



TITLE

Exploring the Effects of Technological Change on the Changing Nature of Precarious Work
in the South African Retail Sector: The Case study of SACCAWU in eThekweni
Municipality, KwaZulu-Natal.

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DEDICATION

With sincere appreciation and love, I dedicate this work to my family. My deepest gratitude goes to my wonderful wife, Feza Mutachi, and our three remarkable children, Jemimah Kapele Mutachi, Emmanuel Kapele Mutachi, and Deborah Kapele Mutachi, whose unwavering support and love have been my greatest inspiration.

This work is also dedicated to the resilient and militant working class in South Africa, Africa, and around the world, whose labour and surplus value continue to be exploited by capitalists. May this work contribute to the broader debate on the effects of technological change on employment, deepen class consciousness among workers, and support the ongoing struggle for social justice.

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ABSTRACT

Technological change has significantly transformed and continues to shape various sectors, with the retail sector being no exception. The retail sector is going through a significant transition because of technological change brought about by advancements of the Fourth Industrial Revolution (4IR). This research explored the effects of technological change on the changing nature of work, focusing specifically on precarious work within the South African retail sector. Adopting a qualitative research approach and interpretive paradigm, the research utilised structured and semi-structured interviews to collect data from twenty respondents, members of the South African Commercial, Catering and Allied Workers Union (SACCAWU) who voluntarily participated in the research. The respondents, selected through purposive and snowball sampling techniques, worked in different departments at Makro, Builders, Melbro Wholesale, and Pick and Pay. Their roles included positions in receiving, management, human resources, front-end, liquor, general merchandise, food development, and telesales. The research was conducted in the eThekweni Municipality, KwaZulu-Natal, and employed thematic analysis to examine and interpret the data collected from respondents.

The analysis revealed that the technological innovations identified by the respondents such as mobile tills, green light technology, digital payment systems, chat applications, online shopping, automation, and artificial intelligence (AI) are affecting the nature of work and exacerbating existing precarious work conditions. Technological advancements in the retail sector have led to substantial disruptions, resulting in greater labour flexibility and increased instability in employment contracts, wages, and job roles. Workers now face more unpredictable, insecure, and lower-paying conditions, creating a dual-tiered system that divides permanent workers from precarious, non-permanent positions. The research notes that the findings reflect the perspectives and views of the twenty respondents specifically, rather than representing the entire retail sector, due to the non-representative nature of the sample. Insights from the twenty respondents underline the urgent need for continuous training for workers, employers, and trade unions to adapt to the challenges and opportunities presented by technological change. The research highlights the importance of collaboration between trade unions and employers to address precarious work and improve working conditions. It also recommends establishing research and development units within trade unions to better understand and address the effects of technological change to foster a more equitable and inclusive retail sector.

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ACCRONYMS

AI	: Artificial Intelligence
AR	: Augmented Reality
BCEA	: Basic Conditions of Employment Act
CCAWUSA	: Commercial Catering and Allied Workers Union of South Africa
CLCWU	: Cape Liquor and Catering Workers Union
COSATU	: Congress of South African Trade Unions
COVID-19	: Coronavirus Disease 2019
FAWU	: Food and Allied Workers Union
GDP	: Gross Domestic Product
GEAR	: Growth, Employment and Redistribution
ICT	: Information Communication Technology
IoT	: Internet of Things
IT	: Information Technology
ILO	: International Labour Organization
IUF	: International Union of Food
HARWU	: Hotel and Restaurant Workers Union
GLJ	: Global Labour Journal
GUFs	: Global Union Federations
LPT	: Labour Process Theory
LRA	: Labour Relations Act
LRS	: Labour Research Service
NCA	: National Credit Act
NUMSA	: National Union of Metalworkers of South Africa

OECD	: Organisation for Economic Co-operation and Development
OHSA	: Occupational Health and Safety Act
PSO	: Point of Sale Systems
RAWU	: Retail and Allied Workers Union
SACCAWU	: South African Commercial Catering and Allied Workers Union
SAHO	: South African History Online
SETAs	: Sector Education and Training Authorities
UK	: United Kingdom
UNI	: Union Network International
USA	: United States of America
WEF	: World Economic Forum
VTE	: Variable Time Employee
WCSA	: Workers College South Africa
W&RSETA	: Wholesale and Retail Sector Education and Training Authority
1IR	: First Industrial Revolution
2IR	: Second Industrial Revolution
3IR	: Third Industrial Revolution
4IR	: Fourth Industrial Revolution

CHAPTER 1: INTRODUCTION

1.1. Introduction and Background

The technological change brought about by the Fourth Industrial Revolution (4IR) deeply affects workers and their organisations, including trade unions that strive to protect workers' rights and improve working conditions (Dencik and Wilkin, 2020). As automation, Artificial Intelligence (AI), and other advanced technologies increasingly replace traditional roles, there is a concern about the displacement of jobs historically relying on manual labour or routine tasks. This shift necessitates a re-evaluation of skills and the role of trade unions in advancing the workforce's adaptation and protection amidst technological disruption. Technological change in the context of 4IR represents a pivotal moment in human history, characterised by the convergence of digital technologies and automation that significantly changes economies, societies, and the nature of work globally (Schwab, 2016). This revolution builds upon earlier industrial advancements by integrating AI, robotics, big data analytics, and the Internet of Things (IoT) into various sectors. These technologies enhance productivity, streamline operations, and create new economic opportunities, but they also pose challenges, particularly for workers engaged in manual, routine, and repetitive tasks.

