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Determinants for the Adoption of Educational Technology in Zimbabwean Vocational Training Centres

EUNICE DHOKURA[1], MARIA TSVERE[2] AND SIMBARASHE MUNIKWA[3]

Abstract

This study centres on factors influencing educational technology (EdTech) adoption in vocational training programmes with a primary and particular focus on Zimbabwean vocational training centres (VTCs). The main objective of the study was to determine and critically examine the factors influencing EdTech adoption in vocational training programmes. The study identified the following factors influencing EdTech adoption in these programmes: participant level factors examined include demographics, computer skills and motivation and institutions level factors at very different academic levels. Quantitative data were gathered from students at VTCs, whilst qualitative data were obtained from lecturers and staff, also at VTCs, to complement the quantitative data. The research instruments used were questionnaires, interview guides and observation guides. Both probability and non-probability samples were used. Thus, the target population for this study consisted of 3 500 participants drawn from five VTCs. Research has concluded that two beliefs, perceived usefulness and perceived ease of use have been identified as important user acceptance criteria. The study also found out that participant's desire for vocational learning may also influence motivation and academic achievement. The study recommends that investing in education is a potent means that could be explored to fast-track technological progress, economic growth and boosting citizens' capacities and bridging the gap of educational

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learning and opportunities between learners from different economic backgrounds.

Keywords: adoption and observation**,** institution, participation, motivation, innovation,

INTRODUCTION

Technology has been advancing at a brisk pace than ever before, with the onset of revolutionary technologies like Artificial Intelligence (AI), Cloud Computing, Internet of Things (IoT) and Block Chain. This technological leap has been opening up new opportunities for value creation and enhancing quality of education. Educational technology adoption is the choice exercised by stakeholders, such as students, teachers and institutions, to adopt usage of an innovation for delivering education effectively. Nemoto *et al*. (2010) posit that adopting or rejecting a new technology is based on an individual's perception of the benefits of using the tool to achieve a goal. Plewa *et al* (2012) argue that although technologies are advancing at a tremendous pace, the non-adoption of the same has been due to poor innovation, implementation, high cost, high failure rates, maintenance, poor technological planning and inadequate stakeholder participation. Oyetade and Harmse (2020) are of the opinion that an understanding of the factors affecting an individual's choice to adopt technology is essential both for stakeholders using these technologies as well as creators and developers of such technologies.

During 2020, due to the unprecedented COVID-19 pandemic situation especially within the context of the Global South situatedness, most of the higher education institutions across the world had to switch over to EdTech to conduct classes for the students, who had to learn remotely from their homes. While it is an undeniable fact that COVID-19 accelerated the pace of technology adoption in higher education (HE) worldwide, type of response as well as level of technology adoption varied widely at institution level as well as at individual level, both teachers and students. In some cases, teachers

merely used video conferencing as a viable platform to teach, instead of face to-face teaching, whereas in some cases, teachers adapted their pedagogical practices, by using a range of technology tools to engage the students and make the learning more interesting and interactive. In higher education, most of the teachers enjoy autonomy in teaching and every teacher follows a personalised teaching style and pedagogical entry point. Likewise, the level of acceptance of technology among the students also varied widely. Besides, several urban and rural students faced challenges with regard to lack of availability of appropriate digital devices and limited Internet bandwidth. In addition, there were cyber security vulnerabilities and privacy issues.

Factors influencing technology adoption include participant and institutional characteristics that may have an impact on learner achievement in technology in VTCs. Three classes of participant level variables examined include: demographics, computer skills and motivation. Participant demographics are important to collect and analyse data with a view to understanding the differences between student groups (Schreiber, 2002). Especially in computer related technology courses, males typically have a greater ability and interest in the content than do females (Crombie and Abarbanel, 2000; Green, 2000). The vocational training programmes are taught in institutions at very different academic levels such as high schools, community colleges and universities, as well as non-traditional education locations such as career centres and shelters for the homeless. Adult learners who wish to enrol for the courses can register at any of these educational institutions. Although institutions need to meet minimum predetermined standards to offer the vocational training courses, the differences in terms of technical and instructional resources among these diverse ranges of institutions are inevitable and thus may have an impact on learner achievement (Odanga. *et al.*, 2021). The geographical and geo-political location of an institution, whether urban, suburban, small town, or rural, is expected to have an impact on success due to the differences in

organisational and social environments and the resources available (Barker, 1985; Hannaway and Talbert, 1993; Lee and McIntire, 1999). Although the patterns are not clear, educational inequities in urban institutions suggest that large achievement gaps could exist between participants in these institutions and their peers in suburban and rural institutions (Kozol, 1991; Lee, 2001; Everson and Millsap, 2004;). Research has revealed that one of the most influential factors in learner achievement is the participant's socio-economic status (Walberg, 1984; Bracey, 1995; Verstegen and King, 1998;).

