RESEARCH REPORT

WHOLESALE & RETAIL SETA
LEADERSHIP CHAIR: GAUTENG

W&RSETA
WHOLESALE & RETAIL SETA
Skills Development for Economic Growth

UNIVERSITY OF JOHANNESBURG

NAVIGATING THE E-COMMERCE EVOLUTION: ASSESSING SKILLS IMPLICATIONS AND WORKFORCE ADAPTATION IN THE DIGITAL MARKETPLACE

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EXECUTIVE SUMMARY

The rapid growth of electronic commerce (e-commerce) is transforming the wholesale and retail (W&R) sector in South Africa, reshaping business models, customer engagement, and workforce requirements. This study set out to assess the skills implications of this digital shift, the challenges associated with workforce adaptation, and the strategies needed to prepare the sector for the digital marketplace. A mixed-methods approach was adopted, combining survey responses from 252 participants across all nine South African provinces with in-depth interviews conducted with 10 industry stakeholders. This design ensured that the findings captured both broad statistical patterns and the lived experiences of those working within the sector. The results point to a sector undergoing rapid transformation, characterised by heightened demand for digital competencies, persistent challenges in training and development, and the urgent need for future-focused skills investment.

One of the key findings was the significant influence of e-commerce growth on workforce skills. Over 70% of respondents agreed that e-commerce has increased the demand for digital skills in their roles. Job functions in marketing, logistics, and customer service have expanded to incorporate digital tasks, while entirely new roles like e-commerce managers, data analysts, and digital marketers have emerged. Although early entrants into the sector often relied on self-taught pathways, there is now a growing shift towards formalised digital training and qualifications. At the same time, multiple barriers to digital skills development were identified. These include limited access to training opportunities, outdated course content, high costs, and the absence of unit standards to guide e-commerce skill development. Many organisations rely heavily on vendor-led training from platforms (e.g., Shopify) that, while some are useful, often too generic, and not aligned to organisational realities. Training is also often delayed, overly theoretical or reserved for senior staff, leaving junior employees underprepared. This has created a culture of “sink or swim” learning where individuals must take responsibility for their own development, reinforcing inequities in skills acquisition.

The study also identified the key competencies required for success in the digital marketplace. Technical skills, such as data analytics, predictive analytics, and e-commerce platform management, were considered essential, but soft skills including adaptability, communication, and problem-solving were equally emphasised. The findings highlight that digital literacy has become a baseline requirement across all job roles, not just specialist information technology (IT) positions. Success in the digital marketplace will increasingly depend on employees who can integrate technical expertise with cognitive agility and innovative thinking.

Looking ahead, the study highlights the need for significant investment in e-commerce training and skills development. Marketing, logistics, and digital customer engagement are key areas that require urgent attention. Partnerships between academia and industry must be strengthened to bridge the gap between theory and practice, ensuring that graduates are better prepared for the workplace. Without such investment, South African retailers risk being left behind as global players expand their digital footprint in local markets.

The findings further suggest that while individual adaptability is relatively high, 67% of respondents expressed confidence in their ability to adapt, but organisational support remains inconsistent and underdeveloped. This presents both a challenge and an opportunity: companies that strategically prioritise digital upskilling and workforce adaptation stand to gain a competitive edge. Developing industry-specific digital standards, implementing timely and practical training programmes, embedding continuous upskilling, and investing in future-orientated skills, such as artificial intelligence, data science, and e-commerce marketing, are all essential steps forward.

E-commerce is no longer an optional or peripheral channel in South Africa's W&R sector; it is rapidly becoming the central pillar of growth. To remain competitive and sustainable, organisations must address digital skills gaps, reframe training as a strategic priority, and build resilience for the rapid pace of technological change. With coordinated action from the W&R Sector Education and Training Authority, industry, academia, and government, the sector can transform into a driver of inclusive growth, innovation, and employment in South Africa's digital economy.

KEY CONCEPTS AND DEFINITIONS

Term	Definition
Electronic commerce (E-commerce)	The buying and selling of goods and services through digital platforms and online technologies.
Digital skills	Competencies that enable individuals to use digital tools, applications, and platforms effectively.
Workforce adaptation	The process by which employees adjust to new technologies, roles, and skills demands.
Wholesale and Retail Sector Education and Training Authority (W&R SETA)	The Wholesale and Retail Sector Education and Training Authority, or W&R SETA, is responsible for industry skills development in South Africa.
Digital transformation	The integration of digital technologies into business operations, fundamentally changing how organisations function and deliver value.
Upskilling	The process of teaching employees new, advanced skills relevant to their current job roles.
Reskilling	Training employees in entirely new skills to enable them to move into different roles or sectors.
Inclusive economic growth	Economic progress that ensures benefits are distributed fairly across all sectors of society, including marginalised communities.

1 INTRODUCTION AND BACKGROUND

The global retail landscape has undergone a significant transformation driven by the rapid evolution of electronic commerce (e-commerce), which has redefined how businesses operate, how consumers make purchases, and the skills employees need to remain relevant (Sagar, 2024). In South Africa, this shift has gained momentum due to increased digital connectivity, mobile commerce, and changes in consumer preferences accelerated by the COVID-19 pandemic. As traditional retail models give way to digital platforms, the wholesale and retail (W&R) sector has responded not only to technological disruption, but also to evolving workforce demands (Dakora & Rambe, 2022).

According to Chowdhury, Chowdhury, Rahman and Sunny (2022), the increasing integration of digital tools and platforms in retail operations has created both opportunities and challenges. However, the integration of digital tools in South Africa has brought a digital divide amongst the workforces. Contrastingly, Mafuratidze and Lubbe (2024) noted that a skilled workforce can navigate technologies, such as data analytics, digital marketing, and customer relationship management systems. Many existing employees, particularly in South Africa's developing economy, lack these digital competencies, exposing a widening skills gap (Wholesale and Retail Sector Education and Training Authority [W&R SETA], 2024).

This study investigates how South Africa's W&R SETA can respond to these changes by identifying the key skills needed in e-commerce and exploring strategies for workforce adaptation. The research aligns national priorities for inclusive growth and employment and supports the W&R SETA mission to build a future-ready workforce. The W&R sector can become a catalyst for innovation, economic resilience, and meaningful employment in a digital future.

2 RESEARCH PROBLEM, AIM, AND RESEARCH OBJECTIVES

The following section establishes the basis of the study, highlighting the research problem, aim, and objectives that shape its direction.

2.1 RESEARCH PROBLEM

The e-commerce sector has witnessed exponential growth, driven by advancements in technology, changes in consumer behaviour, and the proliferation of digital platforms. While these trends present significant opportunities, they also create challenges, particularly in equipping the workforce with relevant skills. Traditional skill sets, such as cashiering, stock handling, merchandising, and basic customer service, are no longer sufficient in this dynamic

environment, necessitating a deeper understanding of workforce adaptation to meet industry demands. Woods, Doherty and Stephens (2022) defined traditional skills as the foundational, task-orientated competencies historically associated with retail operations, such as operating tills, managing inventory manually or assisting customers at the point of sale, that were adequate in a predominantly physical retail environment, but are increasingly limited in a digitally driven economy. Moreover, the ongoing implementation of technological advancements, such as artificial intelligence (AI), AI of things, and automation, has proven disruptive, introducing significant challenges to the South African retail industry, particularly regarding the need for new skill sets and workforce adaptation (Mamela, Sukdeo & Mukwakungu, 2020).

These rapid innovations require employees to develop technical competencies and adapt to evolving roles within an increasingly digital and automated environment (Trenerry, Chng, Wang, Suhaila, Lim, Lu & Oh, 2021). According to Aldoseri et al. (2024), e-commerce evolution also presents opportunities for growth, which are based on encouraging innovation, promoting the development of local AI expertise, and driving improvements in data security practices. Identifying and understanding the digital skills required will be crucial for enhancing operational efficiency, enhancing customer experiences, and reshaping workforce dynamics in the W&R sector (Grewal, Benoit, Noble, Guha, Ahlbom & Nordfält, 2023). Therefore, it is particularly important to uncover the skills implications and workforce adaptation for transformation of the W&R sector to help bridge the gap between the skills their workforce possess and those required for success in the e-commerce sector. This disconnect could hinder productivity, innovation, and growth, especially since digital transformation is still gaining momentum. As a result, the following research aims and objectives were developed, aligned with the problem statement.

2.2 AIM AND OBJECTIVES

This study aim and objectives include:

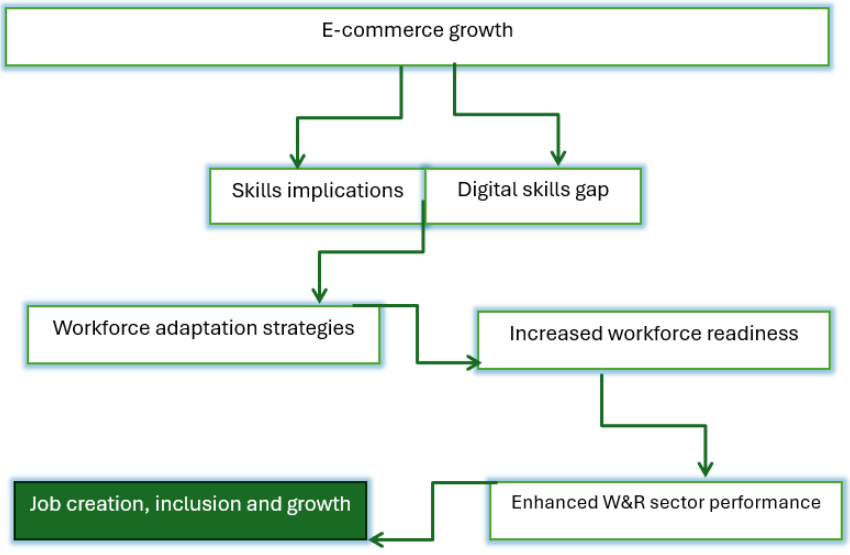
- To assess the skills implications and workforce adaptation required in the W&R digital marketplace as a result of the evolution of e-commerce;
- To assess the influence of e-commerce growth on workforce skills in the W&R sector;
- To investigate the challenges associated with digital skill development within the W&R sector;
- To identify key competencies required for success in the digital marketplace in the W&R sector;
- To examine the role of technology in workforce transformation within the W&R sector; and

- To propose effective strategies for workforce adaptation in the W&R sector.

3 LITERATURE REVIEW

As one of the largest contributors to the national economy, the W&R sector has been recognised by the government as the second-largest employer, significantly impacting gross domestic product (GDP) growth (Statistics SA 2021). Despite facing various industry challenges, the sector has consistently demonstrated resilience, exhibited steady growth, and increased employment opportunities. Notably, its role in mitigating unemployment – particularly among young individuals, including matriculants and graduates – underlines its socio-economic significance (Habiyaremye, Habanabakize & Nwosu, 2022). This section presents a review of existing literature (as briefly illustrated in Figure 1) on key themes relevant to the e-commerce evolution and workforce adaptation within the W&R sector. It explores the growth of e-commerce as well as examines skills implications and digital skills gap, and the current workforce adaption strategies. Additionally, this section evaluates how workforce readiness can contribute to the W&R sector in terms of job creation and inclusive economic growth.

Figure 1: Literature review road map



Source: Author's own consolidation.

3.1 ELECTRONIC COMMERCE GROWTH

E-commerce in South Africa began gaining traction in the early 2000s, initially driven by increased internet accessibility and improved digital infrastructure (Swanepoel, 2024). Early players like Kalahari.net (later acquired by Takealot) paved the way for the growth of the sector.

Over time, platforms including Takealot, Superbalist, and other niche retailers became widely recognised. The entry of global giants like Amazon further intensified competition (Jonhson & Iyamu, 2019; News24Wire, 2015). The COVID-19 pandemic in 2020 acted as a major catalyst, driving a permanent shift in consumer behaviour as individuals and businesses increasingly adopted digital channels (Moodley & Buthelezi, 2023). Several additional factors have accelerated e-commerce adoption in South Africa:

- *High internet and mobile penetration*: increased mobile phone ownership and affordable data packages have improved access to online retail platforms (Aruleba & Jere, 2022).
- *Digital payment innovations*: platforms like SnapScan, Ozow, and mobile banking apps have improved the convenience and security of online transactions (Naidoo, 2021).
- *Global market entrants*: international platforms, such as Shein, have expanded into the South African market, offering low-cost, fast-shipping options that appeal to price-sensitive consumers (Krykun, 2024).
- *Shifts in consumer habits*: the COVID-19 lockdown encouraged safer, contactless shopping methods, many of which have remained permanent (Abe & Mugobo, 2021).

E-commerce has become a vital retail format within the South African W&R sector (Saffy, 2025). Increasingly, consumers are adopting e-commerce platforms, with an expected rise to approximately 11.7 million users by 2025 and 21.52 million users by 2029 (Cowling, 2025). The rise of e-commerce has significantly impacted the South African workforce, creating both opportunities and challenges (Igue, Alinsato & Agadjihouédé, 2021). Furthermore, Strange, Chen and Fleury (2022) alluded that digital transformation has created new job categories, such as e-commerce managers, digital marketers, data analysts. and logistics coordinators, driving demand for specialised skills. Contrastingly, the shift from bricks-and-mortar stores to online platforms has disrupted traditional retail roles, leading to job displacements, such as in-store sales, cashiers, visual merchandisers, and inventory clerks. These roles are increasingly being replaced or redefined as automation, self-service technologies, and centralised e-fulfilment centres become more prevalent (Ryhan 2023). However, the digital divide and unequal access to training opportunities may further marginalise workers who lack digital literacy or access to upskilling programmes, exacerbating existing inequalities within the W&R labour market (Massey, 2021; Sagar, 2024).

3.2 CHANGING SKILL DEMANDS AND GROWING DIGITAL SKILLS GAPS

The e-commerce evolution has led to the creation of jobs, such as pickers, validators, delivery drivers, data analysts, and warehouse supervisors, which are essential to ensuring the smooth operation of e-commerce logistics and supply chain management. Additionally, new roles have emerged within the gig economy, including personal shoppers and runners, allowing

individuals to capitalise on flexible, technology-driven employment opportunities (Malapane & Ndlovu, 2022). With such technological advancements, labour requirements are expected to change. For example, previously, the minimum requirement was basic literacy and physical retail experience, but now employers increasingly demand digital literacy, proficiency in data management systems, and familiarity with e-commerce platforms. This means individuals working within the W&R sector must continuously upskill and adapt to emerging technologies to remain relevant and competitive in the digital era. Table 1 demonstrates how jobs within the W&R sector have evolved over time.