The changing nature of work, influenced by technological advancements, has changed the traditional power relations between employers and workers. De Stefano (2016) highlights that the rise of digital labour platforms has fragmented workforces and diluted the collective bargaining power of trade unions. As work becomes more individualised and remote, the traditional trade union model of collective representation becomes less effective. Historically, trade unions have been instrumental in fighting for improved wages, working hours, and safety standards. However, the rapid pace of technological change introduces new complexities. Automation, AI, and other technologies have the potential to reduce the demand for certain types of work, leading to job displacement and changing the bargaining power of workers in industries transforming. Trade unions must adapt to the realities of technological change and embrace new strategies to protect workers' interests in a technologically driven economy. To remain relevant, trade unions must leverage technology to enhance their organisational capabilities (Vandaele, 2018). This adaptation includes advancing policies that promote reskilling and upskilling programs to equip workers with the skills needed for emerging roles in digital industries. Through collaboration between employers, policymakers, and educational

institutions, trade unions can play a pivotal role in ensuring that technological change benefits workers through enhanced job security and opportunities for career advancement.

1.1.1. Technological change and its effects on socio-economic outcomes

Technological change profoundly impacts socio-economic outcomes, reshaping employment, income distribution, and economic growth dynamics. Automation and AI have revolutionised industries in replacing routine and manual jobs, leading to significant job displacement in sectors such as manufacturing and customer service. Technological change, as articulated by (Brynjolfsson and McAfee, 2014) presents a dual-edged sword with both opportunities and challenges. While it drives economic growth and innovation, it also requires careful management of socio-economic impacts to foster an inclusive and adaptive society. This shift underlines the need for workers to acquire new skills to adapt to changing job requirements not only in retail sector but in other sectors of the economy. The ability to upskill and reskill becomes crucial for maintaining economic stability and job security in an increasingly automated world (Autor, 2015). While technological change creates new job opportunities in high-skilled sectors, it also exacerbates income inequality. High-skilled workers often reap greater benefits from technological change through increased wages and job opportunities, while low-skilled workers face stagnation or displacement (Autor, 2015). This disparity contributes to a widening income gap, highlighting the uneven distribution of economic gains across the workforce. Moreover, the digital divide perpetuates these disparities by limiting access to technology and digital skills among disadvantaged groups, hindering their participation in the digital economy (Van Dijk, 2020).

Despite these challenges, technological innovation drives productivity gains and economic growth. Advances in automation and AI streamline production processes, reduce costs, and stimulate innovation in product development and service delivery. Technological progress leads to an abundance of goods and services at lower costs. Digital technologies have democratised access to information, entertainment, and communication, creating many consumer options (Brynjolfsson and McAfee, 2014). This efficiency often leads to the creation of new markets and economic opportunities, benefiting regions and communities that successfully adapt to technological change. However, areas that lag behind in adopting new technologies may experience economic decline, worsening regional inequalities (Autor, 2015). Beyond economic impacts, technology influences social dynamics and educational paradigms. Digital tools and online resources enhance learning experiences, offering access to knowledge

and educational opportunities irrespective of geographical constraints (Brynjolfsson and McAfee, 2014). Technology, particularly through digital platforms and social media, enhances the ability to connect with others and exchange information quickly and widely. This increased connectivity can foster communication, collaboration, and the spread of knowledge across different communities and geographies.

Yet, disparities in digital access and skills contribute to educational inequalities, affecting students' ability to fully benefit from technological change. Despite its benefits, technology also brings challenges. Misinformation can spread rapidly online, leading to confusion and misinformed opinions. Furthermore, social media and digital platforms can contribute to social polarisation in creating echo chambers where users are exposed mainly to information that aligns with their existing beliefs, reinforcing divisions and reducing exposure to diverse views (Van Dijk, 2020). This is to say that technological advancements can exacerbate socio-economic inequalities. It has the potential to widen the gaps in wealth, income, and mobility as some individuals and businesses benefit disproportionately from technological progress. For instance, the rise of tech giants and highly skilled workers who can leverage new technologies often contrasts with those in more traditional or less adaptable sectors who face job displacement and reduced economic opportunities.

As articulated above, technological change presents a dual-edged sword of opportunities and challenges for societies globally. While it drives economic growth and innovation, it also intensifies disparities in employment, income distribution, and educational outcomes. Addressing these challenges requires holistic approaches that prioritise education and digital inclusion, ensuring equitable access to technology and opportunities for all segments of society (Autor, 2015, Van Dijk, 2020). Fostering a supportive environment for skill development, promoting inclusive policies, and leveraging technology responsibly, societies can harness the transformative potential of these changes toward sustainable and inclusive development.

1.1.2. Technological change and labour markets: Compensation and displacement effects

Technological change in labour markets encompasses both displacement and compensation effects, leading to a complex interplay of outcomes. Ever since Keynes (1931) predicted that new technology would lead to the disease of technological unemployment, numerous economic studies have been conducted to understand the effects of technological change on the labour market (Frey and Osborne, 2017, Autor, Levy, and Murnane, 2003, Acemoglu and Restrepo,

2020, De Vries, Gentile, Miroudot, and Wacker, 2020). These studies indicate that the development of computers, industrial robots, AI, and mobile robotics over the past few decades has intensified concerns about labour-replacing technologies. Automation and AI have notably replaced routine and manual jobs across various sectors, contributing to concerns about job losses and income instability among workers. However, these changes also create new job opportunities in fields such as technology development and data analysis, suggesting a potential for offsetting some of the negative effects on employment (Hirsch-Kreinsen, Ittermann, and Niehaus, 2015, Weber, 2017). Despite the potential for job creation, the overall effect of technological change on employment remains ambiguous. Studies present mixed findings, with some suggesting minimal to no effect on overall employment levels while others highlight significant job displacement in certain industries (Pfeiffer and Suphan, 2015, Weber, 2017).