It is against this background that the current study focuses on factors influencing EdTech adoption in vocational training programmes with a primary focus on Zimbabwean VTCs with a view to critically ascertain the impact of the adoption of technology in educational opportunities in vocational training learning contexts.

METHODOLOGY

To supplement the quantitative data, qualitative data were collected from lecturers and employees at VTCs as well as quantitative data from students at those higher learning contexts and facilities. Questionnaires, interview guides and observation guides were the research tools and methodologies employed. The study employed both probability and non-probability. Thus, 3 500 individuals from five VTCs constituted the study's target group. The current analysis, however, also benefited from secondary data was gathered for other objectives (Schiffman and Kanuk, 2000; Linneberg and Korsgaard, 2019; Antoniadis *et al.*, 2022; Lutfi *et al.*, 2023). The study's qualitative data were analysed using narrative analysis. The Statistical Package for Social Sciences (SPSS) version 16.0 was used to code, input and analyse the quantitative data acquired in a descriptive manner.

LITERATURE REVIEW

This section critically focuses on the pertinent literature on the adoption of technology, especially within the context of vocational training. 'EdTech', or education technology, has unquestionably

become the main force behind the advancement of our educational system. It has evolved in every facet of education and it is now a crucial tool for both teaching and learning and assessment (Abbas, 2017). Technology has also improved the effectiveness, efficacy and enjoyment of teaching and learning (*ibid.*.). A startling 96% of instructors, as argued by a recent Smoothwall research, think that technology has increased pupils' interest in learning and studying (*ibid.*). Few surveys suggest that using technology increased students' engagement considerably (Tully and Gregory, 2011).

Contextualising educational demands involves identifying the instructional difficulties that come with using virtual labs in instruction. As averred by Baladoh, Elgamal and Abass (2017) and Lou (2018), there are not enough trained instructors and teachers to teach curricula for EdTech and vocational education training (VET). The second issue is that many EdTech and VET educators and instructors lack proper pedagogical preparation to enable them to teach in regular educational settings. Technology and online pedagogies have only served to adversely compound this problem. As argued by one source, college teaching is a unique profession. In addition, no one is taught how to teach online (Grose, 2020:24). Additionally, instructors require more assistance in managing the integration of high-tech tools into learning environments as they move from face-to-face to virtual and online teaching and learning environments (Jin and Nakayama 2013; Grose 2020;).

The issue of cost of education in VET is another key educational hurdle that must be overcome to incorporate virtual labs into EdTech and VET programmes (Abidi *et al.*, 2019; Jou and Wu, 2012). However, it is noted in several articles that the incorporation of virtual labs in these technical fields could also reduce the amount of expensive lab equipment required, as well as breakage and material costs, thereby reducing overall costs (Alvarez *et al.*, 2017; Baladoh *et al.,* 2017; Ethiragan *et al* .,2020).

A lot of research has been conducted and a comprehensive intellectual corpus has been built and developed on the idea of Educational Technology Professional Development (ETPD) that emphasizes teachers' professional growth as "an essential component to ensure pedagogically sound use of technology in the classroom", as argued by King (2002:284). This literature review's objective is to provide a thorough grasp of this recently developed area of HE research. The ETPD training sessions produce a variety of developed product categories. First, through ETPD programmes, faculty members were given the chance to develop their own resources while in the role of designers. For example, they could redesign a single lesson or course unit to incorporate social networking (Archambault *et al*., 2010) or learner-centred principles (Derting *et al*., 2016). Another illustration is the rise in the quantity of Moodle courses, web-based learning environments and information and communications technology (ICT) pedagogical initiatives created by faculty members by the end of their ETPD programmes (Baya'a and Daher, 2015). Along with initiatives for technology training, physical space and pedagogy have also been revised (Friel *et al*., 2009). Additionally, the design process had an impact on the tools used by faculty members.

