Acceptance and Use of Automated Learning Platforms in Adult Education Within the Private Security Training Industry

Walter Matli
https://orcid.org/0000-0003-3440-900X
University of South Africa

Mashako Agnes Mathebula
University of South Africa
41246268@mylife.unisa.ac.za

Abstract

This article presents a comprehensive overview of the acceptance and use of automated learning support platforms within adult education, particularly focusing on the private security training sector. By employing a systematic review methodology, the article synthesises existing research to evaluate the factors that influence the adoption of such platforms among adult learners. The review identified and mapped articles using specified inclusion and exclusion criteria to achieve this. A number of publications were included for in-depth analysis to address the issue under investigation. We explored the unique aspect of technology integration in a traditionally hands-on field of study and assessed the effectiveness of these automated systems in enhancing the learning experience, engagement, and competency of adult learners in security training programmes. In alignment with the unified theory of acceptance and use of technology (UTAUT) model, we discuss the behavioural intention to use technology, perceived ease of use, and its perceived usefulness. The review also addresses the challenges and resistance faced during the adoption process and the potential for enhanced scalability, accessibility, and personalised learning pathways that automated platforms can offer. The findings suggest that, while there is a positive trend towards embracing automated learning, certain barriers, including resistance to change and the need for technological literacy, must be overcome to maximise the potential of these platforms. The article concludes with strategic recommendations for educators, platform developers, and policymakers in the private security training sector to facilitate a more effective and widespread adoption of automated learning support systems.

Keywords: adult education; unified theory of acceptance and use of technology; learning support; security personnel; private security sector; education and training

UNISA university of south africa PRESS
Commonwealth Youth and Development
Volume 23 | Number 1 | 2026 | #17643 | 19 pages

https://doi.org/10.25159/2663-6549/17643
ISSN 2663-6549 (Online), ISSN 1727-7140 (Print)
© Author (s) 2026

Published by Unisa Press. This is an Open Access article distributed under the terms of the Creative Commons Attribution-ShareAlike 4.0 International License (https://creativecommons.org/licenses/by-sa/4.0/)

Introduction

The acceptance and use of automated learning platforms in adult education, particularly within the private security training industry, represent a critical juncture in the evolution of workforce development. As Cakula et al. (2015) highlighted, the inadequacy of knowledge exchange between educational institutions and private enterprises has been a pervasive challenge. This is particularly pertinent in specialised fields like private security training, where the dynamic and practical nature of knowledge necessitates an andragogy approach that emphasises problem definition and collective discourse, as advocated by Santos-Menese et al. (2023).

The integration of automated learning support platforms in adult education, especially in the private security training sector, introduces an array of challenges and opportunities that warrant comprehensive examination. It is essential to conduct a critical inquiry into the factors that influence the adoption of these technologies by adult learners in this sector, and to identify and address potential barriers to implementation. This may encompass a range of issues such as resistance to change, access to resources, lack of technological infrastructure, or insufficient skills among the target users. Furthermore, it is crucial to explore the impact of automated learning platforms on the effectiveness of training outcomes and their ability to address the educational needs of adult learners in private security training.

It is also relevant to acknowledge the importance of studying learner behaviour, particularly in the context of adult education, as highlighted by Noskova et al. (2021). Understanding whether automated learning platforms provide additional support to adult learners can significantly enhance the flow of knowledge from academia to the industry and vice versa, a vital aspect in the rapidly changing landscape of the private security sector.

In the private security training industry, understanding the successful adoption of automated learning support systems for adult learners is particularly essential. This industry's workforce often comprises adult learners who are either updating or upskilling to meet evolving job demands, and as such, effective learning support becomes key to professional competence and operational efficiency. To comprehend the factors that influence the successful adoption of automated learning support systems among adult learners in the private security training industry, the unified theory of acceptance and use of technology (UTAUT) provides a robust framework. This theory takes into account various variables such as performance expectancy, effort expectancy, and social influence, thus offering an effective lens through which to understand how adult learners might receive such a system. By applying the UTAUT to the context of private security training, this review aimed to establish the need for a stronger academia-industry collaboration facilitated by technology, with a specific emphasis on implications for adult learners in this sector.

The existing body of literature demonstrates the versatility and applicability of the UTAUT framework in various fields of information systems, including e-government, banking, and organisational management, as evidenced by studies conducted by Naranjo-Zolotov et al. (2018) and AbuShanab and Pearson (2007). Extending the UTAUT to comprehend the role of automated learning platforms in providing additional support to adult learners in the private security training industry, particularly in developing countries such as South Africa, is a logical continuation of this line of research. Therefore, this qualitative review aims to contribute to this extension of the UTAUT, thereby providing valuable insights into the acceptance and use of automated learning platforms as extended support in adult education within the private security training industry.

Literature Review Methodology

This study adopted a literature review approach to investigate the acceptance and use of automated learning platforms. A comprehensive search was conducted, primarily utilising the Scopus database, supplemented by Google Scholar. The search sought to identify publications related to the UTAUT and its application in various contexts, including adult education and technology integration.

While no specific publication date filters were applied, the search focused exclusively on research articles and review articles published in English. This inclusion criterion ensured that the analysis considered high-quality, peer-reviewed research while acknowledging the limitation of excluding non-English publications.

The selected literature aimed to provide insights into the factors that influence the adoption and use of technology systems within private security companies. Specifically, this review explored the unique challenges and opportunities presented by integrating technology into a traditionally hands-on field. By analysing existing research, this study assessed how automated learning systems can enhance the learning experience, engagement, and competency of adult learners participating in security training programmes.