Data from Weber's (2017) comparative study of multiple research projects shows that technological change would either have no effect at all or have very little effect on employment levels. The outcome largely depends on factors such as industry adaptability, regional economic conditions, and workforce skills (Frey and Osborne, 2017, Acemoglu and Restrepo, 2019). Increased productivity resulting from advanced technologies can stimulate demand for goods and services, potentially leading to job creation in specific sectors. However, these gains are unevenly distributed, with skilled workers often benefiting more from technological change compared to their low-skilled counterparts (Autor, Levy, and Murnane, 2003). This skill-biased technological change contributes to wage inequality and job polarisation, further intensifying socio-economic disparities within the workforce (Goos, Manning, and Salomons, 2014).

Globally, countries like Germany and South Korea have successfully managed the transition to a tech-driven economy by investing heavily in education and vocational training (Autor, Levy, and Murnane, 2003). These investments help equip the workforce with the necessary skills to adapt to technological change, thereby mitigating the negative effects of job displacement and fostering economic resilience. In contrast, regions that underinvest in education and skill development face greater challenges in navigating the disruptive effects of technological change (Acemoglu and Restrepo, 2019). The emergence of the gig economy, propelled by digital platforms, represents another facet of technological change in labour markets. While offering flexibility and new earning opportunities, the gig economy also raises concerns about job security, benefits, and labour rights for workers (Frey and Osborne, 2017). This shift underlines the need for policies that address the changing nature of work in the digital age, ensuring that technological change contributes to sustainable and inclusive economic growth.

In a nutshell, technological change continues to reshape labour markets globally, presenting both challenges and opportunities for workers and economies alike. While advancements in automation and AI enhance productivity and innovation, they also disrupt traditional job structures and exacerbate inequalities. As discussed above, addressing these challenges requires proactive policies that prioritise education, skill development, and inclusive economic strategies to ensure that all segments of society can benefit from and contribute to the ongoing technological revolution (De Vries, Gentile, Miroudot, and Wacker, 2020). Fostering a supportive environment for innovation and equitable access to opportunities, societies can harness the transformative potential of technological change toward sustainable development and shared prosperity.

1.1.3. Case of South Africa: Implications for labour markets and trade unions

Technological change in South Africa's labour markets presents both challenges and opportunities, particularly in sectors crucial to the economy such as mining and manufacturing. The adoption of automation, AI, and other technologies in these sectors has the potential to reduce jobs traditionally held by low-skilled workers, intensifying unemployment and income inequality in a country already grappling with these issues. This shift stresses the urgency for trade unions to adapt their strategies to protect workers' rights amidst technological change. Trade unions in South Africa, historically instrumental in fighting for workers' rights, face the pressing need to address skill gaps exacerbated by technological change. Traditionally focused on bargaining for wages and working conditions, trade unions now need to prioritise reskilling and upskilling initiatives to equip their members with the competencies needed in a technology-driven economy (Gichobi, 2022). This shift requires unions to negotiate for employer-sponsored training programs and lobby for government policies that promote lifelong learning and skill development initiatives.

Government intervention is crucial to mitigate the negative effects of technological change on workers. South Africa's government must invest in comprehensive education and training programs that prepare the workforce for new job realities (Autor, Levy, and Murnane, 2003). This includes not only formal education but also vocational training and continuous learning opportunities tailored to the needs of industries undergoing automation and digital transformation. Social protection measures such as unemployment benefits and job transition programs are also essential to support workers displaced. In sectors like retail, where automation technologies such as self-service machines and digital payment systems are

increasingly prevalent, trade unions like the South African Commercial Catering and Allied Workers Union (SACCAWU) play a vital role in protecting workers' interests. These technologies may render certain job roles obsolete, necessitating a proactive approach from trade unions to negotiate better living and working conditions while championing ongoing skills development for their members (Gichobi, 2022). Marx (1887) noted that machinery in the workplace is strategically employed to advance the political, social, and economic interests of capitalists.

Employers also bear responsibility for adapting to technological change by investing in reskilling and upskilling their workforce (Gichobi, 2022). Promoting a culture of continuous learning and supporting workers in acquiring new skills, businesses can ensure a smoother transition to a technologically advanced economy. Collaboration between employers, trade unions, and the government is essential to create a system that supports workers through this transition, ensuring that technological change contributes to inclusive and sustainable economic growth. The gig economy and the rise of digital platforms in South Africa present both opportunities and challenges for workers and trade unions (Autor, Levy, and Murnane, 2003). While offering flexibility and new income streams, these platforms often lack traditional labour protections, raising concerns about job security and benefits for gig workers. Trade unions must adapt their strategies to represent gig workers effectively, demanding fair wages, benefits, and working conditions in this changing labour landscape.

Trade unions in South Africa must navigate the complexities of technological change by embracing innovative strategies to protect workers' rights and promote inclusive economic growth. This includes fighting for comprehensive skill development initiatives, collaborating with employers and the government, and addressing the unique challenges posed by the gig economy (Autor, Levy, and Murnane, 2003). Adapting to the realities of technological change in the context of 4IR, trade unions can ensure that technological change benefits all workers, contributing to a more equitable and prosperous future for South Africa. Building on the above, it can be argued that for employers, workers, and trade unions in the retail sector to succeed, new strategies are essential to address and mitigate the adverse effects of technological change on employment and livelihoods. Prominent researchers such as Jose (1999), Hlatshwayo (2014, 2017), and Hlatshwayo and Buhlungu (2017) have emphasised the need for trade unions to develop strategies to ensure their members are prepared for the skills required in the technologically driven economy.

1.1.4. Technological change and retail sector

The retail sector in South Africa is undergoing significant transformations driven by technological change, mirroring global trends. The rapid growth of e-commerce, and digital payment, fuelled by increased internet penetration and smartphone usage, has been further accelerated by the COVID-19 pandemic, which compelled many consumers to shift to online shopping (Moshime, 2021). Consequently, traditional brick-and-mortar retailers are under immense pressure to adapt by enhancing their online presence and integrating digital technologies into their operations. This shift towards digitalisation presents both opportunities and challenges for the sector. Automation, AI, and the Internet of Things (IoT) are revolutionising logistics and supply chain management within the retail sector. Technologies such as automated warehousing, robotics, and AI-driven inventory management systems increase efficiency and reduce costs, but they can also lead to job displacement for workers involved in these processes. The adoption of these technologies allows retailers to leverage big data analytics to better understand consumer behaviour and personalise shopping experiences, necessitating new skills in data analysis and digital marketing.