As an illustration, Chen *et al*. (2018) concentrate on the continually produced and reviewed resources of a new mathematics teacher educator-researcher. In a similar vein, Hoekstra and Crocker (2015) focus on the development of feedback mechanisms for their jointly created e-portfolio approach. Third, some ETPD training programmes have been co-designed (i.e., collaboratively designed with faculty members), focusing on incorporating principles of good practice in undergraduate education (Friel *et al*., 2009) or on technology integration (Teclehaimanot and Lamb, 2005). Involving faculty members in the design of their own training, Teclehaimanot and Lamb's (*ibid*.) study goal was to reach the "ripple effect" of faculty redesigning their syllabi, revealing interconnections between the designed intervention and generated production. This brings us to the

last group of designed products—research itself—that has been more co-designed in recent years. Design-based research is described as

> "a systematic but flexible methodology aimed to improve educational practices through iterative analysis, design, development and implementation, based on collaboration between researchers and practitioners in real-world settings and leading to contextually sensitive design principles and theories" (Wang and Hannafin, 2005).

Shattuck and Anderson (2013) are of the view that there has been a rise in interest in design-based research among educational researchers over the previous 10 years.

Whatever is being designed, most researchers have stressed the importance of the collaborative dimension of the design process: design has mostly been used within ETPD as a team-based activity (e.g., Dolk *et al.*, 2002; Shattuck and Anderson, 2013; Baya'a and Daher, 2015; Hoekstra and Crocker, 2015; Derting *et al.*, 2016; Becuwe *et al.*, 2017). Foley and Masingila (2014:800) buttress this is because "without such collaboration, interventions are unlikely to affect changes in the real-world context". Even when projects were individually designed to better meet participants' needs and interests, researchers demonstrated how the creation of collaborative communities of learners was concomitant (Seels *et al.*, 2003), or how the design process of a teacher educator was embedded and influenced by different collectives (Psycharis and Kalogeria, 2017). Becuwe *et al.* (2017:159) argue that

> "collaborative design (in teacher design teams) of technology-enhanced lessons has been shown to contribute to the development of competencies necessary to integrate technology in education" .

This is why the engagement of faculty members in design-based activities simultaneously enabled investigation of practice and fostered the creation of communities above the traditional gap between practitioners and researchers (Foley & Masingila, 2014; Triggs and John, 2004).

Vocational training refers to instructional programmes or courses that focus on the skills required for a particular job function or trade. In contrast to traditional, unrelated academic disciplines, vocational training educates students for certain occupations. Vocational training, that is also known as vocational education and training or career and technical education, offers practical, job-specific instructions and can result in certification, a diploma, or even an associate's degree (Mohsin, 2022). Vocational training can be described as training that emphasizes knowledge and skills needed for a specific trade, craft or job function. Earlier, this training was confined to certain trades like welding, automotive services and carpentry but the horizon of vocational training has expanded with the evolution of time (Austin, 2022).

Finally, whereas Archambault *et al*. (2010) suggest involving the faculty in the whole instructional design process, including the implementation phase, Mourlam (2017) notes that design-based research typically concluded prior to the implementation of instruction. The process of learning, planning and implementing was recently expanded by Jaipal-Jamani *et al*. (2018) till the mentoring phase, during which teacher educators take on a technological leader's role in ETPD workshops.

INFLUENCING FACTORS OF E-LEARNING ADOPTION AMONGST STUDENTS IN A DEVELOPING COUNTRY: THE POST-PANDEMIC

E-learning is the consequence of the merging of technology and education and it is now a highly efficient educational medium. Therefore, this study explores the notion of continuous usage of online learning in education. Here, the study critically examines the key elements influencing whether Bangladeshi university students will continue with the usage of online learning following the outbreak. It explores a novel setting, extending the UTAUT model and laying the groundwork for upcoming scholars. The UTAUT3 model served as the theoretical foundation underpinning the analysis of the relationship between components using structural equation

modelling. Additionally, this research was conducted as soon as face-to-face education resumed following each pandemic lockdown. As argued by the study's findings, among the independent variables, performance expectancy, social influence and behavioural intention were the most important indicators of students' intention to continue use e-learning systems after the COVID-19 pandemic. Moreover, voluntary use on social influence was also found to be significant. This is one of the first studies to investigate a new technical service (e-learning services) in the extended framework of UTAUT3 model and gives an understanding of reasons as to why students keep using e-learning following the epidemic. Furthermore, the findings of the current study provide an innovative perspective for Bangladeshi university administration and policy-makers to assess and apply to ensure the successful application of e-learning technologies.