Related Work

The UTAUT has become a widely applied model in several contexts, such as understanding business practices, government, and societal settings. For example, this includes mobile banking (AbuShanab and Pearson 2007), e-commerce (Kabanda and Brown 2017; Verkijika 2018), entrepreneurship (Özsungur 2019), e-government (Camilleri 2019; Naranjo-Zolotov et al. 2018; Verkijika and De Wet 2018), and searching for information (Abubakari et al. 2020). Similarly, the UTAUT theory has also been extended to the education and training space (Nair et al. 2015) and in different contexts. Several studies have applied the UTAUT model in various contexts of adult learning training, just as this study intends to contribute with respect to education and training in the private security sector. For example, Yang et al.'s (2023) investigation

into the acceptance and use of smartphones in an older population demonstrates that behavioural intention and facilitating conditions consistently exert a significant effect on actual device use, both pre- and post-training; meanwhile, performance expectancy affects behavioural intentions primarily before the training occurs. Yang et al. (2023) contend that existing literature has yet to explore how technological training influences the technology adoption intentions and patterns of older adults.

Most of the studies extended the UTAUT in basic schooling (Mohamed and Hassan 2023) and university education (Alkhwaldi 2023). For example, the study by Mohamed and Hassan (2023) applied the UTAUT to identify the determinants that impact the use of educational technology in secondary schools in Mogadishu, Somalia, whereas, in Jordan, Alkhwaldi (2023) investigated the elements that influence user intentions regarding using metaverse technology in higher education settings. The metaverse, an interactive virtual realm where users engage through avatars, holds substantial promise across various fields. Alkhwaldi (2023) acknowledged that while the metaverse fosters novel forms of interaction among users, such as students, there is a notable lack of insight into the factors driving its adoption and utilisation in higher education, especially within developing countries.

Other studies have extended the UTAUT in using platforms such as YouTube and massive open online courses (MOOCs). The increasing reliance on digital instruments has overhauled pedagogical techniques, with entities like YouTube serving as treasure troves of instructional video resources (Guillén-Gámez et al. 2023). For example, in their study, Guillén-Gámez et al. (2023) created a tool to assess how teachers' intentions to use YouTube affect their digital proficiency in finding and choosing information, sharing content, interacting with other users, and producing educational materials. The study not only outlined the variety of scenarios where YouTube can be integrated into education but also sought to identify which aspects should be bolstered to increase the frequent use of readily accessible digital educational resources across various educational levels and settings (Guillén-Gámez et al. 2023). Irianto et al. (2023) used the UTAUT in their study to analyse the deployment of MOOCs in Indonesia and found that MOOC training offers efficiency and effectiveness because of its flexibility and convenience for learners. Irianto et al. (2023) suggest that to facilitate a seamless learning experience with minimal interruptions, MOOCs should offer comprehensive resources and support services to both instructors and students. This parallels the principles of the UTAUT, which highlights the importance of facilitating conditions and ease of use in the adoption of new technologies.

Other studies have looked at extending the UTAUT to understand students' intentions (Huang et al. 2023; Hunde et al. 2023) and the behaviour of actors in several different countries (Tian and Yang 2023). For example, in Ethiopia, Hunde et al. (2023) discovered that factors such as the ease of using e-learning platforms, the enjoyment students perceive, and the existence of supportive conditions play significant roles in shaping students' intentions to engage with e-learning. Hence, it is crucial to encourage

the integration of information and communication technology in education by ensuring the availability of resources and the deployment of user-friendly, interactive systems. In China, Huang et al. (2023) note that although the adoption of technology by teachers has garnered more focus in the digital era, there has been insufficient exploration into the technology adoption among Chinese ethnic minority English teachers, specifically looking at the factors that affect their intention to use technology. Huang et al. (2023) uncovered that teachers' perceived value of technology policy, anticipated outcomes from using technology, and the impact of social factors are critical precursors to their intentions to employ technology. Regarding intention, Tian and Yang (2023) point out that the determinants influencing students' usage behaviours and the subsequent outcomes of employing this technology remain ambiguous. The escalating interest in interpretation technology within the training industry has highlighted its potential integration into interpreter training programmes. In their research on interpretation technology, Tian and Yang (2023) identified that students' actual application of such technology is most strongly determined by their behavioural intentions and, subsequently, by the enabling conditions present. They discovered three particular factors that exert a positive and meaningful impact on the students' intentions; among these, the compatibility of the task with the technology and the anticipation of improved performance exert the greatest effect whilst the third factor had less of an impact. Tian and Yang's (2023) study revealed that the anticipation of improved performance positively influences student motivation to engage in interpretation learning, which in turn can impact their actual usage behaviour. However, the expected ease of use and the presence of supporting conditions did not significantly explain their intent to use technology. Additionally, the perceived cultural importance held by the teachers significantly shaped their views on technology policies and directly influenced their intentions to integrate technology.

Several studies have extended the UTAUT to virtual reality (VR) and augmented reality in education settings. For example, Alotaibi (2023) undertook a study to evaluate how users accept augmented reality for educational and training purposes, using the UTAUT model to gauge this acceptance. In addition, Ustun et al. (2023) addressed a research deficiency in virtual reality by creating a credible and dependable scale to assess students' acceptance and use of educational VR, grounded in the UTAUT model. Their results confirmed that the UTAUT-based educational VR acceptance scale proved to be a valid and trustworthy tool for measuring how students accept and utilise VR systems.