Table 1: Traditional roles versus digital era roles in wholesale and retail sector

Job category	Traditional roles	Digital/E-commerce era roles
Sales and customer service	In-store sales assistant, cashier, customer service desk	Online sales support, live chat agent, e-commerce customer experience specialist
Marketing and promotion	Flyer distributor, in-store promoter, visual merchandiser	Digital marketer, social media manager, content creator
Inventory and stock	Stockroom assistant, shelf packer, manual inventory clerk	Warehouse automation coordinator, inventory data analyst, fulfilment manager
Store management	Store manager, floor supervisor	Omnichannel manager, online store coordinator
Logistics and delivery	Delivery driver (local), manual route planner	Last-mile delivery coordinator, fleet tracking analyst, drone delivery technician
Payments and transactions	Cashier, point-of-sale operator	Mobile payment specialist, e-wallet and fintech support
Customer engagement	Loyalty card promoter, in-person feedback collector	Customer relationship management specialist, data insights analyst, customer journey designer
Training and development	On-the-job physical training	E-learning facilitator, digital skills trainer, learning management system administrator

Source: Author's own consolidation.

The traditional roles are slowly being replaced by digital/e-commerce roles or mostly supported by digital innovations. The W&R sector has moved towards being customer-centric and roles need to emphasise personalised, data-driven engagement across digital touchpoints. Hence, research and development within the sector become even more critical. The W&R SETA (2024) revealed various skills for the future that mostly centre around soft and digital skills, analytical skills, creativity, and lifelong learning. A McKinsey & Company report (Simon, Tufft & Zampella, 2020) pointed out additional skills, including manual skills, basic cognitive skills, higher cognitive skills, social and emotional skills, and technological skills. This indicates that the W&R sector still needs to adopt a holistic, future-focused approach to workforce development – one that balances traditional operational capabilities with emerging digital competencies. This will assist in equipping employees with a diverse and adaptive skill

set, which is vital for navigating ongoing digital transformation and ensuring sustainable competitiveness in a rapidly evolving retail environment.

3.3 WORKFORCE ADAPTATION STRATEGIES IN ELECTRONIC COMMERCE

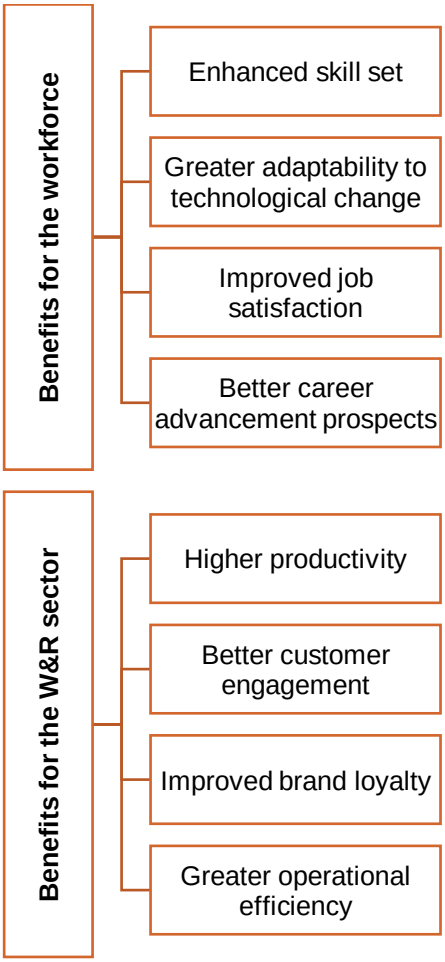
Despite the opportunities presented by the evolution of e-commerce, various challenges persist, including digital exclusion, infrastructural limitations, cybersecurity concerns, customer expectations, keeping up with customer needs or demands, personalised and consistent experience throughout all platforms, and competition from global e-commerce giants (Arabiun & Moghadasi, 2024). The W&R sector has attempted to combat these issues to ensure long-term sustainability, economic growth, job creation, and promote innovation as follows (Thakur, 2021; W&R SETA, 2024).

- Skilled labour – recruiting individuals with the right skills and experience;
- Enhanced development and training – some human capital companies are providing development and training opportunities within their organisations; and
- Digital specific training programmes – retailers have implemented programmes that address coding, data, cybersecurity, online merchandising, and digital marketing, just to mention a few.

3.4 INCREASED WORKFORCE READINESS

Retailers that have adopted the e-commerce format are already investing in their workforce through learning and development, preparing for an uncertain future (Digital Deloitte, 2025). However, Fisher, Gallino and Netessine (2021) argued that most retailers provide very little training due to cost implications. According to Sobiyi, Madonsela and Twala (2017), employees are key internal stakeholders within the W&R sector due to the critical role they play in driving sales, delivering customer service, representing the brand, and contributing to organisational culture. Therefore, investing in workforce training will increase workforce readiness and provide multiple opportunities and benefits. It is worth noting that investing in workforce training to increase readiness yields substantial benefits for both employees and the W&R sector (as highlighted in Figure 2).

Figure 2: Benefits for both employees and the wholesale and retail sector for increased workforce readiness



Source: Author's own consolidation.

3.5 ENHANCED WHOLESALE AND RETAIL SECTOR PERFORMANCE

When the W&R sector performs well, it can significantly contribute to South Africa's economic growth and development. A thriving W&R sector can play a crucial role in tackling some of South Africa's most pressing challenges, including high levels of youth unemployment, low levels of innovation, and skills shortages. By anticipating future skills, creating employment opportunities – especially for entry-level and youth workers – and promoting entrepreneurship and technological adoption, the sector can stimulate inclusive economic participation. Furthermore, a strong retail sector can enhance market access for small and emerging businesses, advance local production, and support broader socio-economic transformation. The benefits of an enhanced W&R sector are outlined in the subsections that follow.

3.5.1 Job creation

Strategic investment in skills development has the potential to create significant job opportunities. This is particularly critical in South Africa, where the unemployment rate continues to rise, especially youth unemployment, which is currently at 59.6% (Stats SA, 2025). By equipping individuals with relevant digital competencies, new pathways for employment can be created in areas, including e-commerce operations, digital marketing, logistics, and customer support.

3.5.2 Inclusion

Beyond job creation, inclusion remains a critical factor in South Africa's socio-economic development. Access to digital skills should not be limited to urban centres alone, but must extend to rural and under-resourced communities. Ensuring equitable access will help bridge the digital divide, empower marginalised groups, and promote more inclusive participation in the digital economy (Ngoqo, 2022).

3.5.3 Growth

The W&R sector employs more than 3 million South Africans and contributes over 20% of the country's GDP (W&RSETA Strategic plan report, 2020). If the sector were to invest more strategically in developing digital skills, its performance could be significantly enhanced. Such an investment could boost productivity, generate new employment opportunities, and increase competitiveness across local and international markets. By equipping the workforce with essential digital competencies – ranging from e-commerce management and data analytics to digital customer engagement – the sector could foster innovation, improve service delivery, and build resilience against future economic and technological disruptions. This approach would not only drive sectoral growth, but also contribute meaningfully to South Africa's broader economic transformation.

4 RESEARCH METHODOLOGY

This section focuses on the research methodology applied in this project. Given the evolving nature of digital commerce, a mixed-methods approach integrating both quantitative and qualitative data collection techniques was deemed appropriate. This approach ensured a comprehensive understanding by leveraging the strengths of numerical analysis and in-depth qualitative insights. The study followed a convergent research design, allowing for simultaneous data collection and subsequent integration to derive well-rounded conclusions. Ethical considerations, including informed consent, data security, and participant anonymity, were fundamental to this project execution.

4.1 RESEARCH DESIGN OVERVIEW

This research employed a mixed-methods approach by conducting a quantitative, non-experimental design in the form of an online survey and a qualitative technique, in a form of online interviews utilising a semi-structured fashion. Mixed methods were appropriate for the study, since neither quantitative nor qualitative methods alone were sufficient to assess the skills implications and workforce adaptation required in the digital marketplace as a result of the evolution of e-commerce. A convergent design was applied in this study to produce well-validated conclusions. Therefore, the primary data collected was quantitative and qualitative in nature. To ensure the required information was obtained, for quantitative, a questionnaire was developed and pre-tested; and for qualitative, semi-structured online interviews were conducted to ensure there were no limitations for information. In this study, the researcher collected both types of data at the same time and merged the different results (comparing and interpreting).

4.1.1 Phase one: Quantitative

The first phase of the research collected quantitative data from 252 various stakeholders drawn from the W&R SETA database to assess the impact of e-commerce on workforce skills and adaptation within the W&R sector. The survey, which took 10-15 minutes to complete, provided the primary data source. After collection, the data was analysed using the latest versions of the Statistical Package for the Social Sciences and SmartPLS, employing descriptive, inferential, and multivariate techniques.

4.1.2 Phase two: Qualitative

The second phase of the research gathered qualitative data from 10 participants to gain deeper insights into workforce adaptation and skills development in the e-commerce landscape. Online interviews were conducted with relevant stakeholders (employees, employers or managers, educators or trainers). An interview guide was developed based on the study's objectives by structuring the discussions to ensure comprehensive coverage of key themes. All interviews were conducted online via Zoom and Microsoft Teams and were audio-recorded (with consent), securely labelled, and stored on a memory stick for future reference. Each interview lasted 60-90 minutes, which allowed sufficient time for participants to engage in meaningful dialogue and explore all questions thoroughly. The data was first transcribed for accuracy; thereafter, the transcriptions were analysed thematically, allowing the researcher to uncover recurring themes and in-depth perspectives on how digital changes are influencing skills needs within the W&R workforce.

4.2 COMPARE AND CONTRAST QUANTITATIVE AND QUALITATIVE RESULTS

Upon completion of data collection and analysis, the researcher compared and contrasted the quantitative and qualitative findings to identify patterns, discrepancies, and complementary insights. The quantitative phase provided statistical trends and measurable impacts of e-commerce on workforce skills, while the qualitative phase offered in-depth narratives and experiential accounts from industry professionals. A systematic approach to comparing these results involved identifying convergence, exploring divergence, and integrating insights to address the main aim of the study.

4.3 ETHICAL CONSIDERATIONS

This section outlines the ethical considerations that were adhered to in this research.

4.3.1 Ethical application

The project complied with the ethical application procedures established by the University of Johannesburg's Department of Marketing within the School of Consumer Intelligence and Information Systems. Ethical approval for data collection was granted under clearance code 2025SCiiS002, which was officially approved in March 2025.

4.3.2 Consent

In the quantitative phase, respondents indicated consent by selecting an option acknowledging they had read and understood the consent information before proceeding with the survey. This electronic consent was securely stored along with the survey responses.

in the study's qualitative phase, which comprised online interviews, participants signed and returned a consent form electronically before the session. Additionally, verbal confirmation was obtained at the beginning of each interview to reconfirm consent, particularly for recording the session.

4.3.3 Information letters

All participants received an information sheet explaining the purpose, objectives, and methods of the study, along with potential risks, benefits, and the duration of the survey or interview sessions. This document further clarified participants' rights, including their right to withdraw from the study at any time without consequences. Moreover, participants were informed of the measures in place to protect their confidentiality and secure their data. They were advised that

any identifying information would be removed from analysis and reports, and that data would be securely stored and accessible only to the research team.

4.4 LIMITATIONS AND DELIMITATIONS

The study is restricted in its generalisability to the South African W&R workforce. It focused on e-commerce adaptation, excluding broader retail challenges, with data collected via online surveys and interviews.

4.5 RELIABILITY AND VALIDITY

To ensure credibility and accuracy, the study adhered to various reliability and validity measures.

4.5.1 Reliability

- Consistency of data collection tools: The survey instrument went through pilot testing to ensure internal consistency and minimise ambiguity. A Cronbach's alpha coefficient was calculated to measure reliability in quantitative data.
- Standardised procedures: The same structured questionnaire and interview guide were used for all participants to maintain uniformity in responses.

4.5.2 Validity

- Content validity: The questionnaire and interview guide were reviewed by industry experts and academics to ensure relevance to the research objectives.
- Construct validity: The study employed well-established scales and frameworks from existing literature to ensure alignment with recognised constructs related to digital skills and workforce adaptation.
- Triangulation: The integration of quantitative and qualitative findings enhanced the projects validity by cross-verifying insights from different data sources.

5 ANALYSIS OF QUANTITATIVE RESULTS

As digital platforms increasingly dominate retail and commercial spaces, organisations face mounting pressure to ensure their workforce possesses the requisite digital skills to navigate this transformation effectively. This phenomenon is especially pertinent within the South African context, where disparities in technological access and digital readiness persist. In this dynamic environment, workforce adaptability and skills alignment have emerged as critical factors for organisational sustainability and competitiveness. In this section, quantitative data is analysed.

5.1 BIOGRAPHICAL DATA

This section presents the demographic profile of the respondents who participated in the study. The analysis of biographical data provides context for interpreting the main findings and helps identify patterns or differences in responses based on the biographical data.

Table 2: Demographic characteristics

	Frequency	Percentage
Gender		
Male	110	43.7
Female	142	56.3
Age (years)		
18-24	5	2
25-34	88	34.9
35-44	74	29.4
45-54	53	21
55-65	32	12.7
Highest qualification		
Below matric	30	11.9
Matric	111	44
Diploma	50	19.8
Degree	31	12.3
Postgraduate	30	11.9
Level of income		
< R5 000	116	46
R5 000-R10 000	44	17.5
R11 000-R16 000	23	9.1
R17 000-R23 000	15	6
> R24 000	54	21.4

The biographical profile of respondents revealed a relatively balanced gender distribution, with 56.3% identifying as female and 43.7% as male. With respect to age, the largest proportion of respondents (34.9%) fell within the 25-34 age category, followed by 29.4% aged 35-44, and 21% aged 45-54. Only 2% of respondents were in the youngest age group (18-24), while 12.7% were aged 55-65. The age distribution was significantly skewed towards younger and mid-career adults.