FACTORS INFLUENCING THE IMPACT OF TECHNOLOGICAL INNOVATIONS ON LOCALISED ADULT EDUCATION

Mobile learning (m-Learning) is one pedagogical method of education that allows learners to learn, experience and engage with the educational content irrespective of their geographical location. It has been identified that modern mobile phones are designed to promote the learning experience and supports m-Learning. This research article concentrates on providing an insight into the various factors that can have an impact of technological innovations like m-Learning on Education in general, but adult education in particular. The feasibility study reveals that many of them strongly agree towards M-earning and have a positive perception towards collaborative learning. The result of the survey indicates that people prefer user-friendly educational applications that are colorful, self-explanatory, simple and easy to navigate. They are not much interested in interactive sessions, especially when it comes to adult education, probably because they want to learn the lessons at their own pace without much of exercises. Hence, from the analysis, it can be shown that some of the most important factors that can influence m-Learning depend ultimately on the design, features and

implementation of the mobile application. Future research will progress on designing, integrating and implementing a simple M-earning framework which will help in further understanding the completeness of m-Leearning.

A study conducted by Mahfoud and Markus (2014) on factors influencing the acceptance of E-learning adoption in Libya's HE institutions, stressed the growing influence of technologies on all aspects of life, including the education sector, which aspect requires developing countries to follow the example of developed countries and adopt technology in their education systems. Libya has been able to boost its economic and educational position over the years and this brings it to the concern of applying modern methods of learning into its HE system. E-Learning has been advocated by several university professors and researchers as one of pertinent methods in the education system in the current society context of busy schedules and dual responsibilities of adult learners. However, due to many cultural, governmental and technological reasons, the state of e-Learning in Libya's HE has not been to an adequate level. This article aims to show the outcomes of several studies, which discovered the effect of national and international ethos and methods to education on the usefulness of manipulating, applying and utilising e-Learning schemes and machinery in Libya's HE institutions. The study advanced an inquiry form, which was completed by ripe Libyan students registered for PhD education in the United Kingdom, who are also permanent professors at the Universities of Tripoli, Garyounis, El-Zawia and Aljabal-Algharbi. The measurable and qualitative inquiry of the replies shows numerous complications connected to the utilisation of e-Learning and ICT) in Libyan universities.

Factors influencing technology adoption include participant and institutional characteristics that may have impact on learner achievement in technology in VTCs.

PARTICIPANT LEVEL FACTORS

Three classes of participant level variables examined include: demographics, computer skills and motivation. Participant demographics are important to collect and analyse to understand the differences between student groups (Schreiber, 2002). Especially in computer related technology courses, males typically have a greater ability, facility and capacity and interest in the content than do females (Crombie and Abarbanel, 2000; Green, 2000).

Two demographic factors influencing the use and adaptation of technology, especially in VET learning contexts, are age and job status. Age is an important factor which may influence an adult learners' achievement. Due to cognitive development and the amount of academic and life experience at different ages (Justice and Dornan, 2001), older learners are expected to perform better than younger learners. A participant's employment status might also be expected to influence their achievement in adoption of EdTech in vocational training programmes. At the college level, prior research suggests that students with full-time jobs, academically achieve less than students with a part-time job or no job at all (Paul, 1982; King and Bannon, 2002). Computer skills, the second participant level factor, are important abilities that could enable participants to learn more effectively in computer courses. The more general knowledge of computers which the participants of the programme have, the more likely they will be able to master the new networking knowledge (Thompson and McGrath, 1999; Kennedy, 2000;Cashion and Palmieri, 2002). Motivation is the third set of participant level factors that were considered. An individual's beliefs, goals and expectations are directly related to being engaged or disengaged in learning. Many studies have linked motivation and engagement to individual achievement (Eccles and Wigfield, 2002). Individuals who place a greater value on learning the material and have greater expectancy to be successful in a course are more likely to achieve at higher levels (Wigfield and Eccles, 2000). Long-term goals are also important. A participant's career goal is one example of a long-term-goal. Those who have selected a career closely related to an educational programme tend to perform better than those who are indecisive about their goals (Haislett and Hafer, 1990; Alpern, 2000). A participant's desire for lifelong learning may also influence