Theoretical Perspectives and Discussions

It is evident from the literature that the original technology acceptance model (TAM) formulated by Davis (1989) has significantly influenced subsequent research in the information and technology domain. The TAM has provided valuable insights into the factors that influence the acceptance and use of technology, particularly emphasising the significance of perceived usefulness and perceived ease of use, as pointed out by Lah et al. (2020). However, it is important to note that the TAM has also faced critique; Pearson and Bailey (1980) highlighted that the measurement of computer user

satisfaction has been criticised for its lack of consideration for the actual benefits to the user long before TAM was coined..

In response to such criticisms, the UTAUT model was introduced by Venkatesh et al. (2003). This expansion of the TAM aimed to provide a more comprehensive understanding of technology adoption and user behaviour. The UTAUT model has gained widespread recognition and has been used in multiple research studies to measure the acceptance of new technology, especially in the recent context of the COVID-19 pandemic, which has accelerated the reliance on technology for many individuals and organisations.

While the UTAUT has proven to be a valuable model with high explanatory power, as acknowledged by Etemadi et al. (2020), there is still room for further advancement and extension of the model. As technology acceptance is a complex and evolving phenomenon, it is essential to continually refine existing models to ensure their applicability across diverse fields. Therefore, as Venkatesh and Davis (2000) emphasise, extending the UTAUT model and integrating insights from various related theories and models, such as innovation diffusion theory and motivation models, is crucial for its continued relevance and effectiveness in understanding users' mindsets and acceptance behaviours towards technological advancements.

In the context of the adoption of automated learning platforms in adult education within the private security training industry, it is essential to adopt a theoretical perspective that comprehensively addresses the complexities and intricacies of technology acceptance and usage behaviour. One such framework that holds significant relevance to this scenario is the UTAUT. The UTAUT, as proposed by Venkatesh et al. (2003), integrates various factors that influence the adoption of technology, including performance expectancy, effort expectancy, social influence, and facilitating conditions. These factors are particularly significant in understanding the acceptance and utilisation of automated learning platforms by adult learners within the private security training industry. The framework emphasises the importance of perceived usefulness and ease of use, social influences, and contextual support, aligning with the unique challenges and requirements of this specific educational context.

The theoretical framework outlined by Urick (2020), which focuses on generational impacts in the context of technology adoption, complements the UTAUT model. The presence of diverse generational cohorts within the private security training industry necessitates an understanding of how different age groups perceive and interact with technology. Urick's (2020) findings highlight the challenges related to intergenerational communication and technological adoption, thereby underscoring the need to address these issues within the framework of automated learning platform implementation.

Augner's (2020) insights on the digital literacy of older adults further contribute to the theoretical foundation by challenging prevailing stereotypes and emphasising the

potential for technology adoption among populations perceived as less technically adept. This perspective aligns with the UTAUT model by emphasising the significance of perceived benefits and positive impacts on well-being and professional development for adult learners, thereby reinforcing the importance of designing intuitive and accessible technology-enhanced learning platforms.

The UTAUT model effectively encapsulates the wide array of motivational factors driving technology adoption, aligning closely with core educational theories that address learning within varied contexts, namely behaviourism, cognitivism, constructivism, connectivism, and humanism. In relation to behaviourism, the UTAUT's focus on performance expectancy, or the belief that technology will enhance performance, connects with the behaviourist emphasis on reinforcement. Just as behaviourism uses positive reinforcement to encourage certain actions, the UTAUT suggests that technology users are more likely to adopt new systems if they anticipate tangible gains, thereby reinforcing its use (Venkatesh et al. 2003; Venkatesh 2022). With regard to cognitivism, the UTAUT's (effort expectancy) component which pertains to ease of use, mirrors cognitive theories that focus on information processing and mental effort. Cognitivism advocates for learning environments that do not overload cognitive capacity, thereby enabling learners to engage with information more effectively. When technology aligns with these cognitive capabilities and does not demand excessive mental effort, users are more likely to accept and use it effectively (Ertmer and Newby 2013).

In the case of constructivism, the UTAUT's facilitating conditions, external factors that support technology use, relate to constructivist principles which emphasise that learning is shaped through environmental interaction. Constructivism advocates for active, context-based learning, and the UTAUT similarly acknowledges that technology adoption relies on the availability of supportive resources and infrastructure. In academic settings, institutional support and resources align with the constructivist approach, creating learning environments that enhance user engagement (Vygotsky 1978). With regard to connectivism, the UTAUT's social influence reflects key principles in a modern, networked learning landscape, where knowledge is peer-driven and exists across interconnected networks. Connectivism posits that knowledge flows between connected nodes, and the peer and mentor influences acknowledged by the UTAUT resonate with this concept, encouraging learners through community acceptance and shared input (Siemens 2005).

Lastly, humanism is indirectly supported by UTAUT, as it underscores user experience and satisfaction, reflecting the humanistic focus on personal growth and self-actualisation. Humanism, which centres on intrinsic motivation and personal development, is relevant as it positions technology adoption as a path to self-empowerment. When technology is intuitive and aligns with individual goals, users feel more motivated to engage and grow within a supportive framework (Maslow 1943). By applying the UTAUT to automated learning systems in the private security training

context, we bridge behavioural, cognitive, constructivist, connectivist, and humanist elements, demonstrating the model's depth and relevance in promoting technology acceptance across educational environments.