However, this technological change can perpetuate existing inequalities, as workers with low digital literacy or those in roles that are easily automated are at risk of unemployment. Introducing technologies such as self-service machines, Point of Sale Systems (PSO) digital payment systems, digital signage, and robots in the retail sector can help employers minimise costs, maximise profits, and increase productivity and efficiency in a competitive market with thin profit margins. Despite these benefits, there is a potential downside which is the elimination of jobs and a reduction in the workforce, leading to membership loss for trade unions. According to Coyle (2017), the consequences of these technologies on the economy and jobs are a growing concern that cannot be ignored, with both positive and negative implications. A study conducted by Bai (2022) in China highlighted that technology has created many new jobs and a new working environment, but it has also deepened the technological gap and worsened structural unemployment. Retailers in affluent countries have adopted the change more rapidly than those in developing countries due to their advanced e-commerce capabilities and significant investments in cutting-edge technologies and AI applications like virtual reality, automation, and robotics (Mulder and Mehlahe, 2023). The entire supply chain of major retailers such as Walmart is increasingly being automated. In early 2023, Walmart declared its intention to automate 65% of its United States of America (USA) stores by 2026,

which is expected to significantly affect lower-wage workers. Amazon has also utilised automation and AI to enhance the productivity of its operations. For many years, Walmart has led the way in technology adoption, making substantial investments in AI, e-commerce, and supply chain management. A recent survey by Redflank, commissioned by the Wholesale and Retail Sectorial Education Authority, found that more than 40% of retail businesses in South Africa had not investigated 4IR technology due to budgetary constraints, a lack of corporate interest, or ignorance of the benefits of 4IR technology (W&RSETA and Redflank, 2021).

Retail workers are losing jobs due to the growth of online shopping facilitated by AI and other modern technologies (Ramlall, 2020). In Malaysia, as technological change accelerates, workers who lack the appropriate skills for the sector are readily replaced by robots, highlighting the direct relationship between skill mismatches and job losses. Similar patterns are observed in other sectors of the economy, such as banking, where the implementation of new technologies has contributed to retrenchment and workforce reduction (Moshime, 2021). As technology advances, employers in the retail sector will require less floor space as they transition to e-commerce and shop automation. Researchers suggest that employers might preserve smaller stores as showcases, while the rest of the business occurs through online platforms from centralised distribution centers, reducing reliance on workers (Singh, 2008, Omarjee, 2017). Despite these challenges, technological change provides ample capacity for all sectors of the economy to expand and create new businesses and job opportunities. Employers in the retail sector can enhance customer satisfaction and operational effectiveness through these advanced technologies.

The intensification of robotics and AI has the potential to disrupt the retail sector and other sectors of the economy as millions of jobs are automated (Schwab, 2016). This could exacerbate the already high levels of unemployment, poverty, and social inequalities in South Africa's economy by widening substantial power, wealth, and income gaps between workers and owners of the means of production. Hence, there is an urgent need for retail workers to improve, adapt, reskill, and upskill themselves and be exposed to new modern forms of technologies to survive in an increasingly automated and precarious world of work. Technological change has transformed the work of many retail workers from precarious work to obsolete labour. This research seeks to explore the effects of technological change on the nature of work, with a particular emphasis on precarious work within South Africa's retail sector. It will explore how technological change is influencing work conditions, job roles, and employment stability in this sector.

1.2. Problem statement

The retail sector is undergoing tremendous transformation due to rapid technological change. The preceded technologies and 4IR have brought and still bringing the information and knowledge economy to an unprecedented new level, with huge technological change posing enormous challenges for workers in the retail sector. The introduction of technological innovations has the potential to both displace certain jobs and transform many others, while also generating new employment opportunities (Bai, 2022). It rewards higher-skilled workers as self-service machines, green light technology, digital payment solutions, online shopping, automation, and AI replace lower-skilled and unskilled workers. Technological change is used to change power relations in the world of work and perpetuate the long-standing precarious work relationships which are characterised by flexible contracts of employment, low pay, lack of social protection, and working conditions that are unpredictable, insecure, unregulated, and often lack consistent occupational identity.

Trade unions that are organising in the retail sector, such as SACCAWU, are cognizant of the risks that technological change represents to jobs and the livelihoods of workers which requires them to endlessly come up with strategies or measures to fight against precarious work in the retail sector. This can be done through negotiating better conditions for trade union's members, improving, adapting, upskilling, and reskilling the skill sets of workers so that they can remain relevant in the labour market. Rapid technological change can cause membership decline due to the employer's decision to downsize, restructure, subcontract, and outsource its business. As a result, this will lead to job insecurity, which has the potential to limit trade unions' ability to organise, engage in collective bargaining, and defend workers' rights. Dencik and Wilkin (2020:1) argue that "working conditions and the ability of trade unions to protect workers' rights have been hindered by technological developments, neoliberal ideology, and rising corporate power". This research aims to explore how technological change affects the nature of work, focusing on precarious work in South Africa's retail sector, specifically among SACCAWU members working at Makro, Builders, Melbro Wholesale, and Pick and Pay in eThekweni Municipality, KwaZulu-Natal.