motivation and academic achievement. Adult learners with a more positive attitude towards lifelong learning tend to be more persistent, more self-directed and more self-confident (de la Harpe and Radloff, 2000). They efficiently use cognitive strategies to maximise their learning (Zimmerman and Martinez-Pons, 1992).

INSTITUTIONAL LEVEL FACTORS

In addition to standard educational settings like high schools, community colleges and universities, the vocational training programme is also taught in non-traditional learning environments, including career centres and shelters for homeless. These institutions offer education at very varied academic levels. Adult learners can sign up for classes at any of these educational institutions if they wish to pursue the courses. Although institutions must meet minimum requirements before they can offer vocational training courses, there will inevitably be differences in the technical and instructional resources available across these various institutions. As a result, these differences may influence learner achievement (Odanga. *et al.*, 2021). Due to the variations in organisational and social settings and the resources available, the location of an institution—urban, suburban, small town, or rural—is anticipated to have an impact on its likelihood of success (Barker, 1985; Hannaway and Talbert, 1993; Lee and McIntire, 1999). Socioeconomic status could be approximated as a function of whether one lives in a financially underdeveloped area. Traditional students are anticipated to perform at a lower level than their counterparts in more economically developed regions, such as empowerment zones and entrepreneurship communities (Tajalli and Opheim, 2005). It is reasonable to assume that pupils who attended schools in economically underprivileged areas will fare worse than students from other areas.

Kemei *et al*. (2023) critically examine the factors that contribute to the successful execution of high-quality vocational training programmes and the difficulties associated with doing so at Kenya's public vocational training institutions. As argued by the study, putting money into education is a powerful strategy that may be investigated to hasten economic development, technical advancement and capacity building among residents. This was done to raise the standard of vocational training institutes, making graduates more employable and in line with market demands.

FINDINGS

Since eigen values were greater than 1, effects were divided into three categories: perceived utility, perceived ease of use and self-efficacy. The chosen variables were responsible for 65% of the variance. The Kaiser-Meyer-Olkin value was 0.65, indicating that the approach for factor analysis should be used. The significant result from Bartlett's test of sphericity (2 = 3764.751; p0.0001) further affirmed the suitability of this choice. Perceived Self-efficacy: 0.787; Perceived Ease of Use: 0.929; and Perceived Usefulness: 0.685, were the Cronbach's alpha coefficients. Table 1 contains the rotated component matrix with the factor loadings.

Table 1: *Factor Loadings of PEOU, PU and self-efficacy* (Grozeva,. and Dimitrov, 2012)

Factors	**Loadings**
Perceived ease of use	
I find a new adoption easy to use	0.821
My interaction with new technologies is clear and understandable	0.795
I find it easy with new technologies to do what I want to do	0.860
Perceived usefulness	
Using a new technology increases my productivity	0.641
I find new technology useful in my studies	0.619
Using a new technology improves my training performance	0.565
Using a new technology improves my effectiveness	0.731
Perceived Self-efficacy	
I believe I can easily use new technologies	0.919
I believe I can easily become skilful in new technologies	0.901
I believe I can easily learn about new technologies	0.993

Using inferential statistics (t-tests and ANOVA tests), it is investigated how the three elements influencing the adoption of a new technology are impacted by personal attributes. These tests suggest that women are more likely to accept new technology than men because they think it is simpler to use (t=2.756 df= 695 and

p=0.0060.05). Since t=1.560 df=516.783 and p=0.119>0.05, the statement "Males are more self-efficient in using a new technology than females" was not supported.