To consolidate the theoretical perspective, it is essential to emphasise the centrality of problem definition in problem-based learning within the private security training industry. This entails overcoming misconceptions about the digital capabilities of adult learners, especially in the context of technology adoption. By establishing a direct link between problem definition in problem-based learning (PBL) and the UTAUT framework, the significance of an informed understanding of the needs and capabilities of adult learners in the private security industry becomes apparent.

Building on the foundation of precise problem identification as proposed by Dimitrescu et al. (2015), it is essential to address the specific educational challenges faced by adult learners in the private security training industry. This approach aligns with the UTAUT model by acknowledging the need for tailored technological solutions that bridge the gap between learners' present skills and their targeted competencies. Automated learning support platforms, when designed to accommodate the nuanced needs of adult learners and the rigorous demands of security training, can significantly enhance the effectiveness of training and skill development in this industry.

UTAUT posits four key constructs that predict user acceptance of technology: performance expectancy, effort expectancy, social influence, and facilitating conditions. To effectively encourage adoption among adult learners within the private security training industry, educational providers and trainers must ensure that:

Performance expectancy in the context of technology acceptance is centred on the user's belief that engaging with a particular technology will enhance their job performance. This is predicated on the premise that the technology in question will meet, if not exceed, their anticipated outcomes in executing work-related tasks. In the domain of private security training companies, it is essential that any online training platform be viewed not merely as a theoretical repository but also as a practical tool that imparts skills directly applicable and advantageous to the industry. Nevertheless, it is important to acknowledge that despite these expectations, pragmatic constraints—such as limited infrastructure, budgetary limitations, or varying levels of technological proficiency—may hinder technology adoption within private security training companies. Thus, it is essential for such platforms to address and mitigate these barriers to foster technology acceptance and to ensure the realisation of performance expectancy among users.

Effort expectancy is concerned with the degree of ease associated with the use of technology. It hinges on the user's perception that engaging with the technology will be free of excessive effort, particularly in terms of its user-friendliness. For private security training providers contemplating the introduction of automated learning platforms, a

keen understanding of their adult learners' profiles is essential. This demographic analysis should account not only for basic computer literacy but also for the diverse experiences and backgrounds that may characterise adult learners' interactions with technology.

Thus, any automated learning platforms considered should prioritise intuitive navigation and simplicity of design to minimise technical barriers and cater to the spectrum of digital competencies within the adult learning population. This inclusivity in user interface and experience design is crucial, as it directly correlates with the willingness of adult learners to engage with the platform and, by extension, impacts the effectiveness of the technology in achieving educational objectives. It is incumbent upon private security training companies and their technology partners to ensure that technological solutions are not only robust in capability but also accessible, thereby facilitating a smooth transition to and ongoing engagement with automated learning systems.

Social influence within the UTAUT model is predicated on the extent to which individuals perceive that important others believe they should use a particular technology. This construct illuminates the interplay between personal judgement and the normative pressure exerted by the collective attitudes of peers, colleagues, and societal norms regarding the use of technology. For private security training organisations navigating the complexities of adult education, it becomes essential not to prematurely form judgements about the technological capabilities or preferences of learners without a comprehensive understanding of their demographic and psychographic profiles. It is equally critical to consider the technological infrastructure and resources accessible to learners in their respective locales. Variations in infrastructure, such as internet connectivity, bandwidth availability, and access to hardware, can significantly impact the feasibility and effectiveness of online learning initiatives.

Therefore, there must be an informed and proactive approach within the private security industry to cultivate a culture that champions online learning as a strategic investment in professional development. The sector's stakeholders—including companies, trainers, and the learners themselves—should be engaged in fostering an environment that recognises and respects the adoption of online learning platforms as a legitimate and advantageous path to skill enhancement and career advancement. This involves not only the promotion of online education but also the necessary support and resources to ensure equitable access and optimal learning outcomes.

Facilitating conditions are critical determinants that influence an individual's ability to effectively use technology. They encompass both organisational support structures and the broader socio-technical environment that enables or constrains actual technology use. This multifaceted construct considers aspects such as the availability of technical infrastructure, accessibility of support services, and the congruence of existing

workflows with the technological intervention. Within the context of private security training enterprises, it is essential to acknowledge the infrastructural and institutional prerequisites that underpin successful technology adoption. Particularly for adult learners who might be dispersed across varying geographical regions with disparate cultural contexts, these considerations become paramount. It is incumbent upon the training provider to not merely deploy a technology system but also to ensure the presence of an ecosystem that facilitates its optimal utilisation.

This encompasses providing comprehensive support to bridge resource gaps, such as offering alternative learning platforms suited to low-bandwidth environments or supplying assistive devices where necessary. Furthermore, developing pedagogical strategies that align with the learners' technological fluency and lifestyle constraints ensures that the technology is not just available but truly accessible. To this end, private security training providers must engage in proactive resource mapping and create robust support frameworks that consider the heterogeneity of their adult learner population. Doing so establishes the groundwork for positive and equitable technology experiences, fostering an educational milieu wherein technology is not a barrier but a vehicle for empowerment and professional growth.

By encompassing these perspectives within the theoretical framework, a comprehensive understanding of the adoption and use of automated learning platforms in the context of adult education within the private security training industry can be established. The dual focus on technological acceptance factors and the specific educational challenges faced by adult learners forms a robust foundation for the implementation and evaluation of technology-enhanced learning solutions within this sector, particularly in a developing country context.

Lessons

Organisational Culture

The importance of organisational culture in adopting automated learning platforms cannot be overstated. A culture that values continuous learning and innovation not only fosters an environment conducive to embracing new technologies but also encourages employees to actively engage with these platforms. In the context of a private security training company, where up-to-date knowledge and skills are crucial for ensuring a safe and secure environment, a culture that promotes continuous learning and skills development aligns perfectly with the adoption of automated learning platforms. It creates a natural synergy that allows for the seamless integration of these platforms into the private security training learning ecosystem.