1.3. Aim of the research

This research aims to explore the multifaceted effects of technological change on the nature of precarious work within the South African retail sector, with a specific focus on SACCAWU-

affiliated workers at Makro stores, Builders, Melbro Wholesale, and Pick n Pay in the eThekweni Municipality, KwaZulu-Natal. Examining the dynamics of how technological change is reshaping employment conditions, this research seeks to provide insights into the challenges and opportunities that arise for workers, trade unions, and the broader labour market. The research will assess the extent to which technological change contributes to precarious employment, and explore strategies for mitigating adverse effects and enhancing worker resilience and adaptability in this rapidly changing sector.

1.4. Objectives of the research

The main objective of the research project is:

- To explore the broader implications of technological change on the nature of work, with a focus on how advanced technologies are shaping work relations and intensifying precarious conditions in the retail sector.

1.5. Research questions

The main research question that the research seeks to answer is as follows:

- How do technological changes brought about by advancements of the 4IR influence, shape, and transform the nature of work, including precarious work and labour relations in the retail sector in South Africa?
- What role do trade unions play in mitigating or responding to these changes?

The sub-questions are as follows:

- How do workers and trade unions in the retail sector engage with and adapt to digital and financial technologies?
- How are employers, workers, trade unions, and the state addressing the challenges of precarious work in the retail sector due to technological change brought by 4IR?
- What role do trade unions play in responding to and mitigating the effects of 4IR technologies on work conditions and labour relations in the retail sector?
- What are the social implications of these changes, including conceptions and attitudes to work, work practices, and the aspirations of workers?
- How do 4IR technologies impact conceptions of work, work practices, and worker aspirations in the retail sector?

1.6. Significance of the research

This research seeks to explore the effects of technological change on the changing nature of work, with focus on precarious work in the South African retail sector. Convenience and the shopping experience are increasingly being used by employers in the retail sector to shape their business models. Online shopping, green light technology, automation, AI, self-service machines, digital payment solutions, point-of-sale systems, digital signage, etc., are making purchasing and selling much easier and spreading more widely (Teuteberg, 2018). As more and more people do online shopping, employers in the retail sector will need less floor space in the future. Research on reverse causality, specifically how trade unions might influence the rate of technological change, remains limited. This research is significant as it will assist trade unions, such as SACCAWU, in developing more effective strategies to counter the challenges presented by technological advancements. It aims to provide valuable insights into enhancing trade unions responses through comprehensive training and development programs (including formal education, workshops, on-the-job training, online courses, and self-study), research and development efforts, continuous negotiations for improved working and living conditions, and promoting for policies and legislations designed to protect workers in the retail sector.

This research is pivotal as it will explore the dual effect of ongoing technological advancements in the retail sector, which can both displace existing jobs and generate new employment opportunities. Examining these dynamics, the research will provide valuable insights for workers and trade unions operating within the sector. It will explain how technological innovations contribute to increased job insecurity and precariousness, while simultaneously fostering new and adaptable forms of employment. Furthermore, the research will underscore the importance of proactive adaptation through skilling, upskilling, and reskilling. This approach will enable trade unions to effectively leverage resources provided by Sectoral Education and Training Authorities (SETAs), ensuring that workers are well-equipped to meet current and future trends in the workplace. Moreover, it is also envisaged that the results of the research would enhance and contribute to the broader debate on the competing views on the effects of technological change on employment to help trade unions better understand that even though the introduction of advanced technologies may harm jobs, it can also create new sectors that will create job opportunities, and also deepening class consciousness among workers, and the ongoing struggle for social justice.

1.7. Scope of the research

This research explores the effects of technological change on the changing nature of precarious work within the South African retail sector. The focus is specifically on understanding how technological change affects job security, working conditions, and overall employment experiences in this sector. Due to constraints in resources and time, the research is geographically limited to the eThekweni Municipality in the province of KwaZulu-Natal. Within this area, the research involved interviews with twenty members of SACCAWU. respondents were drawn from various retail establishments, including Makro stores, Builders, Melbro Wholesale, and Pick and Pay, where SACCAWU is actively organising workers.

The research includes perspectives from both shop stewards and ordinary SACCAWU members who voluntarily agreed to participate. It is important to note that while the findings provide valuable insights into the experiences of these respondents, they do not represent the views of the entire retail sector. The research reflects the specific experiences and perceptions of the twenty SACCAWU members, and as such, may not fully capture the broader spectrum of the effects of technological change across the entire retail sector.

1.8. Structure of the research

Chapter one offers a comprehensive introduction to the research by outlining the introduction, problem statement, aim, objectives, research questions, scope, and significance of the research. It sets the stage for exploring the effects of technological change on the changing nature of work, with a particular focus on precarious work within South Africa's retail sector. It provides a contextual background, highlights the challenges and opportunities presented by technological change, and articulates the research's purpose and rationale. It further outlines the objectives and research questions, clarifies the scope, and underlines the importance of understanding these dynamics for workers, trade unions, and policymakers in navigating the complexities of the modern workforce.

Chapter two contextualises the research by providing background information and establishing the theoretical foundations. It includes a comprehensive literature review that critically examines existing research pertinent to the research's topic. It also presents the theoretical framework guiding the research, which incorporates labour process theory, precariat, and labour casualisation. This framework informs the research's perspective and methodological

approach, offering insights into the changing nature of work and employment patterns within the retail sector.

Chapter three outlines the research methodology, detailing the methods and procedures used for data collection and analysis. It provides an in-depth explanation of the research design, including the selection of qualitative methods, research paradigm, sampling techniques, and data collection tools such as structured and semi-structured interviews. It also describes the analytical techniques employed to interpret the data, ensuring a rigorous approach to understanding the effects of technological change on precarious work in the retail sector. The methodology section aims to demonstrate the validity and reliability of the research findings by clearly articulating how data was systematically gathered and analysed.

Chapter four presents and discusses the research findings, including detailed data presentation, analysis, and interpretation. It provides a comprehensive overview of the collected data, offering visual representations such as charts, and tables where applicable. It critically analyses the results in relation to the research questions and theoretical framework established in earlier chapters. The discussion will interpret the findings, linking them to existing literature and theoretical perspectives, and will address their implications for understanding the effects of technological change on precarious work in the retail sector. The chapter concludes with a summary of the key insights and discussions, highlighting the significance of the findings and their relevance to the broader context of the research.