In terms of educational qualifications, 44% of respondents reported having completed matric, followed by 19.8% holding a diploma and 12.3% a university degree. Postgraduate qualifications and below-matric education accounted for 11.9% each. The variation in educational attainment across respondents was statistically significant, highlighting a diverse

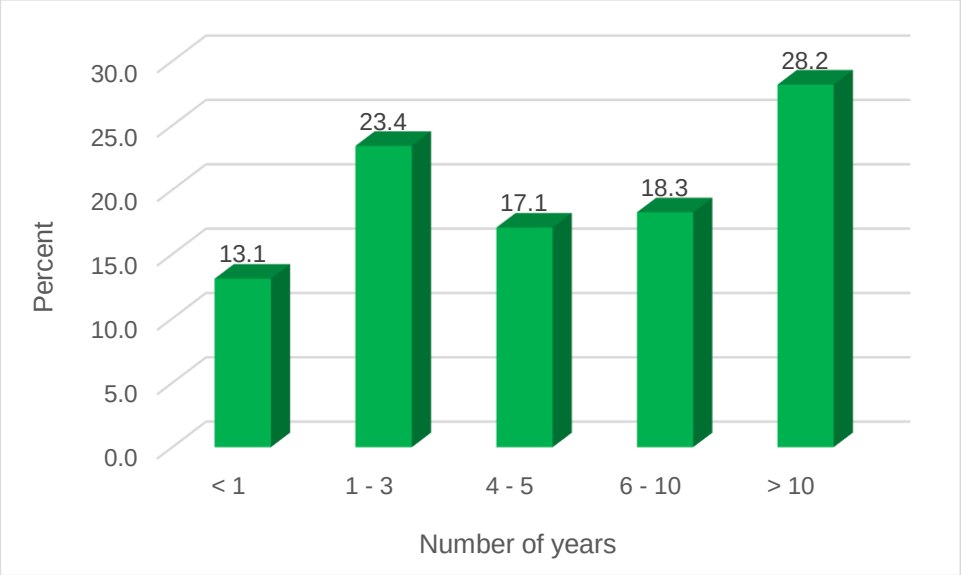
range of academic backgrounds within the sample. Income levels varied considerably, with nearly half of the respondents (46%) earning less than R5 000 per month. This was followed by 21.4% earning above R24 000, and smaller proportions falling into intermediate income brackets. The notable disparities in income distribution may have implications for digital skill access and workforce adaptation.

5.2 SECTOR INVOLVEMENT AND REGIONAL DISTRIBUTION

This section captures respondents' involvement in the retail sector and their geographic distribution across South African provinces. This section is essential for contextualising the findings by establishing whether participants are actively engaged in the industry most affected by e-commerce transformation. It also provides insight into the spatial spread of respondents, which is important for assessing the representativeness of the sample and identifying any provincial variations that may influence digital skill development and workforce adaptation. The data collected includes current employment within the retail sector, years of experience, occupational role, and province of residence.

Of the sample, 252 respondents (100%) indicated that they work within the W&R sector or are involved in teaching or training within this sector. Figure 3 indicates the time (in years) that respondents have worked within the W&R sector.

Figure 3: Number of years



Source: Author's own consolidation.

Majority of respondents reported having substantial experience in the W&R sector. Specifically, 28.2% (n = 71) had worked in the sector for more than 10 years, indicating a

significant base of long-term engagement. This was followed by 23.4% (*n* = 59) with one to three years' experience and 18.3% (*n* = 46) with six to 10 years. Respondents with four to five years' experience comprised 17.1% (*n* = 43), while those with less than one year of experience represented the smallest group at 13.1% (*n* = 33). These figures suggest that the sample included a diverse range of experience levels, with a notable proportion of seasoned professionals contributing insights into evolving skill requirements and industry changes. Table 3 indicates the province where the respondents resided.

Table 3: Respondents per province

	Frequency	Percentage
Eastern Cape	35	13.9
Free State	11	4.4
Gauteng	30	11.9
KwaZulu-Natal	34	13.5
Limpopo	22	8.7
Mpumalanga	34	13.5
Northern Cape	46	18.3
North West	14	5.6
Western Cape	26	10.3
Total	**252**	**100**

Source: Author's own consolidation.

Respondents were drawn from all nine provinces of South Africa, reflecting a broad geographic representation within the W&R sector. The largest proportion of participants were from the Northern Cape, accounting for 18.3% (*n* = 46) of the sample. This was followed by the Eastern Cape at 13.9% (*n* = 35), KwaZulu-Natal and Mpumalanga each at 13.5% (*n* = 34), and Gauteng at 11.9% (*n* = 30). Other provinces included the Western Cape at 10.3% (*n* = 26), Limpopo at 8.7% (*n* = 22), North West at 5.6% (*n* = 14), and the Free State, which had the smallest representation at 4.4% (*n* = 11).

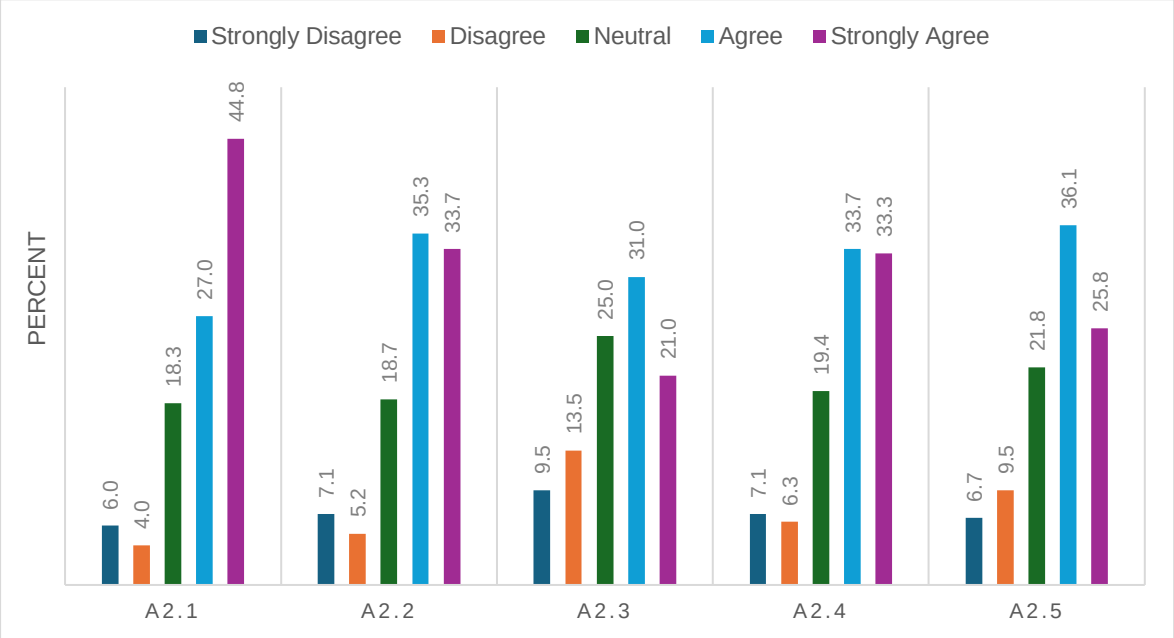
5.3 CORE RESEARCH DATA

Sections A2 to A6 of the questionnaire comprised the core attitudinal constructs designed to evaluate participants' perceptions, experiences, and organisational contexts in relation to digital transformation in the W&R sector. Each section aligned with a specific objective of the study and collectively provided a comprehensive understanding of how workforce skills, digital competencies, technology integration, and organisational strategies are evolving in response to the rise of e-commerce.

5.3.1 Impact of electronic commerce on workforce skills

This section evaluates participants' perceptions of how the growth of e-commerce has influenced skill demands, job roles, and career opportunities in the retail sector.

Figure 4: Impact of electronic commerce on workforce skills



Source: Author's own consolidation.

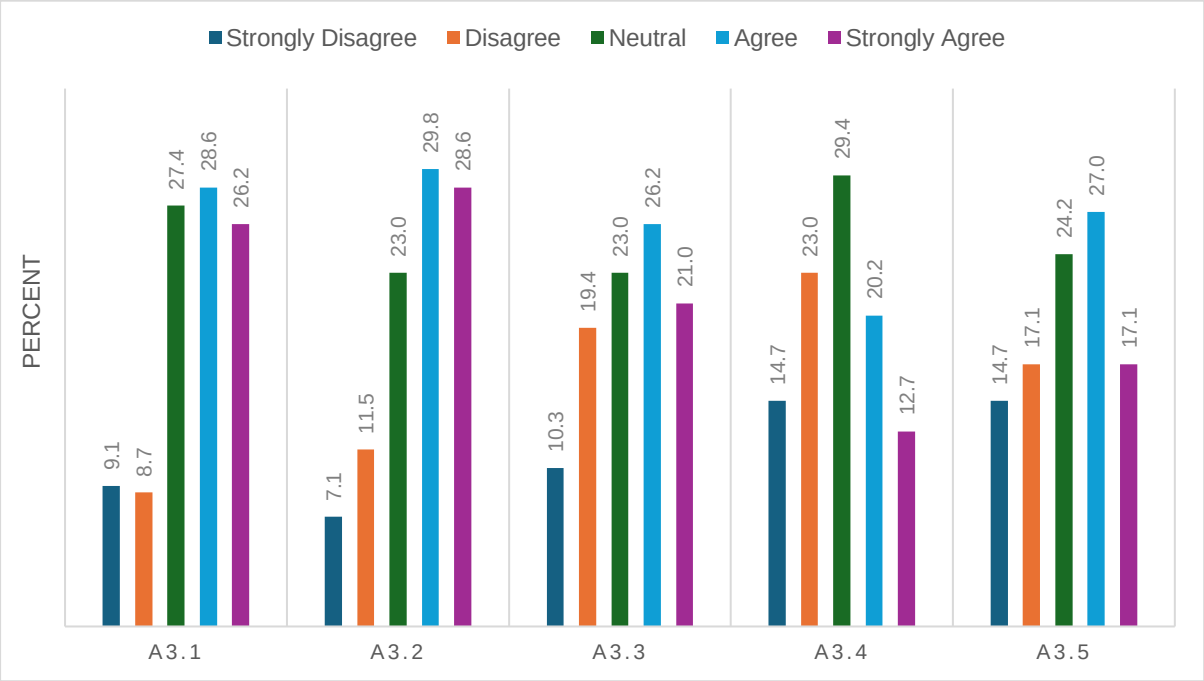
Most respondents (71.8%) agreed or strongly agreed that the growth of e-commerce has significantly increased the demand for digital skills in their roles (A2.1), with 44.8% strongly agreeing. Similarly, 69% of respondents affirmed that e-commerce has reshaped the skills required in their organisations (A2.2), further highlighting a shift in operational expectations. Confidence in personal capabilities (A2.3) showed more moderate support, with 31% agreeing and 21% strongly agreeing, but also notable levels of neutrality (25%) and disagreement (23%), suggesting varied levels of readiness among employees.

The perception that e-commerce has shifted job roles and responsibilities (A2.4) was supported by 67% of participants, showing wide acknowledgement of role evolution. Lastly, while 61.9% agreed or strongly agreed that e-commerce evolution has created more career advancement opportunities (A2.5), responses were more distributed, indicating that the perceived benefits of digital transformation may not be uniformly experienced across all roles or sectors.

5.3.2 Challenges in digital skill development

This section examines respondents' viewpoints of barriers that hinder the development of digital skills within their workplace environments.

Figure 5: Challenges in digital skill development



Source: Author's own consolidation.

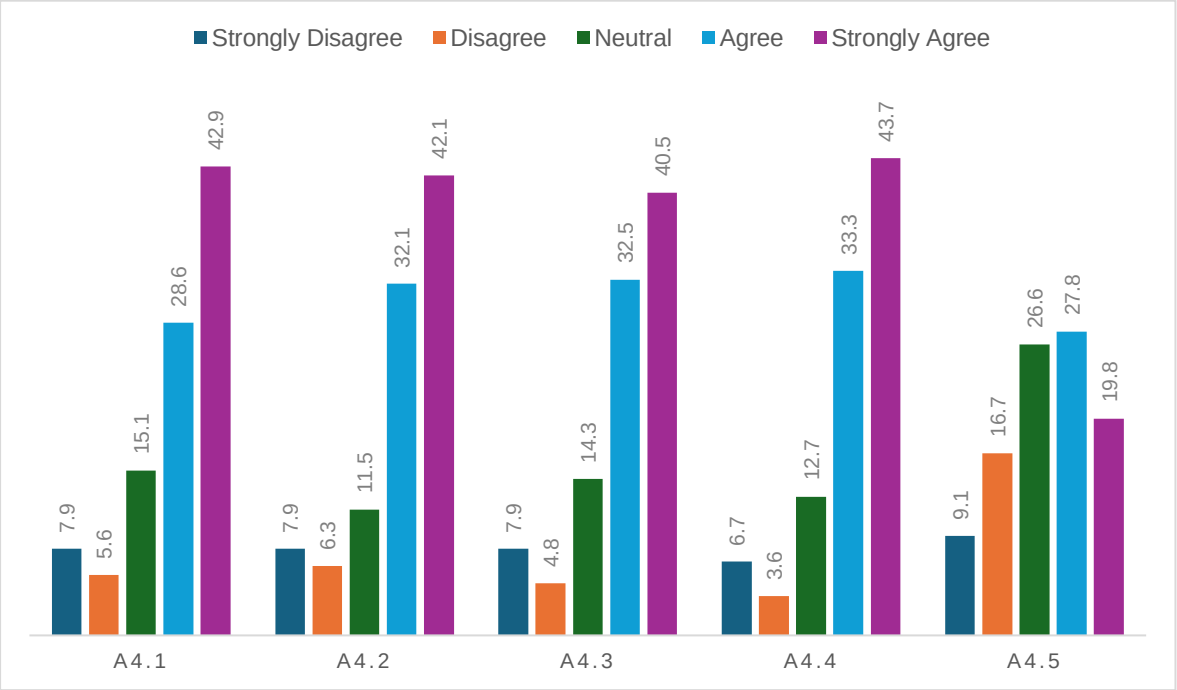
As depicted in Figure 5, majority of respondents agreed (28.6%) or strongly agreed (26.2%) that access to training opportunities is a challenge (A3.1), highlighting institutional limitations in capacity-building efforts. Similarly, over half of the participants acknowledged that the cost of acquiring digital skills is a barrier (A3.2), with 29.8% agreeing and 28.6% strongly agreeing. Time constraints also emerged as a notable concern (A3.3), with 47.2% of respondents indicating that it impedes their ability to pursue digital upskilling.