Technological Infrastructure

The technological infrastructure of a private security training company plays a pivotal role in facilitating the adoption of automated learning platforms. The seamless

integration and compatibility of these platforms with existing systems are essential factors to consider. An efficient and robust technological infrastructure not only ensures the smooth functioning of the automated learning platforms but also enhances the overall user experience. Furthermore, the capacity of the infrastructure to support the increasing data and user demands associated with automated learning platforms is critical for their successful adoption.

For private companies, investing in technological infrastructure offers a direct pathway to enhanced service quality, operational efficiency, and scalability. Companies benefit from platforms that streamline administrative tasks, track learning progress, and allow for customised training modules, thus optimising the learning experience for employees. Incentives for investment in ICT infrastructure can include increased staff productivity, reduced training costs, and improved compliance with sector regulations such as those set by the Private Security Industry Regulatory Authority (PSIRA). So, a robust technological infrastructure enables companies to leverage data analytics to track training outcomes, which can inform decision-making and enhance workforce management, contributing to the long-term competitiveness of the security firm.

In the public sector, investments in ICT infrastructure serve broader social and economic goals, improving the quality and accessibility of training in areas where private security services are critical to supplementing public safety. Public investment in ICT infrastructure for security training, particularly in high-risk or underserved communities, can promote community safety and reduce the pressure on public policing. For instance, government funding for digital infrastructure in the education and training sectors can bridge the digital divide, making learning platforms accessible in regions with limited resources and poor internet connectivity (Aruleba and Jere 2022; Hillier 2020; Mishi and Anakpo 2022).

In South Africa, investments in ICT infrastructure for public service delivery have been seen in initiatives such as the National Integrated ICT Policy, aimed at increasing digital inclusion. While this has had positive impacts, challenges remain in extending reliable connectivity to rural areas, where many security training facilities are located. This digital divide highlights the importance of public-private partnerships (PPPs) in funding ICT infrastructure to ensure that digital training resources reach all areas effectively.

Digital Literacy

In the context of security personnel, digital literacy and technological skills directly influence the ease of adoption of automated learning platforms. It is imperative to assess the current levels of digital literacy among security personnel and provide targeted training to address any gaps. Moreover, incorporating user-friendly interfaces and intuitive design elements within the automated learning platforms can significantly reduce barriers related to digital literacy, thereby empowering security personnel to engage more effectively with the platforms.

Support and Training

To ensure that automated learning platforms are effectively adopted in the South African private security sector, the availability of extensive support and customised training is crucial. Training programmes must be designed not only to familiarise adult learners with the technical aspects of these platforms but also to address specific skill gaps that security personnel may have in adapting to digital tools. Many security officers in South Africa, for instance, may have limited experience with digital platforms owing to varying levels of digital literacy across the workforce. Providing comprehensive training tailored to these needs can ease the transition into ICT-based learning and build confidence among employees, thereby improving adoption rates (Arthanat et al. 2019; Rahmani et al. 2021).

A well-structured support system can offer ongoing assistance, which is essential in a high-stress industry such as security, where the practical application of learned skills is immediately relevant. This might include dedicated helpdesks, regular feedback sessions, and digital literacy workshops. Such measures align with change management best practices, which highlight that accessible, continuous support plays a critical role in ensuring that new systems are smoothly integrated into daily operations (Kotter 1995). Structured training should include guidance on best practices for using learning platforms to meet the sector's unique needs. For example, security staff could benefit from scenario-based training modules that simulate real-life security challenges, allowing them to apply their training in a controlled, virtual environment. These platforms can also help prepare employees for emerging security challenges by including training on cybersecurity and digital tools (Naranjo-Zolotov et al. 2018).

Fostering a supportive learning culture, in which employees feel encouraged to participate without fear of judgment or failure, is essential. Security employers and training institutions can strengthen this culture by providing incentives for engagement and celebrating milestones, such as the completion of training modules. This approach ensures that training is not seen as a one-time requirement but rather as an ongoing investment in professional development, benefitting both employees and employers by enhancing skills, reducing turnover, and supporting better security outcomes (Jehanzeb and Bashir 2013).

Leadership and Management Support

In the South African private security sector, addressing management capacity and enhancing change management strategies are essential to effectively adopting ICT-driven learning solutions. The support and commitment from leadership and management in embracing new technologies, such as automated learning platforms, are pivotal for successful adoption. Their sponsorship not only signifies the strategic importance of these platforms but also sets the tone for the entire organisation. When top management demonstrates active involvement and support for integrating

automated learning platforms, it instils confidence and motivation in employees, leading to a more seamless and enthusiastic adoption process (Hossain 2023).

Implementing structured change management training and upskilling can be beneficial to strengthen management capacity, especially during a technology transition. This equips managers with the necessary skills to lead digital transformation effectively, fostering an environment where innovation is encouraged, and challenges are proactively addressed (Kotter 1995). Establishing roles such as change champions can also bridge communication between employees and top leadership, addressing concerns that might otherwise slow adoption rates.

A robust change management strategy includes clear communication, ongoing training, and feedback mechanisms. Managers can facilitate this by setting up periodic evaluations and progress updates to assess how well employees adapt to new platforms and create support networks for troubleshooting and upskilling (AbuShanab and Pearson 2007; Naranjo-Zolotov et al. 2018). Providing employees with a roadmap of the technology implementation process can clarify expectations, ease anxieties, and reinforce the organisation's commitment to supporting them throughout the transition.