Chapter five provides a thorough conclusion and offers recommendations based on the research findings. It will begin with a concise summary of the results in relation to the research objectives, encapsulating the key insights and findings from the research. It will offer concluding remarks that highlight the most significant elements of the research, reflecting on the implications of the results for understanding technological change and precarious work in the retail sector. Furthermore, this chapter will present recommendations for future research, suggesting areas that require further exploration and potential approaches to address the issues identified. The recommendations will also include practical suggestions for trade unions, policymakers, and other stakeholders to enhance their strategies in response to technological change.

CHAPTER 2: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1. Introduction

Globally, technological change has affected not only the retail sector but also other sectors of the economy. Mamphiswa and Bekele (2020) argue that the long-standing processes for producing goods and rendering services better are changing because of the technologies brought about by the 4IR. Through 4IR technologies such as the Internet of Things (IoT) and AI, users can customise products and services (Mamphiswa and Bekele, 2020). They continue arguing that businesses that adapt their production methods from mass production to customised goods and services using cyber-physical technology will become market leaders. However, businesses would need a skilled workforce in the era of 4IR technologies. Success in the modern workplace requires that both businesses and workers understand, embrace, and adjust to emerging technologies. Employers may stimulate creativity, productivity, and growth through leveraging technology, while workers can improve their abilities, output, and opportunities for advancement.

This research project aims to explore the effects of technological change on the changing nature of work, with a specific focus on precarious work in the South African retail sector. The research will concentrate on workers who are members of the South African Commercial, Catering, and Allied Workers Union (SACCAWU) employed at Makro stores, Builders, Melbro Wholesale, and Pick n Pay in the eThekweni Municipality, KwaZulu-Natal. Various literature relevant to the research will be reviewed, focusing on existing knowledge that directly addresses the research's core topic. Theoretical frameworks, specifically labour process theory, precarity, and casualisation of labour, are identified as the most pertinent for explaining job losses, skills redundancy, and the casualisation of work. These frameworks will help enlighten how such factors contribute to creating working conditions that are unpredictable, insecure, precarious, unregulated, and often lack a consistent occupational identity within the retail sector.

2.2. Historical context: Evolution of Industrial Revolutions

Koc and Teker (2019) indicate that the Industrial Revolution began in England around the 1750s and subsequently spread to the rest of Europe and the United States in the early 1800s. Massive developments occurred in the production of commodities throughout the latter part of

the 18th century. Today's digital and AI production systems are fuelled by rapidly advancing technology, and they are primarily driven by traditional manufacturing industries. Throughout history, various types of technological inventions have had an impact on economic growth (Koc and Teker, 2019). Technological development efforts have led to increased labour productivity, which in turn has resulted in economic development. Alongside the Industrial Revolution and the rise of the modern capitalist economy, the Gross Domestic Product (GDP) per capita started to increase. However, working and living conditions in factories deteriorated as many businesses attempted to cut costs and become more profitable to keep ahead of their competitors (Koc and Teker, 2019). Working and living conditions in these early factories were severe, and dangerous, and resulted in significant wealth disparities. Almost from the start, industrial owners and businessmen became extremely wealthy, while most workers worked hard in factories and remained impoverished. Workers during the early industrial revolution faced significant hardships. They endured long hours in poor conditions, received low wages, and had minimal to no legal protection.

2.2.1. First Industrial Revolution

Around 1750–1760, the First Industrial Revolution (IIR) got underway in England and lasted until roughly 1820–1840 (Mohajan, 2019). It is considered to be among the most important paradigm shifts in human history. During this period, a technology derived from human and animal labour gave rise to devices like the steam engine, spinning Jenny, coke smelting, puddling, rolling processes for iron production, and so on. It was a period of transition from primarily rural, agrarian communities to urban, and industrial ones. Important elements of the IIR included the development of the water wheel and, subsequently, the steam engine, as well as the iron and textile industries. The effects of the IIR were felt by the farming community. Most work was done by hand, and those who lost their ability to farm due to manufacturers taking over their land were forced to retrain as mechanics, boiler makers, ironsmiths, and so forth because these businesses needed workers to build and maintain their equipment. It took sixteen hours a day for factory workers to make ends meet for their families (Mohajan, 2019).

While there were temporary job losses, new positions that had not existed before were created. Living conditions were controversial during the IIR according to Mohajan (2019). Cities in England developed quickly without building standards, sanitary regulations, or development plans, and police protection in the cities was insufficient. Due to their deplorable pay, the workers were forced to dwell in dirty, gloomy shelters where whole families might share a

single bedroom. Hence, there was no improvement in their working and living conditions. However, Mohajan (2019) argues that several excellent outcomes occurred during the 1IR, it improved the lives of most people. Mass production, specialised factories, and powered machinery replaced earlier methods. People could make more money in factories than in farms, and it produced a large number of jobs. It raised many people's levels of living, especially for middle-class and upper-class individuals. Better housing, more reasonably priced mass-produced clothing, and healthier meals were all benefits of it. Hence, the 1IR improved the lives of millions by making a wide range of commodities more affordable and widely available. Most importantly it created new types of work opportunities for people. However, industrialisation has had some unfavourable effects on the working conditions and livelihoods of workers.

2.2.2. Second Industrial Revolution

The Second Industrial Revolution (2IR) took place between 1870 and 1914, just before World War I. Steel, oil, and electricity were among the industries that grew during this time, and mass manufacturing was made possible by harnessing electricity. During this time, science contributed to the advancement of civilisation. Technologies that have improved human civilisation include indoor plumbing, internal combustion engines, electricity, and chemical industries. Businesses expanded in tandem with improvements in the stock market, commercial banking, and transportation (Mohajan, 2019). Hence, there has been an acceleration in economic development. Industrial actions (e.g., strikes) and work stoppages erupted in response to precarious working conditions, excessive hours, and salary cuts. The 2IR had both positive and negative effects, but the positive effects were so large that it established the modern sustainable period.