Conversely, when asked whether their organisation provides sufficient resources for digital skill development (A3.4), 37.7% of participants disagreed or strongly disagreed and only 32.9% agreed or strongly agreed, indicating a shortfall in organisational support. Additionally, 44.1% of respondents agreed or strongly agreed that there is a lack of clear guidance on which digital skills are most relevant to their roles (A3.5), reinforcing the need for more targeted, role-specific training pathways. These findings underline structural and contextual barriers that must be addressed to support digital competency development in the retail workforce.

5.3.3 Key competencies for digital marketplace success

This section explores respondents' views on the skills and competencies essential for thriving in the digital economy.

Figure 6: Key competencies for digital marketplace success



Source: Author's own consolidation.

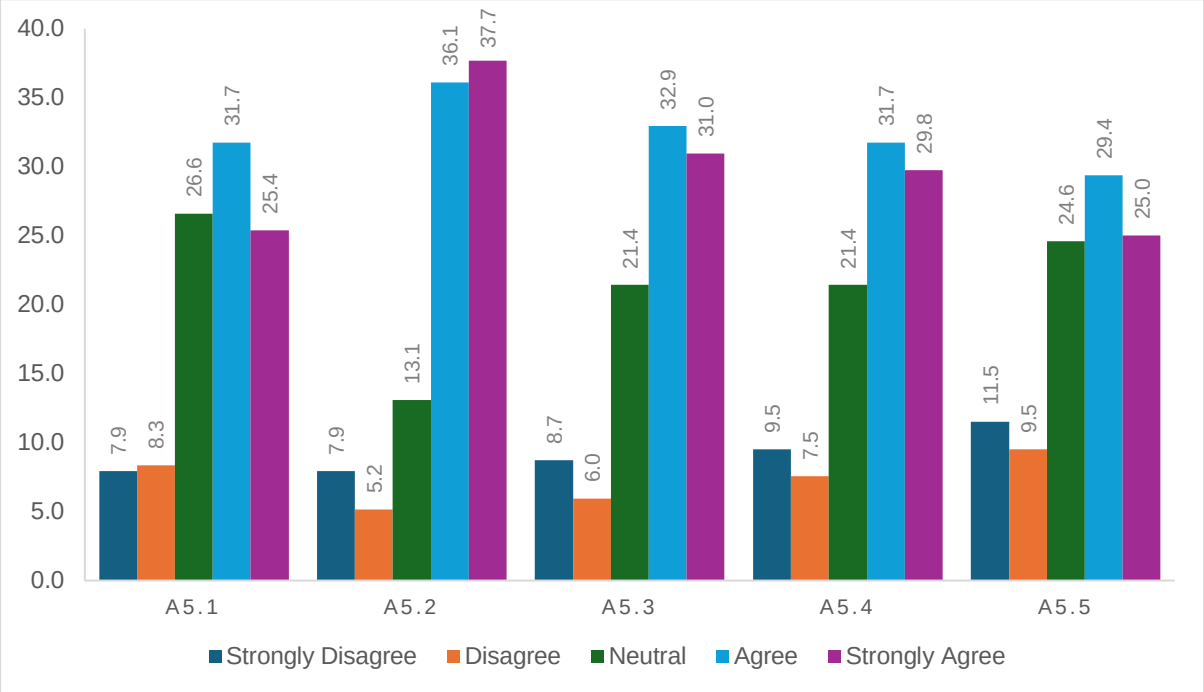
Figure 6 shows that more respondents affirmed the importance of technical skills, such as data analytics and e-commerce tools, with 28.6% agreeing and 42.9% strongly agreeing (A4.1). Likewise, soft skills like adaptability and communication were widely acknowledged, with 74.2% participants in agreement (A4.2), suggesting recognition of their equal value in digitally intensive roles.

The need for understanding e-commerce platforms and technologies was supported by 73% of respondents (A4.3), while problem-solving and critical thinking emerged as critical competencies, endorsed by 77% of respondents (A4.4). Notably, while 47.6% of participants agreed or strongly agreed that employers prioritise digital skills in hiring (A4.5), this item also showed more neutrality (26.6%) and disagreement (25.8%) compared to others, indicating potential variation in organisational emphasis on digital hiring criteria. Overall, the results highlight a clear recognition of both technical and cognitive skills as essential for success in a digitally driven workplace.

5.3.4 Role of technology in workforce transformation

This section assesses how respondents perceive the impact of technological advancements, particularly automation, AI, and digital integration, on their work environments. Refer to Figure 7 for the results.

Figure 7: Role of technology in workforce transformation



Source: Author's own consolidation.

Most respondents agreed (31.7%) or strongly agreed (25.4%) that emerging technologies have significantly impacted their daily work (A5.1). An even greater proportion of respondents (73.8%) acknowledged that the introduction of new technologies has necessitated the acquisition of new skills (A5.2), reflecting the pressure on workers to continually adapt to technological changes.

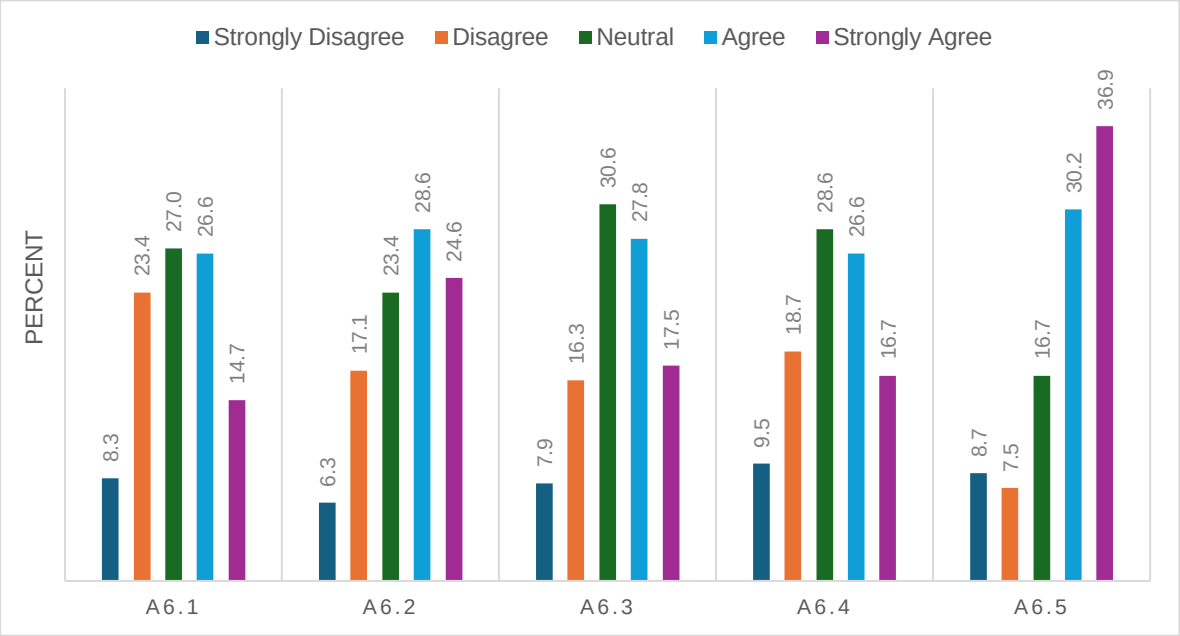
Positive perceptions were also observed regarding the productivity benefits of technology adoption (A5.3), with 63.9% of respondents in agreement. Additionally, 61.5% agreed or strongly agreed that the integration of advanced technologies has reshaped traditional workforce roles (A5.4), suggesting widespread structural shifts in job functions.

While 54.4% of respondents agreed that their organisation is proactive in implementing technology to remain competitive (A5.5), a substantial 24.6% remained neutral and 21% expressed disagreement, indicating some inconsistency in perceived organisational responsiveness to digital transformation. Overall, the data suggests that while technological change is clearly impacting work, the extent of organisational support and strategic implementation varies across contexts.

5.3.5 Workforce adaptation strategies

This section investigates the extent to which organisations support their employees in adapting to digital transformation through reskilling efforts, training relevance, and fostering confidence. See Figure 8 for a graphic representation of the results.

Figure 8: Workforce adaptation strategies



Source: Author's own consolidation.

Views on whether organisations have effective reskilling and upskilling programmes (A6.1) were mixed: while 41.3% agreed or strongly agreed, 31.7% disagreed or strongly disagreed, and 27% remained neutral. A more favourable response emerged for A6.2, where 53.2% agreed that workforce adaptation is a priority in their organisation, indicating growing institutional awareness of the need for digital transformation.

Respondents were less unified on feeling supported by their employers in adapting to the digital marketplace (A6.3), with 30.6% neutral and 24.2% disagreeing or strongly disagreeing. Similarly, perceptions of the relevance of organisational training (A6.4) were fairly distributed across the scale, although 43.3% agreed or strongly agreed. In contrast, there was strong personal confidence in adapting to future changes (A6.5), with 67.1% expressing agreement, highlighting an individual readiness that may not always be matched by institutional support. These findings suggest that while many employees are confident in their adaptability, organisational practices may not yet be fully aligned with the pace of digital change.

5.4 CONCLUSION

The quantitative results prove that the W&R sector in South Africa is experiencing a significant transformation as a result of e-commerce growth and digital integration. The demographic profile of respondents reflects a diverse workforce in terms of age, qualifications, and income, presenting both opportunities and disparities in digital readiness. Sector involvement data reveals a wide range of experience levels and strong provincial representation, enhancing the credibility of the findings. The results clearly demonstrate that e-commerce has reshaped workforce skills, with most respondents acknowledging the heightened demand for digital and adaptive competencies. However, significant challenges persist in the form of limited access to training, high costs, outdated content, and insufficient organisational support. While employees recognise the importance of both technical and soft skills for success in the digital marketplace, organisational practices have not consistently prioritised digital hiring or provided adequate training interventions.

Technology was widely acknowledged as a key driver of workforce transformation, creating new skill demands, while also disrupting traditional roles. Nevertheless, organisational strategies for supporting adaptation remain uneven, with many employees' expressing confidence in their ability to adapt, but highlighting a lack of structured reskilling and upskilling opportunities. The findings point to a workforce that is individually willing and somewhat prepared to embrace digital transformation, but often constrained by systemic barriers and uneven organisational commitment. To fully realise the benefits of digitalisation, both individual and organisational efforts must converge through timely, practical, and targeted interventions in skills development and workforce support.

6 ANALYSIS OF QUALITATIVE RESULTS

This section presents an analysis of the qualitative dataset. The study employed thematic analysis, a process that involved transcribing the interviews, systematically identifying recurring patterns, and developing key themes from the responses. Ten in-depth interviews were conducted with stakeholders in the W&R sector, providing rich insights into their experiences, perceptions, and perspectives.

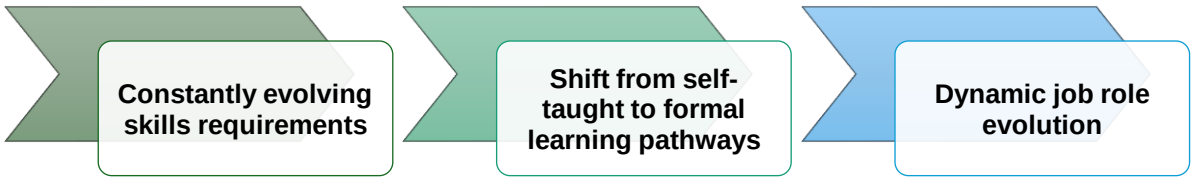
Thematic analysis was chosen because it allows for a structured, yet flexible approach to examining qualitative data. It enables researchers to move beyond surface-level responses and uncover underlying meanings, attitudes, and shared experiences. Through this process, the analysis highlights not only the challenges stakeholders face, but also the opportunities and strategies they identify in navigating the digital transformation of the sector.

The results that follow are organised around the main themes that emerged from the interviews. Each theme is supported by direct insights from participants, illustrating how stakeholders perceive the evolving role of digital skills, workforce adaptation, and organisational change within the W&R industry.

6.1 THEME 1: SKILLS EVOLUTION AND JOB ROLES

The findings revealed that the rise of e-commerce has significantly altered the skills landscape and job roles in the W&R sector. The emerging subthemes are outlined in Figure 9 and discussed thereafter.

Figure 9: Skills evolution and job roles



Source: Author's own consolidation.

6.1.1 Constantly evolving skills requirements

As new digital technologies are adopted, it is important to recognise that workforce skills will continue to evolve in parallel. This requires organisations to invest not only in training, but also in research and development to ensure they remain up to date with emerging competencies and industry demands. Participant 7 alluded:

> It has definitely changed, and I want to look at how the rise of digital has changed skill requirements. It has changed drastically. Even the things we are looking for now are different, because digital keeps evolving. However, when it comes to skills development, only recently have there been digital courses or degrees.

E-commerce roles increasingly demand adaptability, as the rapid pace of digital change has created an environment where skills that were considered relevant only a few years ago may already be outdated.

6.1.2 Shift from self-taught to formal learning pathways

Early entrants into e-commerce often came from a self-taught era, where employees were required to “sink or swim”, without the benefit of formal training opportunities. In contrast, recent years have seen the emergence of structured digital courses and academic qualifications, reflecting the maturation of the industry and the recognition of e-commerce as a specialised field requiring professional preparation. Participant 7 explained: “If you’re looking for people with more than seven years of experience, those people basically started in the self-taught era where you had to sink or swim and just figure things out on your own.” This highlights the clear shift from informal, experiential learning to more formalised and professional development pathways within the sector.