For sustained impact, reinforcing the adoption of ICT-based learning platforms with consistent monitoring and rewards aligned with performance can further solidify the change. Such incentives demonstrate the organisation's dedication to long-term growth and adaptation to new systems, fostering a collaborative approach to ICT integration across all organisational levels.

Conclusion and Recommendations

In conclusion, the findings of this study emphasise the critical role of facilitators' perceptions, beliefs, knowledge, and skills, as well as the influence of infrastructure, on the successful integration of ICT in private security training companies. The impact of technological training on acceptance and use models, particularly for adult learners in the private security industry, has been underscored in the literature and further supported by the findings of this qualitative study.

Moving forward, there are practical and managerial implications that arise from these findings. First and foremost, private security training companies should prioritise the development of training programmes that address not only the technical aspects of ICT but also the attitudes and beliefs of facilitators and learners. This can be achieved through targeted professional development and training sessions that enhance facilitators' ICT competencies and attitudes toward technology integration in training.

Adopting innovative and adaptive pedagogical strategies is essential to accommodate the diverse needs of adult learners in the private security industry. This includes the implementation of flexible learning models and the incorporation of technology-

enhanced learning initiatives to ensure accessibility and effectiveness in training programmes. Furthermore, developing a supportive infrastructure that fosters a positive attitude towards ICT use is crucial for sustained integration and acceptance among adult learners.

From a managerial perspective, it is essential for security training providers to invest in ongoing technological training and professional development for their facilitators. This will not only enhance the skills and knowledge of facilitators but also contribute to a more conducive ICT environment within the company, ultimately leading to improved acceptance and usage of technology in training programmes.

Lastly, from a research perspective, it will be useful to extend this qualitative study towards a more quantitative assessment of outcomes and the acceptance and use of automated learning platforms within the private sector security industry in a developing country context such as South Africa. This will in turn inform and assist in the tailoring of more targeted teaching and learning approaches using different technologies. The integration of ICT into private security industry training holds promise for numerous stakeholders, enhancing the accessibility and quality of skills development. South Africa's private security sector is among the largest worldwide, playing a critical role in public safety and employment (Botha 2015; Mbhele et al. 2020). Introducing ICT-based learning platforms could benefit a broad spectrum of stakeholders, including private security personnel, private security companies, regulators, and the broader community.

For these security personnel, ICT-enabled training facilitates on-demand learning, making it easier to balance work responsibilities with upskilling. This is particularly advantageous given the high-risk, demanding nature of security work, where staying current with industry standards is essential. ICT platforms also support continuous learning, equipping employees with evolving skills that are crucial for adapting to new security threats (Naranjo-Zolotov et al. 2018). Employers benefit from reduced training costs and improved training consistency, which could lead to higher-quality security services. Automated learning platforms provide a scalable training approach, ensuring materials can be deployed across geographically dispersed teams, a crucial feature for an industry that operates 24/7.

At a societal level, regulatory bodies, such as the PSIRA, could enhance standardisation and monitoring across the industry through ICT, supporting quality assurance efforts. Better-trained guards enhance community safety, reducing pressure on public policing resources, and creating a broader positive social impact. In turn, ICT-supported training for security personnel directly benefits the broader community by improving safety outcomes and strengthening the sector's role in public security.

The insights from this study suggest that a holistic approach to ICT integration, encompassing facilitator training, infrastructure development, and adaptive pedagogical

strategies, is essential for maximising the effectiveness and accessibility of technology-enhanced learning initiatives in the private security training industry. By addressing these multifaceted challenges and leveraging the UTAUT framework, security training providers can ensure a seamless transition to online learning and create a more inclusive educational environment for students and adult learners.

References

Abubakari, M. R., K. Dinicola, and W. Lee. 2020. "Empirical Insights on Technology Use for Navigating Human Services." *Journal of Technology in Human Services* 38 (4): 331–351. https://doi.org/10.1080/15228835.2020.1789025

Abushanab, E., and J. M. Pearson. 2007. "Internet Banking in Jordan: The Unified Theory of Acceptance and Use of Technology (UTAUT) Perspective." *Journal of Systems and Information Technology* 9 (1): 78–97. https://doi.org/10.1108/13287260710817700

Alkhwaldi, A. F. 2023. "Understanding Learners' Intention Toward Metaverse in Higher Education Institutions from a Developing Country Perspective: UTAUT and ISS Integrated Model." *Kybernetes* 53 (12). https://doi.org/10.1108/K-03-2023-0459

Alotaibi, S. J. 2023. "UTAUT Model for the Use of Augmented Reality in Education and Training." *Romanian Journal of Information Technology and Automatic Control/Revista Română De Informatică Și Automatică* 33 (1). https://doi.org/10.33436/V33i1y202302

Arthanat, S., K. G. Vroman, C. Lysack, and J. Grizzetti. 2019. "Multi-Stakeholder Perspectives on Information Communication Technology Training for Older Adults: Implications for Teaching and Learning." *Disability and Rehabilitation: Assistive Technology* 14 (5): 453–461. https://doi.org/10.1080/17483107.2018.1493752

Aruleba, K., and N. Jere. 2022. "Exploring Digital Transforming Challenges in Rural Areas of South Africa through a Systematic Review of Empirical Studies." *Scientific African* 16: e01190. https://doi.org/10.1016/j.sciaf.2022.e01190