Numerous benefits included the improvement of daily living brought about by elevators, electric machinery, and consumer appliances, the convenience and comfort of transportation made possible by cars, trucks, and airplanes, the development of highways, suburbs, and supermarkets, and the improvement of city sanitation brought about by the construction of sewers to remove waste. Many countries became more productive than during the 1IR, and it raised the living conditions of many people. As medical discoveries were made, public health improved significantly, lowering the incidence of infection and death from a variety of diseases (Mohajan, 2019). However, the 2IR had its disadvantages, many businesses were plagued by enormous debts, causing farm prices to decrease. Increased worker exploitation resulted in

workers working fourteen to sixteen hours a day, six days a week, in unsafe and poor conditions.

According to Mohajan (2019), cholera, smallpox, tuberculosis, and other infectious diseases spread among those living in such close quarters as a result of unfavourable working conditions and unclean water. On the other hand, as robots took on more complex tasks, they began to encroach on leisure time, contributing to an increase in health problems like diabetes, cancer, obesity, heart disease, and other conditions. As a result, the general level of health among the workforce has decreased. It is said that women and children made less money than men and that artists and craftsmen also lost their jobs. The difference in wealth between those who control and own the means of production and those who depend on labour to survive has widened. As more people joined factories, fewer people worked in the fields, and agriculture declined dramatically. Hence, increased productivity and automation lead to unintended negative effects on the health and well-being of the workforce.

2.2.3. Third Industrial Revolution

The Third Industrial Revolution (3IR), also referred to as the digital revolution, is the technological change from analog mechanical and electrical devices to the digital technologies of today. The 3IR saw the development of personal computers, the Internet, and information and communications technology (ICT). Jobs were replaced by computers and robots, but if workers were not computer-proficient, they could have been among those who lost their positions. New employment was established that did not previously exist, such as software and hardware engineers. According to Mohajan (2021), the shift from mechanical and analog electronic technologies to digital electronics marked the start of the 3IR, which started in the 1950s. With almost every area of modern life undergoing a fundamental transformation due to the 3IR, there were both opportunities and challenges to be faced as businesses and workers navigate the quickly changing digital world.

It has taken advantage of the rapid advancements in ICT, transportation, advanced manufacturing, distribution, and consumption as well as the fields of medicine, health, education, construction, agriculture, defense, business, economic activity, and administration. Among other things, there has been an increase in living standards, a considerable increase in wealth, and vast production of materials and goods. It has also encouraged efficiency, creativity, and customisation to meet the needs of customers. It offers chances for economic expansion, job creation, and sustainable development in modern society, even as it poses

challenges like job displacement. It has lowered energy and raw material usage while increasing manufacturing's carbon footprint. Furthermore, during this period child labour increased which led to harsh and precarious factory working conditions (Mohajan, 2021). As a result, many workers' lives have been significantly affected by the rise of machines.

2.2.4. Fourth Industrial Revolution

The term Fourth Industrial Revolution (4IR) was popularised by Klaus Schwab (2016), chair of the World Economic Forum (WEF), to describe a transformative period marked by the integration of digital, physical, and biological technologies. He posits that this revolution encompasses advancements in AI and machine learning, robotics and automation, big data and analytics, the Internet of Things (IoT), and biotechnology, which he argues will usher in significant improvements in efficiency and productivity across various sectors. However, his portrayal of the 4IR tends to adopt an apolitical stance, framing these technological advancements as inevitable and universally beneficial. This approach often obscures the underlying power relations and policy decisions that shape the trajectory of these technologies. Presenting technological progress as neutral, he allows powerful stakeholders such as large corporations and wealthy investors to promote a narrative that deflects attention from the socio-economic inequalities and exploitation that may arise from these advancements. Schwab (2016) views the 4IR as a transformative force that will fundamentally change industries, labour markets, and societal norms, offering opportunities for greater efficiency and innovation. However, it also poses challenges such as job displacement, privacy issues, and inequality. He emphasises the need to address the digital divide, update education systems, and implement effective policies to ensure equitable benefits and manage risks.

The 4IR is characterised by the convergence of several advanced technologies. AI, including machine learning, natural language processing, and predictive analytics, aims to enhance decision-making and automate complex processes. Robotics focuses on developing machines capable of performing tasks autonomously, impacting both manufacturing and service sectors. The IoT refers to a network of interconnected devices that communicate and share data, leading to smarter systems in various environments. Biotechnology, which includes advancements in genetics and bioengineering, holds the potential to revolutionise healthcare, agriculture, and environmental management. One prominent facet of 4IR technologies in the retail sector is the integration of artificial intelligence (AI) and machine learning to enhance customer experiences and operational efficiency (Smith and Johnson, 2022).

AI-driven algorithms analyse vast amounts of consumer data to deliver personalised shopping experiences, such as tailored product recommendations and targeted marketing campaigns. Furthermore, machine learning models predict trends and optimise inventory management, helping retailers anticipate demand and reduce waste. The use of AI in chatbots and virtual assistants provides customers with real-time support, streamlining interactions and improving satisfaction (Smith and Johnson, 2022). Building on the above, one could argue that this technological advancement not only boosts sales and customer loyalty but also drives operational efficiency, making AI and machine learning crucial elements in the modern retail landscape. While these technologies promise increased efficiency and new opportunities, they also present challenges, such as job displacement due to automation, privacy concerns related to data collection, and ethical issues surrounding AI and genetic manipulation. Schwab's (2016) characterisation of the 4IR has been criticised for its apolitical nature, presenting technological change as objective economic facts. As said earlier, this perspective benefits powerful stakeholders by allowing them to maintain their influence and avoid scrutiny of the inequalities exacerbated by technological change. The emphasis on technological inevitability can obscure the role of policy decisions and corporate strategies in shaping these impacts, thereby legitimising the status quo and avoiding accountability for socioeconomic disruptions.