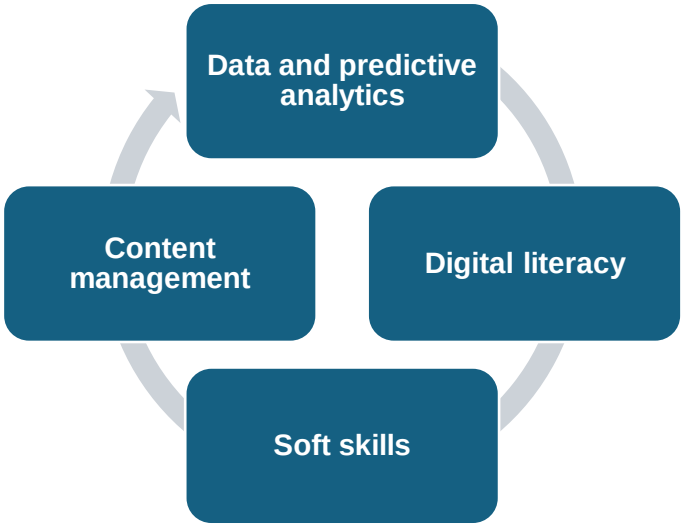
6.1.3 Dynamic job role evolution

The findings suggest that while certain roles have become central to e-commerce operations, the functions attached to these roles are shifting rapidly. This underscores the need for a workforce that not only acquires new skills, but also remains prepared for the continuous redefinition of responsibilities as the digital landscape evolves. Participant 8 reflected on this shift, stating: “One of the biggest things we’ve started looking for more so in the last year than before is previous knowledge of e-commerce or some understanding of websites.” This points to the growing expectation that employees bring foundational digital knowledge to their roles, even as the specific requirements continue to evolve.

6.2 THEME 2: CORE DIGITAL, TECHNICAL, AND SOFT SKILLS

The results (see Figure 10) indicated a growing centrality of digital, technical, and soft skills in shaping workforce readiness within e-commerce and retail.

Figure 10: Core digital, technical, and soft skills



Source: Author's own consolidation.

6.2.1 Data and predictive analysis

Data and predictive analytics have become central to today's retail environment. These skills not only drive the efficiency of e-commerce operations, but also reshape decision-making processes in traditional bricks-and-mortar retail. The emergence of decision science reflects a broader shift towards evidence-based and scientific approaches to business management, enabling organisations to respond more effectively to market changes and evolving consumer demand. Participant 1 highlighted this trend, noting:

> The use of data analytics and data science in decision-making, sometimes even called decision science, is growing. Every organisation is trying to make decisions that are more scientific, more evidence-based and they want to react quickly to changing trends and demand.

This demonstrates how data-driven insights are increasingly regarded as indispensable for maintaining competitiveness in the retail sector.

6.2.2 Content management

Content management emerged as a critical competency within e-commerce, with participants emphasising the importance of practical and up-to-date experience. Core skills, such as managing product listings, ensuring pricing accuracy, and maintaining high-quality images, remain central to successful e-commerce operations. However, these technical abilities must be complemented by agility, as new competencies quickly gain prominence in response to ongoing technological advancements. Participant 8 highlighted this dynamic:

> The main skill we focus on is whether someone has done any content management in the last two years. The reason we limit it to that time frame is that e-commerce is a constantly evolving business. As one skill becomes dominant, another quickly rises to take its place. That said, the foundation of any good e-commerce business remains the same: having the correct content, the correct pricing, and the correct images associated with each product.

This illustrates both the enduring importance of foundational content management skills and the sector's demand for adaptability to sustain competitiveness.

6.2.3 Digital literacy

The findings revealed that tasks once managed physically now increasingly require digital know-how. The workplace has reached a stage where digital competence is no longer optional, but has become an essential baseline skill for most employees. This signals the mainstreaming of digital literacy across all levels of the workforce, moving beyond specialist IT roles to become a core requirement in everyday business functions. Participant 4 reinforced this point:

> OK, yeah, definitely. There is a requirement for new skills. Most things now work electronically, which means you need to have knowledge of how to get things done digitally, rather than just physically. In the past, you didn't need much exposure to that, but now it's essential.

This illustrates how digital literacy has evolved into a fundamental competency that underpins both efficiency and employability in the modern retail sector.

6.2.4 Soft skills

Collaboration, adaptability and effective communication have been identified as critical soft skill competencies in the modern workplace, particularly in contexts where digital systems and cross-functional collaboration are prominent. Employees are expected to adjust to evolving processes, technologies and work environments. This aligns with broader industry trends where digital transformation is reshaping job roles and requires continuous learning. Participant 5 noted; "Yes, I think adaptability and communication are also very important. Effective communication is essential because you are not only interacting with your colleagues

but also with stakeholders. It's crucial to be clear and precise, particularly when logging a call or reporting an issue."

Other participants shared the same sentiments; participants such as 1, 6, 7 and 9 who further highlighted another critical soft skill ""Collaboration is a critical competency in this environment, as employees are required to work across diverse teams. Some teams are highly technical, while others may focus primarily on product development or other specialised functions. The ability to navigate and communicate effectively within these different contexts is key to successful teamwork and project execution."

From the results, it is clear that communication is not only about the exchange of information within teams ("colleagues") but also extends to broader organisational stakeholders.

6.3 THEME 3: BARRIERS TO DIGITAL SKILLS DEVELOPMENT

The findings showed that digital skills development in the W&R sector faces systemic, institutional, and practical barriers that hinder workforce readiness for e-commerce.

Figure 11: Barriers to digital skills development

Source: Author's own consolidation.

6.3.1 Limited or outdated training opportunities

The findings revealed a scarcity of relevant training opportunities for digital skills in retail, with many existing courses described as repetitive, overly basic, or outdated. For example, some programmes still emphasise website building, even though the industry now requires more advanced competencies, such as innovation, optimisation, and digital integration. This mismatch between training content and industry needs undermines employee preparedness and adaptability in a rapidly evolving environment. Participant 7 highlighted this frustration:

> The lack of courses or the repetitiveness of the courses available has been a challenge. When I decided to pursue a qualification, I thought, “It’s great that I have all this experience and I know how things work, but I need a qualification to back it up.” It was quite frustrating because what I was learning was very basic, extremely basic. E-commerce evolves quickly and you need to be agile. But when it comes to acquiring digital skills, the courses we face as barriers are not refined for current learning. They don’t really equip you to do your job at today’s pace. They’re outdated. For example, they’ll teach you how to build a website, and you’re just thinking, “That’s foundational. I don’t need to learn how to build a website. At this point, the website is already fully functional, the question is, what innovations can we add? What can we do next?” So, yes, there are a lot of barriers. The main barrier is acquiring skills that are actually relevant in the current e-commerce space.

Similarly, Participant 9 emphasised the complete absence of structured opportunities, stating: “No, there is no upskilling happening. There is no formal training, nothing at all. You just have to figure it out for yourself. If you want to upskill, you need to decide how you are going to do it.” Together, these responses underscore the urgent need for updated, industry-aligned training that moves beyond basic instruction and equips employees with relevant, future-orientated digital competencies.

6.3.2 Lack of established standards and guidelines

The findings highlighted a significant gap in the retail sector: the absence of clear unit standards and competency frameworks for digital skills. While traditional bricks-and-mortar retail has some standards, these are often underutilised, and within e-commerce there are virtually none. This lack of structured guidance creates uncertainty about which digital skills are most relevant and how they should be formally developed, leaving employers and employees without clear pathways for training and professional growth. Participant 6 asserted:

> Yeah, I think this is an emerging area. When it comes to skills, there really aren't any established standards yet. Even in bricks-and-mortar retail, if you look at the unit standards that the industry has, they exist but no one is really training against them. On the e-commerce side, it's even less developed, we don't even have unit standards to begin with. There are no guidelines that say, for example, "This is how to be a product manager for retail" or "This is how to be…" And maybe that's the real question.

This emphasizes the urgent need for standardised competency frameworks that can guide training providers and industry in preparing a digitally capable workforce.

6.3.3 Reliance on self-learning and informal upskilling

The findings revealed a notable absence of formal upskilling initiatives in the retail sector, which forces employees to take responsibility for their own development. This creates inequities, as individuals with greater resources or personal initiative are able to advance, while others are left behind. The trend also reflects a broader "sink or swim" culture, where structured organisational support is lacking and employees are left to navigate skill development independently.

6.3.4 On-the-job learning versus formal training

Participants 1 and 3 pointed out that while many courses remain largely theoretical, meaningful skill development tends to occur directly on the job. They shared:

> But what I've also seen is that sometimes we get caught in a hamster wheel of thinking that once you've attended training, you've mastered the skill. In reality, these skills are often learnt more effectively on the job. The more you do, the more you learn, rather than just sitting in a class or workshop. (Participant 1)

> Yeah, OK, to a certain extent, sometimes when you enrol in a course, it's all about the technical or academic side. But then you don't actually implement what you learnt in your day-to-day work. I think that's the issue most of the time; courses show you "This is how it's done in the book", but what really matters is, "How can I implement this in my day-to-day job?" (Participant 3)

Practical experience, experimentation, and problem-solving in real workplace contexts were described as more effective than classroom-style learning. However, despite the value of

applied learning, organisations rarely provide structured opportunities for employees to gain such hands-on experience in a systematic way.

6.3.5 Resource and accessibility constraints

Financial limitations and budget prioritisation also pose significant barriers to digital skills development, as highlighted by Participant 3:

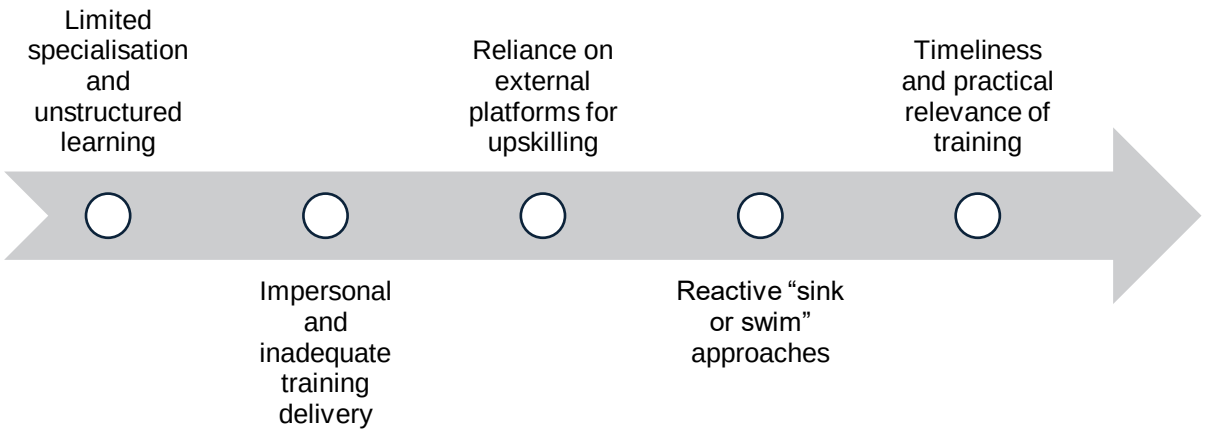
> [You get told] “You have to wait a year” and that becomes a constraint. Other times, they’ll tell you the budget doesn’t allow it or that a master’s programme, for instance, is only available for senior managers. So, there are constraints around training, budgets, and your position in the organisation.

Training opportunities such as master’s programmes are often reserved for senior managers, excluding junior staff from meaningful upskilling pathways. In some cases, employees must wait months or even years before being considered for training opportunities, a delay that slows skills acquisition and reduces organisational competitiveness.

6.4 THEME 4: GAPS IN TRAINING AND ORGANISATIONAL PRIORITIES

The findings highlighted significant gaps between organisational training practices and the realities of e-commerce skill demands.

Figure 12: Gaps in training and organisational priorities



Source: Author’s own consolidation.

6.4.1 Limited specialisation and unstructured learning

E-commerce remains a relatively new field, with few established specialists to guide structured development. As a result, employees often “learn as they go”, which leaves much of skill

acquisition unstructured and inconsistent across organisations. This reflects a broader gap in employers' ability to design formalised learning pathways that align with evolving digital roles. Participant 2 mentioned: "There aren't really specialists yet, so I think that's why we … well, we just learn as we go. I think that's why it feels a bit odd." This highlights the novelty of e-commerce in the South African context and the urgent need for structured, role-specific training frameworks to professionalise the sector.

6.4.2 Impersonal and inadequate training delivery

The findings pointed to the impersonal nature of many training initiatives, which are often reduced to self-directed online modules with minimal interaction or support. While such approaches may be convenient, they risk becoming superficial, leaving employees without the guidance needed to apply new skills effectively. The absence of ongoing support and reinforcement further weakens training effectiveness and prevents employees from keeping pace with the rapid evolution of digital tools and platforms. Participant 5 described this limitation:

> I'd say the gap is in the way they're trained. As I mentioned, it feels too impersonal like it's just, "Go on the PC or your phone, do what you need to do, and that's it." There should be follow-ups whenever there are training updates or changes that need to be implemented. That would be best.

This illustrates how a lack of human-centred approaches to training undermines long-term learning outcomes and points to the need for more interactive, engaging, and continuous development models.

6.4.3 Reliance on external platforms for upskilling

Organisations often depend on external providers, such as Shopify, Google, Meta, and TikTok, for training initiatives. While these resources are valuable and provide access to global best practices, they are primarily vendor-driven and tend to be generic, rather than tailored to the specific needs of individual organisations or their employees. This reliance limits the extent to which training addresses context-specific challenges within the local retail environment. Notable feedback from the interviews included:

> We currently rely on the actual platforms and channels to upskill us. For instance, if you are using Shopify as your e-commerce tool, Shopify will host a seminar or a training programme and say, "Hey, if you're using Shopify or Magento, please join us.

We're going to run a seminar where we'll explain our latest updates, show you what you'll get if you migrate to the new version, and how things will work." So, we rely heavily on these platforms and channels. The same applies to marketing in e-commerce: we rely on Google, Meta, TikTok; they're the ones that run training initiatives. (Participant 7)

As a company, we don't really do formal training. We tend to drop people in the deep end and allow them to sink or swim, so we can see what their actual competency is. In interviews, everyone can say, "Oh yes, I know exactly how to do this" or "I've worked on Shopify before." But it's only when you put them in the hot seat that you really see what training they've actually had. Shopify, for example, has a really good academy programme that runs through their platform. If you're a merchant selling through Shopify, you get free access to their training materials, which basically cover all the basics of using Shopify. (Participant 8)

6.4.4 Reactive "sink or swim" approaches

The findings revealed a reliance on trial-and-error learning, where employees are often assigned tasks without structured preparation or adequate training. This reactive approach exposes skill gaps only after employees are already in critical roles, which not only limits productivity, but also increases the likelihood of costly mistakes. The absence of proactive skill development highlights the risks of placing employees in high-responsibility positions without the necessary competencies in place.