Augner, C. 2022. "Digital Divide in Elderly: Self-Rated Computer Skills Are Associated With Higher Education, Better Cognitive Abilities and Increased Mental Health." *The European Journal of Psychiatry* 36 (3): 176–181. https://doi.org/10.1016/j.ejpsy.2022.03.003

Botha, A. F. 2015. "The Privatisation of Security in South Africa: Selected Case Studies." PhD diss., University of Pretoria. https://www.proquest.com/openview/ea0a31cd72278252494b869984ec9f00/1?pq-origsite=gscholar&cbl=2026366&diss=y&casa_token=NR8x5iqewJwAAAAA:zRXmCaESSqZ0MamzmQ92eHRnBm6dBrWKeG3B7ITLWLe0h9ZoTsAwt-oERjPkGp-_Cz6gwNgPGZY

Cakula, S., A. Jakobsone, and M. Florea. 2015. "Automated Learning Support System for Adult Education Institutions and Enterprises." *Procedia Computer Science* 77: 191–198. https://doi.org/10.1016/j.procs.2015.12.383

Camilleri, M. A. 2019. “The Online Users’ Perceptions Toward Electronic Government Services.” *Journal of Information, Communication and Ethics in Society* 18 (2): 221–235. https://doi.org/10.1108/JICES-09-2019-0102

Davis, F. D. 1989. “Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology.” *MIS Quarterly* 13 (3): 319–340. https://doi.org/10.2307/249008

Dimitrescu, M., L. V. Sârbu, and Y. Lacroix. 2015. “European Trends for Adults’ Education in Lifelong Learning Strategy: Modern Methods and Romanian Skills in Training Management.” *Procedia-Social and Behavioral Sciences* 180: 1161–1169. https://doi.org/10.1016/j.sbspro.2015.02.235

Ertmer, P. A., and T. J. Newby. 2013. “Behaviorism, Cognitivism, Constructivism: Comparing Critical Features from an Instructional Design Perspective.” *Performance Improvement Quarterly* 26 (2): 43–71. https://doi.org/10.1002/Piq.21143

Etemadi, R., C. K. Hon, G. Murphy, and K. Manley. 2020. “The Use of Social Media for Work-Related Knowledge Sharing by Construction Professionals.” *Architectural Engineering and Design Management* 16 (6): 426–440. https://doi.org/10.1080/17452007.2019.1688637

Guillén-Gámez, F. D., E. Colomo-Magaña, J. Ruiz-Palmero, and Ł. Tomczyk. 2023. “Teaching Digital Competence in the Use of YouTube and Its Incidental Factors: Development of an Instrument Based on the UTAUT Model from a Higher Order PLS-SEM Approach.” *British Journal of Educational Technology* 55 (1): 340–362. https://doi.org/10.1111/bjet.13365

Hillier, M. 2020. “Bridging the Digital Divide With Off-Line E-Learning.” In *Expanding Horizons in Open and Distance Learning*, edited by Jennifer Roberts, Mutuota Kigotho, and Adrian Stagg. London: Routledge. https://doi.org/10.4324/9780429292941-8

Hossain, K. A. 2023. “Practices and Challenges of Modern Leadership in the Era of Technological Advancement.” *Scientific Research Journal* XI (XI). https://www.scirj.org/papers-1123/scirj-P1123972.pdf

Huang, F., T. Teo, and X. Zhao. 2023. “Examining Factors Influencing Chinese Ethnic Minority English Teachers’ Technology Adoption: An Extension of the UTAUT Model.” *Computer Assisted Language Learning* 38 (4): 928–950. https://doi.org/10.1080/09588221.2023.2239304

Hunde, M. K., A. W. Demsash, and A. D. Walle. 2023. “Behavioral Intention To Use E-Learning and Its Associated Factors Among Health Science Students in Mettu University, Southwest Ethiopia: Using Modified UTAUT Model.” *Informatics in Medicine Unlocked* 36: 101154. https://doi.org/10.1016/j.imu.2022.101154

Irianto, J., I. Rodiyah, and K. Omar. 2023. “The Use of the Unified Theory of Acceptance and the Use of Technology (UTAUT) to Analyze the Implementation of the Massive Open Online Course (MOOC) at the Indonesian Financial and Development Supervisory Agency.” *Journal Borneo Administrator* 19 (2): 175–190. https://doi.org/10.24258/jba.v19i2.1287

Jehanzeb, K., and N. A. Bashir. 2013. “Training and Development Program and Its Benefits To Employee and Organization: a Conceptual Study.” *European Journal of Business and Management* 5 (2).

Kabanda, S., and I. Brown. 2017. “A Structuration Analysis of Small and Medium Enterprise (SME) Adoption of E-Commerce: The Case of Tanzania.” *Telematics and Informatics* 34 (4): 118–132. https://doi.org/10.1016/j.tele.2017.01.002

Kotter, J. P. 1995. “Why Transformation Efforts Fail.” *Harvard Business Review*, May to June 1995. https://hbr.org/1995/05/leading-change-why-transformation-efforts-fail-2

Lah, U., J. R. Lewis, and B. Šumak. 2020. “Perceived Usability and the Modified Technology Acceptance Model.” *International Journal of Human-Computer Interaction* 36 (13): 1216–1230. https://doi.org/10.1080/10447318.2020.1727262

Maslow, A. H. 1943. “A Theory of Human Motivation.” *Psychological Review* 50 (4): 370–396. https://doi.org/10.1037/H0054346