The degree of education a worker has influences how confident they feel about their ability to adapt to new technology, especially within VET learning contexts. The perceived self-efficacy of students in adopting a new technology rises with education level. It is expected that different variances exist and F(2.693)=36.291 p 0.005 shows that there are disparities in the means of the groups of students with various educational backgrounds. Secondary school graduates reported having a poorer opinion of their own abilities than graduates with bachelor's degrees (mean: -0.5324840), who in turn had a worse perception of their own abilities than post-graduate students (mean: 0.4639108).

The perceived usability of new technology is positively correlated with students' educational attainment. Assuming equal variances, F (2.693) =4.125 p 0.005 shows disparities in the means of groups of students with various educational backgrounds. Pothook analysis specifically found differences in students' perceptions of new technologies as being simple to use between secondary school graduates and graduates with bachelor's degrees (mean: 0.0256410 > -0.2366863) as well as between secondary school graduates and students with post-graduate studies (mean: 0.0972040 > -0.2366863).

The perceived value of new technology is positively influenced by students' educational attainment. Equal variances are not expected, as shown by the discrepancies between the means of groups with various levels of education (F (2.693) =6.964 p0.005)). Post-hoc study demonstrates that students from various educational backgrounds adopt behaviours differently. Students who have bachelor's degrees and high school graduates have distinct views on what is useful. Compared to secondary school graduates, those with bachelor's

degrees thought new technology adoption was less beneficial (mean: 0.2897110> -0.0931591).

The impression of self-efficacy among students is adversely connected with age. In comparison to younger pupils, older students believe they are less proficient users of new technologies. Assuming equal variances, F (2.693) =10.253 p 0.001 shows disparities in the means of groups of students from various age groups. The perception of the pupils' self-efficacy declines as they get older. The sense of self-efficacy among students in the age group 51-65 is distinct from that of students in the age groups 41-50 (mean=–0.38104), 31-40 (mean=–0.2913233) and 35-40 (mean=–0.1058948). The notion of self-efficacy is at its maximum among young students (ages 18 to 30).

Students' perceptions of ease of use are adversely connected with age. In comparison to younger pupils, older students believe new technology to be more difficult to utilise. Equal variances were assumed and F(2.693)=6.151 p 0.001 shows differences between the means of groups of students from various age groups in terms of how easily new technology were seen to be used. There are differences in the age group 18-30 compared to age groups 41-50 and 5–65. Compared to their older classmates, younger students find new technologies to be simpler to utilise.

Students' responses to a questionnaire on their mood were harnessed in an exploratory factor analysis (EFA) to see if mood is one of the factors influencing their adoption of ICT. Principal Component Analysis (Hair *et al.*, 2006) was used as the extraction technique and the Varimax method was used to improve the model's capacity for explanation. Since eigen values were more than 1, effects are divided into two variables (positive affectivity, negative affectivity). Almost half (48.9%) of the total variation was explained by the chosen variables. The Kaiser-Meyer-Olkin value was 0.725, indicating that the technique for factor analysis should be used. The significant

result from Bartlett's test of sphericity (2 = 1773.675; p0.0001) further affirmed the validity of this.

ANOVA analysis was also used to compare student groups' perceptions of their own efficacy. Equal variances were not assumed and the hypothesis was not supported by F (1.695) =0.470, p>0.05. Additionally, the hypothesis was not supported by an ANOVA study comparing groups and their perceptions of how simple it was to adopt a new technology, that showed F (1.695) =0.367 p>0.05, assuming equal variances.

Table 2: Factor Loadings of mood measures

Factors	Loadings
Negative affectivity	
I feel afraid	0.702
I feel nervous	0.663
I feel upset	0.615
Positive affectivity	
I feel excited	0.714
I feel interested	0.802

The findings did not support the hypothesis that students' psychographic state, represented by mood, influences the sharpness of their self-efficacy and their evaluation of the simplicity and utility of a new technology.

Simply put, student factors like a low reading culture, peer pressure, exam cheating, irregular attendance, interest in learning, parental influences, disobedience to rules and regulations at school and a lack of required learning materials like textbooks all have an impact on the quality of vocational training programmes. The competency of the lecturers, their methods of instruction, their coverage of the syllabus, their timeliness in class and the suitability of their methods

of instruction are the main elements that influence the quality of vocational training programmes.