6.4.5 Timeliness and practical relevance of training

The findings indicated that training is often delayed, with new hires sometimes waiting weeks before receiving formal instruction. Even when training is eventually provided, it is frequently criticised for being overly theoretical and superficial, offering limited practical application. As a result, employees are often left unprepared for real workplace challenges, undermining both their confidence and their ability to perform effectively. According to Participant 10:

Yes, there have been quite a few gaps with regard to the training programmes. One of the issues is that the trainings are not provided in a timely manner. For example, when we hire new employees, they may work for almost a month without receiving proper training. That is a big challenge. Another issue is that you cannot just plan training for one individual; it has to be done in a group, which is more cost-effective. However, some of the training sessions don't provide the right skills. They only give you a brief

> overview they tell you what to do, but when you get to the actual workplace, the tasks are more detailed and quite different from what was taught. So, basically, the problem is that most of the training is theoretical, with very little practical training taking place, and that's a major challenge.

6.5 THEME 5: FUTURE SKILLS DEVELOPMENT NEEDS

The findings demonstrated that preparing for the future of retail requires strategic investment in digital skills and stronger alignment between academic preparation and workplace realities.

6.5.1 Strategic investment in electronic commerce skills

The findings emphasised the need for organisations to treat e-commerce as a core function on par with buying, planning, human resources (HR), and marketing. Most participants highlighted that within the next decade, retail could shift primarily to online operations, meaning that companies that underinvest in e-commerce skills today risk being left behind in an increasingly digital marketplace. Marketing was particularly noted as an area requiring stronger integration with e-commerce expertise, underscoring the importance of adopting digital-first approaches to ensure competitiveness and sustainable growth.

6.5.2 Current shortages of skilled employees

The findings revealed a major gap between industry demand for digital expertise and the current capacity of the workforce. Participant 5 noted:

> There should be significant investment in e-commerce, just as there is in buying, planning, HR, and marketing. I believe marketing in particular should place greater emphasis on e-commerce, because in the future, some companies may focus solely on that. We need to be prepared for the rapid changes that could take place. If we take e-commerce lightly, 10 years from now we may find that all major retailers are operating exclusively online, while others are left behind. That's why I think it's important not only to focus on development, but also on investing in training so that more people can gain the necessary skills in e-commerce. At the moment, in my company, only two people have that expertise and even within the marketing department, it's just those two.

This points to a critical shortage of talent in the sector and highlights the urgency of training more employees in digital retail competencies to meet the growing demands of the marketplace.

6.5.3 Bridging the gap between academia and industry

According to Participant 10:

> The only thing I can add is some advice based on what I've noticed. We often have individuals who come from universities with only academic experience, and who haven't yet worked in a real workplace. My advice would be that it's not the same at all. I have been there myself; I came into the work environment with the mindset of, "OK, I have done this, this, and this theoretically at university." But when you enter the workplace, it's a totally different experience. What I would advise is to take the time to learn about the organisation and how it really operates.

This mismatch between academic training and workplace expectations means that new employees must spend additional time adapting to real-world contexts before they can contribute effectively. The findings point to the need for stronger work-integrated learning (WIL) and practical training opportunities to ensure that graduates are workplace-ready and able to meet the immediate demands of the retail sector.

6.6 THEME 6: ROLE OF TECHNOLOGY (ARTIFICIAL INTELLIGENCE, AUTOMATION, PLATFORMS)

The study's findings revealed how technological systems are reshaping retail operations, bringing both efficiency gains and operational challenges.

6.6.1 Transition to advanced systems

Participant 2 described the migration from an outdated in-house planning tool to a more advanced system designed for budgeting, forecasting, and trade planning. While the transition has been resource-intensive and accompanied by delays due to technical "teething issues", the new platform is expected to significantly enhance usability, accessibility, and overall efficiency. Importantly, the system's user-friendly design reduces the steep learning curve typically faced by new employees, enabling fresh graduates and new hires to integrate more quickly into digital workflows and contribute effectively.

> So, I think, yes, we are definitely transitioning from the old in-house planning system, the one we used for budget planning, current trade, and forecasting to a more advanced system. This has been a major focus since the beginning of the year. We have attended many training sessions and spent a lot of time testing the new system. It has been a hectic five months because it requires us to step away from our desks to

run these tests. Even when testing online at our desks, it still takes a lot of time, since we're essentially simulating real planning on the live test system. There have been many teething issues. The system was supposed to go live in March, but due to multiple bugs and challenges, the roll-out was delayed to June. Even now, based on the current progress, I doubt it will go live in June; it might be pushed to September or later. That said, the new system is much more user-friendly compared to the old one. Navigation is clearer, and it's easier to use, even for someone coming straight out of tertiary education. Unlike the old system, which required a lot of training just to understand, this one is simpler to work with. In the long run, I think this will be very beneficial, especially for new employees entering the business, whether fresh graduates or people joining from other companies. (Participant 2)

6.6.2 Enhanced collaboration and transparency

Technology enables real-time alignment between stores, head offices, and warehouses. This integration ensures all stakeholders have access to the same information and data visibility, thereby reducing inefficiencies and enhancing decision-making across supply chains. Such systems exemplify the way digital platforms are transforming retail operations into interconnected ecosystems, rather than isolated, siloed functions.

> We can go to the stores as frequently as possible, and we can also go to the warehouses as often as needed. But now we have this system that collaborates between the stores, the head office, and the warehouse. So, everything is aligned, I don't know if "matched" is the right word, but the point is that we all share the same view. The stores have the same view, we at the head office have the same view, and the warehouse also has the same view. (Participant 3)

6.6.3 Operational risks and reliability issues

Participant 4's experience with an e-commerce grocery app highlights the risks associated with over-reliance on digital systems. Instances like payment failures, where money is deducted but not reflected, and frequent system crashes demonstrate how technical glitches directly undermine customer trust and satisfaction. These challenges underscore the critical importance of robust system maintenance, thorough testing, and responsive customer support to safeguard service reliability and protect brand reputation in highly competitive digital marketplaces.

> OK, so I think I mentioned that it was an online grocery store, and we had an app where customers used to place their orders. We often faced issues, like a customer making a payment and the money leaving their account, but it wouldn't reflect on our side, so the order wouldn't come through. And then, from time to time, the app just wouldn't work. You'd log in and it would crash, sometimes showing an error code, though I can't recall exactly which error code it displayed. (Participant 4)

6.6 CONCLUSION

The qualitative findings highlight that the digital transformation of the W&R sector has fundamentally reshaped workforce requirements, creating both opportunities and challenges. Skills once considered peripheral have now become core to organisational competitiveness, with digital literacy, content management, and data analytics emerging as baseline expectations across multiple job roles. At the same time, the sector faces continuous job role redefinition, requiring employees to be agile learners capable of adapting to an evolving digital landscape. This underscores the need for strategic investment in structured training pathways and more formalised standards that reflect the realities of modern e-commerce.

Despite growing recognition of the importance of digital skills, significant barriers continue to undermine workforce preparedness. Outdated training content, the absence of competency frameworks, financial constraints, and reliance on self-directed learning limit employees' ability to keep pace with industry demands. The prevalence of informal "sink or swim" approaches and delayed or overly theoretical training further widens the gap between employee readiness and organisational needs. These findings point to a systemic issue: the lack of alignment between training provision, industry requirements, and the realities of digital-first retail. Addressing these gaps is critical to ensuring both organisational resilience and employee development in the long term.

Finally, the role of technology is both an enabler and a challenge. Advanced platforms are enhancing collaboration, transparency, and decision-making, yet technical failures highlight the risks of over-dependence on digital systems without adequate infrastructure and support. To prepare for a future where retail may operate primarily online, organisations must not only invest in robust systems, but also integrate e-commerce as a core function on par with buying, planning, HR, and marketing. Strengthening collaboration between industry, higher education, and government will be essential to bridging current skill shortages, fostering inclusive workforce development, and ensuring South Africa's retail sector remains competitive in an increasingly digital global economy.

7 DISCUSSION OF FINDINGS IN RELATION TO RESEARCH OBJECTIVES

This section discusses the findings of the study in relation to the research objectives. The aim is to show how the results address each objective and to highlight their relevance for the W&R sector.

7.1 OBJECTIVE ONE: TO ASSESS THE INFLUENCE OF ELECTRONIC COMMERCE GROWTH ON WORKFORCE SKILLS IN THE WHOLESALE AND RETAIL SECTOR

The findings from both the quantitative and qualitative analyses converge to highlight the profound influence of e-commerce growth on workforce skills within the South African W&R sector. The quantitative data reveals that majority of respondents (over 70%) acknowledged a significant increase in the demand for digital skills and recognised that job roles have shifted as a result of digital transformation. This aligns closely with qualitative insights, where participants emphasised that roles in e-commerce are rapidly evolving, requiring not only technical competencies, but also adaptability and continuous learning. Interviewees highlighted that skills once considered supplementary, such as content management, data analytics, and digital literacy, have become essential baseline requirements, reinforcing the quantitative finding that organisations are increasingly prioritising digital competencies.

Moreover, both datasets illustrate the uneven nature of workforce preparedness. While many employees expressed personal confidence in their ability to adapt to digital transformation, qualitative accounts revealed persistent systemic barriers, including outdated training content, limited structured upskilling opportunities, and reliance on self-directed or “sink or swim” learning. This provides depth to the quantitative observation that confidence levels are moderate, with some respondents neutral or uncertain about their digital capabilities. The qualitative data further illuminates why this discrepancy exists: without formalised pathways or industry-aligned competency frameworks, employees are often left to navigate the rapidly evolving digital landscape independently.

Together, the quantitative and qualitative results affirm that e-commerce growth has not only increased the technical skill requirements of the workforce, but also elevated the importance of soft skills, such as adaptability, problem-solving, and critical thinking. The convergence of these findings highlights a clear trend: workforce skills are being reshaped by digitalisation, yet organisational support and training provision have not fully caught up with these evolving demands. Ensuring that employees are equipped to meet the expectations of a digitally

transformed retail environment and for maintaining organisational competitiveness in the rapidly growing e-commerce sector is crucial.

7.2 OBJECTIVE TWO: TO INVESTIGATE THE CHALLENGES ASSOCIATED WITH DIGITAL SKILL DEVELOPMENT WITHIN THE WHOLESALE AND RETAIL SECTOR

The investigation into challenges associated with digital skill development revealed a consistent picture across both quantitative and qualitative findings. The quantitative results indicate that access to training opportunities, high costs, time constraints, and limited organisational support are widely perceived as barriers, with a substantial proportion of respondents agreeing or strongly agreeing that these factors impede their ability to upskill. The qualitative data provides depth and context to these statistics, with interviewees describing the scarcity of relevant, up-to-date training, the absence of structured competency frameworks, and the reliance on informal, self-directed learning approaches. Participants highlighted that many courses remain theoretical, repetitive, or misaligned with the practical demands of e-commerce, while employees are often left to navigate their skill development independently, reflecting a “sink or swim” culture.

Both datasets converge in demonstrating that these barriers not only slow individual skill acquisition, but also limit organisational capacity to respond effectively to digital transformation. For example, the quantitative findings show that less than half of respondents felt their organisations provided adequate resources for digital skills development, while the qualitative insights illustrate that budgetary constraints and hierarchical prioritisation of training often restrict opportunities to senior staff, leaving junior employees underprepared. Additionally, the qualitative accounts emphasise the mismatch between academic preparation and workplace realities, underscoring the need for more applied, context-specific learning initiatives.

The findings highlight that digital skill development within the W&R sector is constrained by structural, financial, and practical barriers. The convergence of quantitative and qualitative evidence reveals that addressing these challenges requires targeted, timely, and industry-aligned interventions to ensure employees acquire both technical and adaptive skills, thereby strengthening organisational resilience and competitiveness in an increasingly digital marketplace.

7.3 OBJECTIVE THREE: TO IDENTIFY KEY COMPETENCIES REQUIRED FOR SUCCESS IN THE DIGITAL MARKETPLACE IN THE WHOLESALE AND RETAIL SECTOR

The analysis of both quantitative and qualitative data demonstrates the nature of competencies required for success in the digital marketplace within the W&R sector. The quantitative findings reveal strong recognition among respondents of the importance of technical skills, such as proficiency in data analytics, e-commerce platforms, and digital tools, alongside soft skills like adaptability, problem-solving, and effective communication. Similarly, the qualitative interviews reinforced this view, with participants emphasising that roles in e-commerce now demand not only technical expertise, but also agility, critical thinking, and the ability to apply learning in real-world contexts. For example, stakeholders highlighted the enduring importance of foundational skills, such as content management and pricing accuracy, while also stressing the need to continuously acquire emerging competencies to remain competitive.

The convergence between the two datasets illustrates that digital competence is no longer optional, but a baseline expectation, with both technical and cognitive skills seen as complementary. The quantitative data suggests that while many organisations acknowledge the value of these competencies, not all actively prioritise them in recruitment or training, a theme echoed qualitatively, where participants described reliance on informal learning, vendor-driven training platforms, and a trial-and-error approach to skill acquisition. These findings reveal a critical insight: the sector recognises the skill requirements for the digital marketplace, yet formal structures for systematically developing these competencies remain underdeveloped.

The combined evidence highlights that success in the digitally driven W&R environment requires a strategic balance of technical proficiency, analytical capability, and adaptive soft skills. Organisations that effectively foster these competencies through targeted training, practical experience, and structured learning pathways are better positioned to maintain competitiveness, while employees who develop both foundational and emerging digital skills are more likely to thrive in an evolving e-commerce landscape.

7.4 OBJECTIVE FOUR: TO EXAMINE THE ROLE OF TECHNOLOGY IN WORKFORCE TRANSFORMATION WITHIN THE WHOLESALE AND RETAIL SECTOR

The findings from the quantitative and qualitative analyses highlight the transformative impact of technology on the workforce in the W&R sector. The quantitative results indicate that most respondents recognised the introduction of emerging technologies, such as automation, AI, and digital platforms, as a driver of new skill demands, productivity gains, and shifts in traditional job roles. This aligns closely with the qualitative insights, where participants described the adoption of advanced systems and digital platforms as both an enabler and a challenge. Interviewees emphasised that technology enhances collaboration, transparency, and real-time decision-making across stores, head offices, and warehouses, while also streamlining operational processes and supporting data-driven management.

