital transformation: Results from expert interviews. *Government Information Quarterly*. <https://doi.org/10.1016/j.giq.2019.06.002>
- Misauer, L. (2019). Digital transformation success depends on digital agility. <https://www.striata.com/posts/digital-agility-in-digital-transformation>
- Morakanyane, R., O'Reilly, P. & McAvoy, J. (2020). Determining digital transformation success factors. 53rd Hawaii International Conference on System Sciences.
- Mrugalska, B. & Ahmed, J. (2021). Organizational agility in industry 4.0: A systematic literature review. *Sustainability*, 13. <https://doi.org/10.3390/su13158272>
- Nandini, W., Gustomo, A. & Sushandoyo, D. (2022). The antecedents and consequences of individual adaptive performance: A systematic literature study. *Jurnal Ilmu Administrasi dan Organisasi*, 29(2). <https://doi.org/10.20476/jbb.v29i2.1271>
- Nini, M. (2019). Job performance: Why task and contextual performance matter from an evidence-based management perspective. <https://www.ckju.net/en/dossier/job-performance-evidence-based-management-perspective-why-task-and-contextual-performance-matters/1258>
- Organisation for Economic Cooperation and Development (2019). *Going digital: Shaping policies, improving lives*. OECD Publishing. <https://doi.org/10.1787/9789264312012-en>
- Periyasamy, R. (2022). Five key metrics to measure your digital transformation progress. <https://www.apty.io/blog/digital-transformation-progress>
- Polska, C. (2018). Digital excellence model. https://cdn2.hubspot.net/hubfs/4295993/PL_Digital%20Excellence/DEA/Digital%20Excellence%20MODEL_EN.pdf?t=1540597166140

- Pradhan, R. K. & Jena L. K. (2016). Employee performance at workplace: Conceptual model and empirical validation. *Business Perspectives and Research*, 5(1), 1-17, <https://doi.org/10.1177/2278533716671630>
- Rabab, M. M. & Gilbert, K. (2020). Digital innovation and connections. *Research on Innovative Digital Practices*. <https://doi.org/10.4018/978-1-5225-9438-3.ch009>
- Rossmann, A. (2018). Digital maturity: conceptualization and measurement model, 39th International Conference on Information Systems: San Francisco, California, USA.
- Rotundo, M. & Sackett, P. R. (2002). The relative importance of task, citizenship, and counterproductive performance to global ratings of job performance: A policy capturing approach. *Journal of Applied Psychology*, 87(1), 66-80.
- Schallmo, D. R. A. & Williams, C. A. (2018). *Digital transformation now! Guiding the Successful digitalization of your business model*. Springer. <https://doi.org/10.1007/978-3-319-72844-5>
- Sheffield, L. (202). What is organizational agility and why is it necessary for success? <https://www.guidespark.com/blog/organizational-agility-for-business-success>
- Sohee, P. & Sunyoung, P. (2019). Employee adaptive performance and its antecedents: Review and synthesis. *Human Resource Development Review*, 18(3), 294–324. <https://doi.org/10.1177/1534484319836315>
- Sweet, K. M.; Witt, L. A. & Shoss, M. K. (2015). The interactive effect of leader-member exchange and perceived organizational support on employee adaptive performance. *Journal of Organisational Psychology*, 15, 49–62.
- Tilson, D., Lyytinen, K. & Sørensen, C. (2010). Desperately seeking the infrastructure in IS research: Conceptualization of digital convergence. *Organization Science* 20(2), 441-460.
- Tratkowska, K. (2019). Digital transformation: Theoretical backgrounds of digital change. *Management Sciences*, 24(4). <https://doi.org/10.15611/ms.2019.4.05>
- Westerman, G., Calmèjane, C., Bonnet, D. Ferraris, P. & McAfee, A. (2021). *Digital transformation: A road-map for billion-dollar organizations*. Capgemini Consulting & MIT Sloan Management.
- Yoonhee, P., Doo, H. L., Woocheol, K. & Hana, K. (2020). Organizational support and adaptive performance: The revolving structural relationships between job crafting, work engagement, and adaptive performance. *Sustainability*, 12. <https://doi.org/10.3390/su12124872>