DISCUSSION

Women are generally characterised, within the scheme of gendered stereotypes cultivated about them, as "nurturing" and influenced by social factors and environmental constraints (Gefen and Straub, 1997; Peng *et al.,* 2023). They seek intimacy, support and consensus. They prefer interpersonal aspects and are good at providing service. When exploring the level of education, the findings highlighted that respondents with a bachelor's degree or above had a much higher adoption impact than those less qualified and that the higher the level of qualification, the more the impact on adoption. The education level has an impact on the three well-known factors that affect the adoption of new technologies: perceived self-efficacy, perceived ease of use and perceived usefulness. The improved usage of new technologies comes through education. Agarwal and Prasad (1999) agree with Shamout *et al*. (2022) in concluding that education level was mediated by PU and PEOU. Given that world over, most of the developed countries are operating in an information-intensive age, relying heavily on information technology to acquire processes and deliver the appropriate information to students, customers and users, the level of education is important in adopting new ICT.

Students' maturity, a factor that is supposed to add wisdom to human experience, does not increase the employee's favourable attitude toward information technology (Babcock *et al*., 1995). Agarawal and Prasad (1999) concur with Geet *et al* (2023) in concluding that PU and PEOU mediate the relationship between age and attitude. In 2017, the Zimbabwe's National Statistical Agency (ZIMSTAT) conducted an ICT census to document access to and use of ICT in education institutions (Zimbabwe National Statistics Agency, 2017). It also aimed to identify geographical areas with limited use of ICTs and key barriers to ICT use in education. Five out of 11 objectives in the National ICT Policy (2016) relate to ICT in education

and human resources (Ministry of ICT, Postal and Courier Services, 2016). The policy articulates the aim of providing connectivity in all schools to bridge the urban-rural digital divide and to enhance teaching and learning using technology and VTCs are not exceptional.

The objectives and strategies include: working with relevant institutions and government departments to develop programmes that increase ICT human resource capacity and skills; facilitating the deployment and exploitation of ICTs in the education system from primary school upwards; working with relevant ministries to include ICT training and education in schools, colleges and universities; providing equitable access to ICT-enabled education and training in all parts of the country, including disadvantaged communities; promoting e-Learning and use of e-Learning materials throughout Zimbabwe; making use of the Universal Service Fund (USF) to boost connectivity for remotely located schools; to facilitate the National e-Learning Programme and encouraging, promoting and applying research and development in ICTs in society. The ICT Policy for Primary and Secondary Education (2019-2023) aligns with the Constitution, the Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZIMASSET), the Education Act, the National Policy for ICT, the Education Sector Strategic Plan and other key documents that relate to access to education and training. The vision for the ICT Policy for Primary and Secondary Education is: "ICTs being used effectively and efficiently throughout the education sector enabling all learners to achieve their full potential and become productive responsible citizens" (Ministry of Primary and Secondary Education, 2019). Additionally, the policy states:

> "The Government of Zimbabwe through the Ministry of Primary and Secondary Education commits to the use of ICT as an enabler for education to create, promote and sustain the development of a knowledgeable, innovative and creative society that ultimately supports the national agenda of attaining a knowledge-based society" (*ibid.*).

CONCLUSION AND RECOMMENDATIONS

Higher Education, hitherto, has been advancing at a snail's pace in EdTech adoption. COVID-19 changed the situation dramatically and

enabled acceleration of its digital transformation, that is bound to gain more traction in the days to come. It will need more theoretical and empirical research studies to facilitate and speed up the process. In that context, this study may be of help to all the stakeholders, who include students, teachers, institutions and technology providers. The provision of high-quality EdTech and education in VTCs is very important. Around the world, all economically advanced democracies place a high value and premium on the quality of their vocational education and training. It is increasingly recognised that policy in practice varies significantly as argued by national contexts. VTCs are important to the economic growth of the country; hence, they require appropriate EdTech to redirect their path. This may be done through various legislative developments in Zimbabwe, that is: government agencies, non-government agencies and EdTech initiatives. It is recommended that future researchers look at the competency of teachers in the use of different types of EdTech in vocational training programmes. In Zimbabwe, there is need to carry out further studies on the competency of teachers in the use of different types of EdTech in vocational training programmes as a developing country, compared with developed countries. Such studies are most desirable as a way of addressing the pertinent problems currently bedevilling VTCs in Zimbabwe. .

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