Furthermore, the convergence between the datasets reveals the dual nature of technological transformation. While technology provides efficiency and supports workforce adaptation, qualitative accounts highlighted operational risks, system failures, and steep learning curves that can disrupt workflows and undermine employee confidence. The quantitative data similarly reflects mixed perceptions regarding organisational support for technology adoption, with some employees feeling unprepared despite recognising its importance. This illustrates that the benefits of technological integration are contingent upon robust infrastructure, effective training, and proactive change management, rather than technology implementation alone.

The datasets emphasise that technology is a central driver of workforce transformation in the sector, reshaping roles, skills requirements, and organisational processes. For employees to thrive and for organisations to remain competitive, technological adoption must be accompanied by targeted upskilling, structured reskilling programmes, and ongoing support, ensuring that both human capital and digital tools are leveraged synergistically in the evolving e-commerce landscape.

7.5 OBJECTIVE FIVE: TO PROPOSE EFFECTIVE STRATEGIES FOR WORKFORCE ADAPTATION IN THE WHOLESALE AND RETAIL SECTOR

The quantitative and qualitative analyses' findings reveal that effective workforce adaptation in the W&R sector requires a combination of organisational commitment, structured training, and individual initiative. The quantitative data indicates that while many employees felt personally confident in their ability to adapt to digital transformation, fewer reported that their

organisations provide sufficient reskilling and upskilling support. This aligns with qualitative insights, where participants described inconsistent or reactive approaches to workforce development, such as delayed training, reliance on external platforms, and informal “sink or swim” methods, which often leave employees underprepared for evolving roles.

Both datasets converge in highlighting that successful adaptation depends on proactive, structured strategies. Participants stressed the importance of practical, hands-on training, WIL, and role-specific development pathways that align with current and future industry needs. Moreover, fostering a culture of continuous learning, supported by clear organisational priorities and accessible resources, was identified as essential for bridging skill gaps and enhancing workforce resilience. Quantitative evidence of moderate agreement regarding organisational support reinforces the qualitative finding that while awareness of workforce adaptation is growing, implementation remains uneven and requires deliberate planning.

The workforce adaptation is most effective when organisations integrate strategic reskilling initiatives, supportive policies, and practical learning opportunities, while employees remain engaged and proactive in developing both technical and soft skills. Such coordinated efforts enable organisations to maintain competitiveness in a rapidly digitalising retail environment and ensure that employees are equipped to navigate ongoing technological and operational changes.

Findings also show that individual readiness is high (67.1% confident in adapting), but organisational support is inconsistent. The proposed effective strategies should include:

- Development of industry-specific digital unit standards;
- Timely, practical, and continuous training, not just theoretical modules;
- Stronger partnerships between academia and industry to bridge theory-practice gaps;
- Embedding reskilling and upskilling as ongoing processes, supported by mentorship and applied learning opportunities; and
- Investment in future-focused skills (AI, data, e-commerce marketing) to prepare for long-term transformation.

8 RECOMMENDATIONS

The proposed recommendations are based on the findings gathered from the two datasets. As e-commerce is expected to grow in South Africa (Cowling, 2025), it is imperative that the following recommendations be considered as a strategic road map for strengthening workforce readiness and enhancing competitiveness within the W&R sector. These

recommendations are intended to guide industry leaders, policymakers, and academic institutions in addressing the identified skills gaps, supporting inclusive workforce development and ensuring that employees are equipped to adapt to the demands of a digital marketplace. Recommendations are provided for three sectors, namely industry, higher education, and government, as these represent the key players in shaping the future of retail. Each sector has a distinct, yet interconnected role to play. Industry is responsible for implementing practical upskilling initiatives and fostering workplace innovation; higher education must design and deliver curricula that align with emerging digital skill requirements; and government must create enabling policies, provide funding, and ensure equitable access to opportunities. Collectively, their collaboration is essential to drive sustainable transformation in the sector and to prepare the workforce for the challenges and opportunities of the digital economy.

8.1 WORKFORCE TRANSFORMATION

Due to rapid technological advancements, the workforce is bound to transition from traditional roles into digitally enabled functions that demand new skills, adaptability, and continuous learning. Automation, AI, and e-commerce platforms are reshaping the nature of work, requiring employees to move beyond manual and routine tasks towards roles that involve problem-solving, data interpretation, digital communication, and customer experience management. This transformation is not only about replacing outdated skills, but also about redesigning jobs to integrate human and technological capabilities more effectively.

For organisations, workforce transformation means investing in structured reskilling and upskilling programmes, redesigning roles to fit digital processes, and fostering a culture that embraces change. Contrastingly, employees must demonstrate flexibility, a willingness to learn, and the ability to adapt to new tools and systems. The transformation also extends to leadership, which must adopt forward-thinking strategies that prepare their teams for ongoing disruption and position their organisations competitively within the digital economy.

At a broader level, this transition requires collaboration between government, academia, and industry stakeholders to ensure inclusive access to training, the development of future-ready curricula, and the alignment of skills development with emerging labour market demands. Workforce transformation is not only a response to technological change, but also a proactive strategy to build resilience, enhance productivity, and secure long-term sustainability in an evolving global marketplace.

Table 4: Workforce transformation recommendations

Organisations	Academia	Government	W&R SETA
Develop structured transition pathways for roles most at risk (e.g., train cashiers to customer service agents, pickers or online support roles).	Embed workplace simulations into curricula (e.g., running a mock online store).	Develop national e-commerce workforce strategies to guide industries through digital transitions.	Facilitate collaboration between organisations, academia, and government to align training programmes with industry needs.
Introduce job redesign programmes to combine traditional retail knowledge with digital functions.	Introduce hybrid retail modules combining operations, logistics, and digital marketing.	Incentivise retailers to reskill displaced workers (e.g., transform cashiers to customer service or online fulfilment roles).	
Encourage internal mobility by reskilling existing staff for emerging e-commerce functions.		Support small and medium enterprises and township retailers with grants to digitise and train their workforce.	

Source: Author's own consolidation.

8.2 CRITICAL SKILLS FOR THE DIGITAL MARKETPLACE

Several critical skills have been identified as essential for thriving in the digital marketplace. However, achieving these skills requires coordinated efforts across multiple sectors, as no single sector can address all the needs alone. Consequently, targeted recommendations are provided for organisations, academia, government, and the W&R SETA.

8.2.1 Organisations

Organisations must implement mandatory digital literacy programmes covering tools like Excel, data analytics, platform management, and the fundamentals of digital marketing. Employees should be encouraged to pursue certification through vendor-accredited platforms to validate their skills. Additionally, soft skills training modules focusing on adaptability, resilience, teamwork, and digital communication should be embedded into employee development programmes.

8.2.2 Academia

Academic institutions should revise curricula to emphasise data-driven retail, including dashboards, analytics, and forecasting techniques. Partnerships with industry are crucial to provide students with practical experience, such as live case studies with local retailers, ensuring that graduates are workplace-ready and aligned with industry needs.

8.2.3 Government

Government initiatives must focus on updating unit standards in collaboration with SETAs for e-commerce, digital marketing, and retail analytics. The launch or expansion of national digital skills academies through programmes like the Youth Employment Service as well as technical vocational education and training (TVET) colleges should include training on platforms including Shopify, SAP, and data analytics tools. Furthermore, tax rebates or subsidies could incentivise retailers to invest in employee upskilling and foster a digitally competent workforce.

8.2.4 Wholesale and Retail Sector Education and Training Authority

The W&R SETA can play a pivotal role by designing sector-specific upskilling programmes that bridge current skills gaps in the W&R sector. This includes developing accredited training courses, facilitating industry-academia partnerships for practical learning, and supporting organisations with frameworks for workforce transformation. Additionally, the W&R SETA can monitor skills trends, provide funding for digital literacy initiatives, and promote workforce adaptability to ensure that employees remain competitive in a rapidly evolving digital marketplace.

8.3 CHALLENGES IN DIGITAL SKILL DEVELOPMENT

Developing digital skills in the W&R sector presents several challenges that require coordinated action across organisations, academia, government, and the W&R SETA. Organisations can address these challenges by providing dedicated time allowances, such as learning hours or digital Fridays, to encourage employee upskilling. Training should be tiered, offering basic digital literacy for frontline staff and advanced analytics for specialists, and must be practical and applied, using real data or case simulations, rather than purely theoretical content.

Academic institutions can strengthen WIL by exposing students to live retail systems, while also building stronger partnerships with SETAs and private providers to address funding gaps that hinder access to digital skills development. Government interventions are critical to supplement sector efforts. Funding schemes can enable retailers to conduct in-house training or partner with universities and TVET colleges. Public-private partnerships can support digital bootcamps co-funded with large retailers, and targeted programmes for older employees can bridge generational digital divides, ensuring inclusivity in upskilling initiatives.

The W&R SETA can play a central role in overcoming these challenges by providing funding support for sector-specific digital training programmes, facilitating collaboration between

industry and academic institutions, and developing frameworks to monitor progress in digital skills acquisition. By offering guidance, accreditation, and strategic oversight, the W&R SETA can help ensure that employees across the sector gain relevant, practical, and up-to-date digital competencies to remain competitive in a rapidly evolving marketplace.

8.4 ROLE OF TECHNOLOGY IN WORKFORCE SHIFTS

Table 5: Technology in workforce shifts

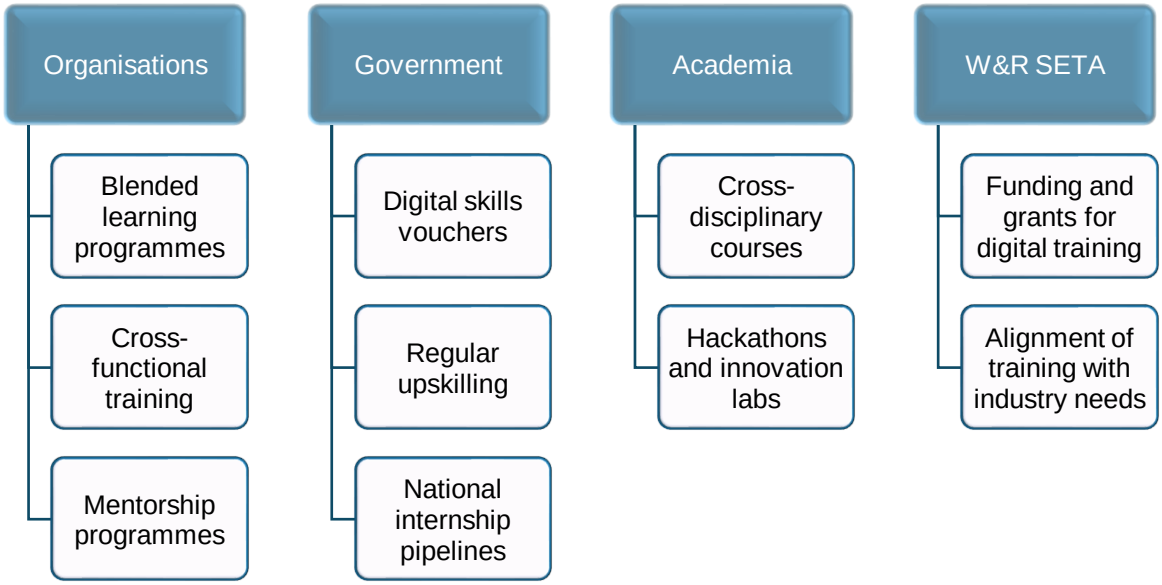
Sector	Role of technology in workforce shifts
Organisations	Conduct regular system training refreshers when upgrading software.
	Use AI as an augmentation tool, ensuring staff are trained to interpret and validate outputs, rather than fearing replacement.
	Invest in reliable IT infrastructure to reduce downtime and workforce frustration.
Academia	Teach students how to use common industry platforms, such as SAP, Shopify, Power BI, and SQL before graduation.
	Include AI in retail modules so graduates understand how automation complements human work.
Government	Expand affordable broadband access to underserved regions to reduce the digital divide in retail operations.
	Invest in national e-commerce platforms or frameworks that local businesses can plug into.
	Ensure South African workers are prepared for AI-driven economies through AI literacy programmes at community and university level.
W&R SETA	Develop sector-specific digital and AI upskilling programmes to prepare employees for technology-driven roles.
	Monitor technology trends and advise on workforce transformation, ensuring training programmes remain relevant and aligned with emerging digital tools and AI applications.
	Facilitate collaboration between industry, academia, and government to integrate technology adoption into workforce strategies.

Source: Author's own consolidation.

8.5 WORKFORCE ADAPTATION AND TRAINING STRATEGIES

Organisations can play a key role in digital skills development by introducing blended learning programmes that combine online and in-person training, implementing cross-functional training to broaden employee capabilities, and establishing mentorship programmes to support continuous learning and career growth. Government interventions are equally important, including the provision of digital skills vouchers to increase access to training, regular upskilling initiatives to ensure workforce adaptability, and the creation of national internship pipelines to provide practical experience for young professionals. Academia can contribute by offering cross-disciplinary courses that integrate digital competencies across fields and by creating hackathons and innovation labs that encourage problem-solving and entrepreneurial thinking. Finally, the W&R SETA can support the sector by funding and providing grants for digital training, while ensuring that training programmes remain aligned with the evolving needs of industry.