Mbhele, N. M., M. R. Mphatheni, N. E. Mlamla, and S. B. Singh. 2020. “The Impact of the Private Security Industry Regulation Act and Other Legislative Frameworks on Private Securities Operating in Drinking Establishments in South Africa.” *International Journal of Criminology and Sociology* 9: 1811–1821. https://doi.org/10.6000/1929-4409.2020.09.207

Mishi, S., and G. Anakpo. 2022. “Digital Gap in Global and African Countries: Inequalities of Opportunities and COVID-19 Crisis Impact.” In *Digital Literacy, Inclusivity and Sustainable Development in Africa*, edited by Helena Asamoah–Hassan. Facet Publishing. https://doi.org/10.29085/9781783305131.002

Mohamed, M. J., and S. A. Hassan. 2023. “Studying the Factors that Influence the Adoption of Educational Technology in Mogadishu Secondary Schools Using UTAUT Model.” *International Journal of Information and Education Technology* 13 (7): 1070–1077. https://doi.org/10.18178/Ijiet.2023.13.7.1906

Nair, P. K., F. Ali, and L. C. Leong. 2015. “Factors Affecting Acceptance and Use of Rewind: Validating the Extended Unified Theory of Acceptance and Use of Technology.” *Interactive Technology and Smart Education* 12 (3): 183–201. https://doi.org/10.1108/ITSE-02-2015-0001

Naranjo-Zolotov, M., T. Oliveira, and S. Casteleyn. 2018. “Citizens’ Intention To Use and Recommend E-Participation: Drawing Upon UTAUT and Citizen Empowerment.” *Information Technology and People* 32 (2): 364–386. https://doi.org/10.1108/ITP-08-2017-0257

Noskova, T., T. Pavlova, and O. Yakovleva. 2021. “A Study of Students’ Preferences in the Information Resources of the Digital Learning Environment.” *Journal on Efficiency and Responsibility in Education and Science* 14 (1): 53–65. https://doi.org/10.7160/Eriesj.2021.140105

Özsungur, F. 2019. “The Effects of Technology Acceptance and Use Behaviour on Women’s Entrepreneurship Motivation Factors.” *Asia Pacific Journal of Innovation and Entrepreneurship* 13 (3): 367–380. https://doi.org/10.1108/APJIE-09-2019-0070

Pearson, S. W., and J. E. Bailey. 1980. “Measurement of Computer User Satisfaction.” *ACM SIGMETRICS Performance Evaluation Review* 9 (1). https://doi.org/10.1145/1041872.1041881

Rahmani, A. M., A. Ehsani, M. Mohammadi, A. H. Mohammed, S. H. T. Karim, and M. Hosseinzadeh. 2021. “A New Model for Analyzing the Role of New ICT-Based Technologies on the Success of Employees’ Learning Programs.” *Kybernetes* 51 (6): 2156–2171. https://doi.org/10.1108/k-02-2021-0164

Santos-Meneses, L. F., T. Pashchenko, and A. Mikhailova. 2023. “Critical Thinking in the Context of Adult Learning through PBL and E-Learning: A Course Framework.” *Thinking Skills and Creativity* 49: 101358. https://doi.org/10.1016/j.tsc.2023.101358

Siemens, G. 2005. “Connectivism: A Learning Theory for the Digital Age.” *International Journal of Instructional Technology and Distance Learning* 2 (1): 3–10.

Tian, S., and W. Yang. 2023. “Modeling the Use Behavior of Interpreting Technology for Student Interpreters: An Extension of UTAUT Model.” *Education and Information Technologies* 29: 10499–10528.

Urick, M. 2020. “Generational Differences and COVID-19: Positive Interactions in Virtual Workplaces.” *Journal of Intergenerational Relationships* 18 (4): 379–398. https://doi.org/10.1080/15350770.2020.1818662

Ustun, A. B., F. G. Karaoglan-Yilmaz, and R. Yilmaz. 2023. “Educational UTAUT-Based Virtual Reality Acceptance Scale: a Validity and Reliability Study.” *Virtual Reality* 27 (2): 1063–1076. https://doi.org/10.1007/S10055-022-00717-4

Venkatesh, V., and F. D. Davis. 2000. “A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies.” *Management Science* 46 (2): 186–204. https://doi.org/10.1287/mnsc.46.2.186.11926

Venkatesh, V. 2022. “Adoption and Use of AI Tools: A Research Agenda Grounded in UTAUT.” *Annals of Operations Research* 308 (1): 641–652. https://doi.org/10.1007/S10479-020-03918-9

Venkatesh, V., M. G. Morris, F. D. Davis, and G. B. Davis. 2003. “User Acceptance of Information Technology: Toward a Unified View.” *MIS Quarterly* 27 (3): 425–478. https://doi.org/10.2307/30036540

Verkijika, S. F. 2018. “Factors Influencing the Adoption of Mobile Commerce Applications in Cameroon.” *Telematics and Informatics* 35 (6): 1665–1674. https://doi.org/10.1016/j.tele.2018.04.012

Verkijika, S. F., and L. de Wet. 2018. “E-Government Adoption in Sub-Saharan Africa.” *Electronic Commerce Research and Applications* 30: 83–93. https://doi.org/10.1016/j.elerap.2018.05.012

Vygotsky, L. S. 1978. *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press.

Yang, C. C., C. Liu, and Y. S. Wang. 2023. “The Acceptance and Use of Smartphones Among Older Adults: Differences in UTAUT Determinants Before and After Training.” *Library Hi Tech* 41 (5): 1357–1375. https://doi.org/10.1108/LHT-12-2021-0432