Figure 13: Workforce adaptation and training strategies

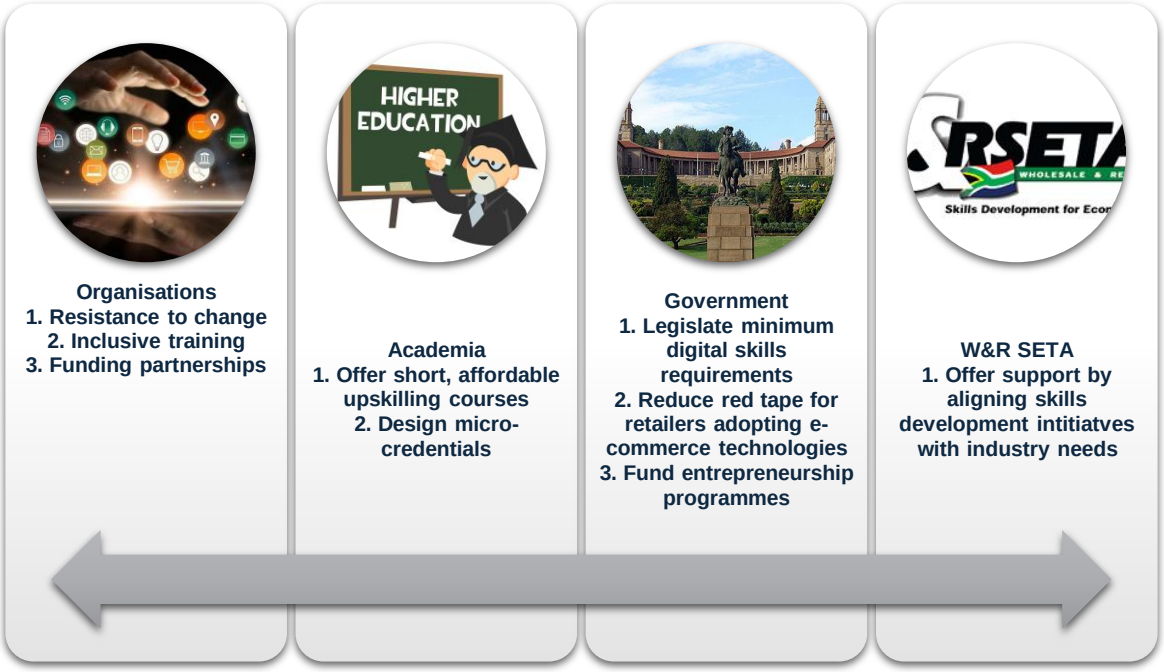


Source: Author's own consolidation.

8.6 BARRIERS TO ELECTRONIC COMMERCE TRANSFORMATION

Barriers to e-commerce transformation exist across multiple stakeholders, with organisations often facing resistance to change, which slows the adoption of new technologies. To address this, inclusive training initiatives are needed to ensure all employees can participate in the digital transition, while funding partnerships can help organisations overcome resource constraints. Academia can contribute by offering short, affordable upskilling courses and designing micro-credentials that provide targeted, industry-relevant skills. Government plays a critical role by legislating minimum digital skills requirements, reducing regulatory red tape for retailers adopting e-commerce technologies, and funding entrepreneurship programmes to encourage innovation. The W&R SETA, as a sectoral authority, can support these efforts by aligning skills development initiatives with industry needs and creating pathways for workforce readiness in the digital economy.

Figure 14: Barriers to electronic commerce transformation



Source: Author's own consolidation

8.7 FUTURE WORKFORCE NEEDS

Organisations are encouraged to create future skills road maps that align with emerging e-commerce trends, including AI, logistics automation, and digital marketing. Hiring strategies should value potential and adaptability alongside technical skills, with robust internal training programmes to upskill employees. Additionally, organisations can support continuous learning by providing bursaries and sponsorships, fostering a culture of growth and innovation. Academia plays a complementary role by developing future-ready curricula that integrate retail management, IT, and data analytics, while promoting internships and graduate programmes that focus on e-commerce operations, rather than traditional store roles. Lifelong learning pathways should also be established, allowing alumni to return for refresher courses in digital skills. Government initiatives are critical for preparing future generations, integrating e-commerce, AI, and retail analytics into school and university programmes, funding ongoing reskilling opportunities, and establishing labour market observatories to forecast e-commerce job trends and guide policy. The W&R SETA can support these efforts by facilitating sector-wide skills development initiatives, coordinating partnerships between industry and academia, and providing targeted funding and certification programmes to ensure the workforce remains agile, digitally competent, and aligned with evolving e-commerce demands.

9 CONCLUSIONS

This study demonstrates that the rapid evolution of e-commerce is transforming South Africa's W&R sector, creating both opportunities and challenges for the workforce. The findings show that while employees are increasingly aware of the need to acquire digital and adaptive skills, organisational support, structured training, and accessible pathways to upskilling remain inconsistent. Therefore, the sector risks being constrained by a growing digital divide if urgent interventions are not prioritised.

To address these challenges, three key actions emerge as critical:

- First, strategic investment in digital skills development is essential. Training must go beyond technical competencies to also include soft skills, such as adaptability, problem-solving, and digital customer engagement.
- Second, partnerships between industry, government, and academic institutions are needed to align curricula with practical industry needs, ensuring that training is relevant, accessible, and future-focused. Additionally, a retail body is highly recommended to ensure that relevant gaps are being addressed holistically across the W&R sector.
- Third, inclusion must remain a priority. Digital opportunities should extend to rural and under-resourced communities to prevent further marginalisation and to unlock new pools of talent.

If adopted, these interventions can deliver tangible benefits. The sector will not only improve productivity and competitiveness, but also generate employment, promote inclusion, and drive socio-economic transformation. E-commerce should not be viewed simply as a technological shift, but as a catalyst for building a future-ready workforce that can thrive in a rapidly digitalising global marketplace.

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APPENDIX A: ETHICAL CLEARANCE

UNIVERSITY OF JOHANNESBURG

CBE RESEARCH ETHICS COMMITTEE

Dear Dr Semona Pillay and Dr Makhosazane Buthelezi

ETHICAL APPROVAL GRANTED FOR RESEARCH PROJECT

Decision: Clearance granted

This letter serves to confirm that the proposed research project indicated in the table below, has been reviewed by the School of Consumer Intelligence and Information Systems Research Ethics Committee of the University of Johannesburg. Ethical clearance is hereby granted and is valid for three years, from 15 March 2025 until 14 March 2028.

Applicant	Dr S Pillay; Dr Buthelezi
Supervisor/s	n/a
Student/staff number	720050646; 720078006
Title	Navigating the E-Commerce Evolution: Assessing Skills Implications and Workforce Adaptation in the Digital Marketplace
Decision date at meeting	14 March 2025
Reviewers	SCIISREC3cv1dr
Ethical clearance code	2025SCiiS002
Rating of application	CODE 01

CODE 01 – Approved
CODE 02 – Approved with suggestions/requirements with no re-submission
CODE 03 – Referred back
CODE 04 – Disapproved, cannot re-submit

The researcher/s may now commence with the study providing that:

1. The researcher/s understand the implications of any form of data breach and takes responsibility for any possible violation or any form of unethical research conduct. The onus is on the researcher/s to ensure that the project adheres to ethical research requirements.
2. The researcher/s will be conducting the study as set out in the approval application, i.e. Form_7a and/or Form_7b linked to the research proposal that was submitted by the researcher/s, together with supporting documents, primary data collection, and/or secondary data analysis.

APPENDIX B: SURVEY

College of Business and Economics, School of Consumer Behaviour and Information Systems

Marketing Department

COVER LETTER/INFORMATION LEAFLET

Dear Participant,

You are invited to participate in a study titled: **Navigating the e-commerce evolution: Assessing skills implications and workforce adaptation in the digital marketplace**. As e-commerce continues to grow, it is transforming traditional business practices and reshaping the skills required for success in the modern workforce. This study seeks to understand how the rise of e-commerce is impacting workforce skills, identify essential digital competencies, and explore effective strategies for workforce adaptation to these changes.

Your responses will provide valuable insights into the challenges and opportunities related to digital skill development, the influence of technology on job roles, and the support needed for successful workforce transformation. The information gathered will contribute to academic research and offer practical recommendations for organisations to better prepare and support their workforce in the evolving digital landscape.

Participation in this study is voluntary, and all responses will be treated confidentially. The survey should take approximately 10-15 minutes to complete. By participating, you will contribute to important research that aims to benefit both employees and organisations adapting to the digital marketplace.

Thank you for your time and valuable input. Your participation is greatly appreciated.

For further information, please feel free to contact the lead researcher with the following details:

Dr Semona Pillay
University of Johannesburg: Department of Marketing Management, Auckland Park
Mobile no.: +27 72 654 6357
Email: semonap@uj.ac.za

Dr Makhosazane Buthelezi
Durban University of Technology: Department of Marketing and Retail, ML Sultan Campus
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College of Business and Economics, School of Consumer Behaviour and Information Systems

Marketing Department

INFORMED CONSENT

Dear participant,

You are invited to participate in this research study titled: **Navigating the e-commerce evolution: Assessing skills implications and workforce adaptation in the digital marketplace.** This survey seeks to, first, assess the influence of e-commerce growth on workforce skills; second, investigate the challenges of digital skill development; third, identify key competencies for digital marketplace success; fourth, examine the role of technology in workforce transformation; and, fifth, evaluate workforce adaptation strategies. Your participation in this study is completely voluntary. There are no foreseeable risks associated with this project. However, if you feel uncomfortable answering any questions, you can withdraw from the survey at any point without a penalty.

I hereby consent to participate in this study.

Yes ☐

No ☐

QUESTIONNAIRE

Section A

*1 Do you work within the retail sector? (*Required)	
Select only one:	
O	Yes
O	No

*1. How long have you been working within retail? (*Required)	
Select only one:	
O	Less than one year
O	More than one year
O	More than three years
O	More than five years
O	More than ten years

*1. What is your current role?

*1. Which province are you from?	
Select only one	
O	KwaZulu-Natal
O	Free State
O	Mpumalanga
O	Limpopo
O	Gauteng
O	Northern Cape
O	North West
O	Western Cape

***2. Impact of e-Commerce on workforce skills** – to what extent do you agree or disagree with the following statements: (*Required)					
Select one per row:					
	Strongly disagree	Disagree	Neutral	Strongly agree	Agree
*The growth of e-commerce has significantly increased the demand for digital skills in my role.	O	O	O	O	O
*E-commerce has reshaped the skills required in my organisation.	O	O	O	O	O
*I feel confident that my current skill set meets the demands of the digital marketplace.	O	O	O	O	O
*The rise of e-commerce has led to a noticeable shift in job roles and responsibilities in my industry.	O	O	O	O	O
*The e-commerce evolution has created more opportunities for career advancement in my field.	O	O	O	O	O

***3. Challenges in digital skill development** – to what extent do you agree or disagree with the following statements: (*Required)					
Select one per row:					
	Strongly disagree	Disagree	Neutral	Strongly agree	Agree
*Access to training opportunities for digital skills is a challenge in my workplace.	O	O	O	O	O
*The cost of acquiring digital skills is a barrier for employees in my organisation.	O	O	O	O	O
*Time constraints make it difficult for me to pursue digital skill development.	O	O	O	O	O
*My organisation provides sufficient resources for employees to develop digital skills.	O	O	O	O	O
*There is a lack of clear guidance on what digital skills are most important for my role.	O	O	O	O	O

***4. Key competencies for digital marketplace success** – to what extent do you agree or disagree with the following statements: (*Required)					
Select one per row:					
	Strongly disagree	Disagree	Neutral	Strongly agree	Agree
*Technical skills (e.g., data analytics, e-commerce tools) are crucial for success in the digital marketplace.	O	O	O	O	O
*Soft skills (e.g., adaptability, communication) are equally important as technical skills in e-commerce roles.	O	O	O	O	O
*My role requires an understanding of e-commerce platforms and technologies.	O	O	O	O	O
*Problem-solving and critical thinking are essential competencies for navigating the digital marketplace.	O	O	O	O	O
*Employers in my industry prioritise digital skills when hiring new employees.	O	O	O	O	O

***5. Role of technology in workforce transformation** – to what extent do you agree or disagree with the following statements: (*Required)					
Select one per row:					
	Strongly disagree	Disagree	Neutral	Strongly agree	Agree
*Emerging technologies (e.g., AI, automation) have significantly impacted my daily work.	O	O	O	O	O
*The introduction of new technologies has made it necessary for me to acquire new skills.	O	O	O	O	O
*Technology adoption in my organisation has improved productivity and efficiency.	O	O	O	O	O
*The integration of advanced technology has reshaped traditional workforce roles in my organisation.	O	O	O	O	O
*My organisation is proactive in implementing technology to stay competitive in the digital marketplace.	O	O	O	O	O

***6. Workforce adaptation strategies** – to what extent do you agree or disagree with the following statements: (*Required)					
Select one per row:					
	Strongly disagree	Disagree	Neutral	Strongly agree	Agree
*My organisation has effective programmes in place for reskilling and upskilling employees.	O	O	O	O	O
*Workforce adaptation to digital transformation is a priority in my organisation.	O	O	O	O	O
*I feel supported by my employer in adapting to the demands of the digital marketplace.	O	O	O	O	O
*The training provided by my organisation is relevant to the evolving e-commerce landscape.	O	O	O	O	O
*I am confident in my ability to adapt to future changes in the digital marketplace.	O	O	O	O	O

Section B

*1. Please indicate your gender	
Select one.	
O	Female
O	Male
O	Prefer not to say

*1. Which of the following includes your age?	
Select one.	
O	18-24
O	25-34
O	35-44
O	45-54
O	55 and older

*1. What is your highest qualification?	
Select one.	
O	Below matric
O	Matric
O	Diploma
O	Degree
O	Postgraduate
O	Doctorate

*1. What is your level of income?	
Select one.	
O	R0-R5 000
O	R5 0000-R10 000
O	R11 000-R16 000
O	R17 000-R23 000
O	R24 000 and above

APPENDIX C: INTERVIEW GUIDE

To ensure comfortability of the interviewees, non-sensitive questions like name and company they work for will be asked. The conversation can be started by discussing general questions related to retail or e-commerce.

1. How has the rise of e-commerce changed the skill requirements in your organisation or industry?
2. Which job roles or functions have been most impacted by the shift to e-commerce?
3. What new skills have become critical due to e-commerce evolution?
4. What barriers do employees face when acquiring digital skills needed for e-commerce roles?
5. Are there any gaps in current training programmes for developing digital skills?
6. How do organisational priorities and resource constraints impact digital skill development?
7. What technical skills are essential for success in the digital marketplace?
8. Beyond technical skills, what soft skills are important?
9. How do you prioritise skill development for future success in e-commerce?
10. What technologies have had the most transformative impact on your workforce?
11. How do automation and AI influence job roles and skill requirements?
12. How does your organisation leverage technology to upskill employees?
13. What strategies have been effective in helping your workforce adapt to e-commerce demands?
14. How does your organisation support continuous learning and professional development?
15. What roles do partnerships (e.g., with training providers, industry bodies) play in workforce adaptation?
16. How do you envision the future workforce adapting to further advancements in e-commerce?
17. What recommendations would you make for organisations to address workforce challenges in the digital marketplace?