Historians and sociologists, such as Moll (2021), argue against the notion that the 4IR constitutes a new industrial revolution. He offers a critical analysis of the prevailing notion that the 4IR signifies a fundamentally transformative shift in technology and society. Moll (2021) contends that the depiction of 4IR as a revolutionary epoch may be exaggerated. He posits that the technologies often associated with 4IR, including AI, machine learning, and the Internet of Things, are not new but rather represent an extension of earlier technological advancements. Moll (2021) argues that the sensationalist rhetoric surrounding 4IR tends to obscure the incremental nature of technological progress and neglect the intricate socio-economic and historical contexts in which these innovations unfold. He asserts that an exclusive focus on emerging technologies, without accounting for their interactions with existing social structures and power relations, results in a skewed understanding of their actual impact. Questioning the deterministic perspective on technological advancement and highlighting the continuity in technological evolution, he emphasises a more nuanced and critical examination of the 4IR narrative. In a nutshell, his critique aligns with historical analyses showing that technological advancements typically represent a gradual process rather than a series of distinct revolutions (Moll, 2021).

Moll (2021) also critiques the 4IR concept for its lack of a clear and consistent definition. The term is used variably by different scholars, policymakers, and media, leading to ambiguity about what constitutes the 4IR. This conceptual vagueness complicates efforts to distinguish the 4IR from previous industrial phases. His perspective is supported by other scholars who argue that the 4IR often lacks a rigorous, universally accepted definition (Brynjolfsson and McAfee, 2014). Furthermore, he argues that the economic and social impacts attributed to the 4IR, such as job displacement and increased inequality, are not unique to this era but have been observed in past industrial transitions. For instance, the shift from agrarian to industrial economies in the 19th century also led to labour market disruptions and social upheaval. This historical perspective implies that technological advancements do not automatically lead to transformative changes in the socioeconomic landscape, as illustrated by the works of Smith (1776) and Marx (1887).

Smith (1776) argued that while technological progress can enhance economic efficiency and growth, it does not necessarily result in fundamental shifts in the socio-economic structure. He emphasised that the effects of technology are influenced by various factors, such as market mechanisms and institutional settings. Similarly, Marx (1887), critiques the capitalist system by asserting that technological advancements, although they may boost productivity and generate surplus value, do not inherently change the capitalist relations of production. He highlighted that technological change must be analysed within the broader context of class relations and economic structures, which influence its socioeconomic impact. These perspectives indicate that the transformative impact of technological innovations depends on the prevailing socio-economic conditions and power relations, rather than being an inevitable result of technological advancement alone.

Furthermore, Moll (2021) critiques the term 4IR for its political and ideological uses, noting that it can serve to justify certain economic or social policies, such as deregulation or increased investment in technology. This critique aligns with observations that the 4IR concept can be leveraged to promote particular political or economic agendas. He challenges the notion of technological determinism, which suggests that technology alone drives societal change. He argues that social, economic, and political factors play a crucial role in shaping how technological innovations are adopted and their effects on society. This view aligns with scholars who emphasise the importance of contextual factors in understanding technological change (Bijker, Hughes, and Pinch, 1987).

In the context of Africa and the Global South, the 4IR is often seen as an aspirational ideal rather than a transformative reality. Governments and regional bodies like the South African government and the African Union (AU) have embraced the 4IR as a catalyst for economic growth and development, as reflected in frameworks like the National Development Plan (NDP) and Agenda 2063 (African Union, 2014, South African Government, 2012). However, sociological critiques highlight that these optimistic projections often overlook significant socio-economic challenges, such as entrenched inequalities, inadequate infrastructure, and limited access to technology. Consequently, the benefits of the 4IR may be unevenly distributed, reinforcing existing power structures and exacerbating disparities rather than addressing them (Aina, 2020, Moyo, 2020).

While the 4IR promises technological advancements and potential benefits, it also brings critical social and economic implications. A systematic approach to understanding the 4IR should address its origins and context, content, and criticisms. The notion of the 4IR can be seen as both a reflection of certain class interests and a political tool used to justify specific agendas. Addressing issues such as job displacement, the digital divide, and ethical concerns is essential for ensuring that technological progress benefits all segments of society equitably. Davis (2021) provides crucial insights into the 4IR by contextualising it within a broader discussion of how technology intersects with power structures, class interests, and social justice. His work critically evaluates the commonly accepted narrative that views 4IR as a purely revolutionary force, instead revealing its complex socio-economic and political dimensions.

Davis (2021) argues that while technological advancements are often portrayed as neutral innovations, they are deeply intertwined with and influenced by existing power relations and class interests. His analysis underscores how these advancements may reinforce or exacerbate existing inequalities rather than address them. Exploring these interactions, he highlights that the impact of 4IR technologies is shaped by the socio-economic contexts in which they are implemented, including considerations of access, equity, and ethics. Incorporating the critiques from Davis's (2021) work provides a more nuanced understanding of the 4IR, challenging simplistic notions of progress and examining its implications for various segments of society. This approach propagates for informed and equitable policymaking to ensure that the benefits of technological advancements are distributed more fairly and align with principles of social justice. Building on the above, it may be argued that the 4IR builds upon earlier industrial revolutions, the first (1IR) mechanised production using water and steam power, the second

(2IR) employed electric power for mass production, and the third (3IR) introduced automation through electronics and information technology (IT). These technological developments have profoundly affected various economic sectors, as well as the livelihoods of workers and their trade unions. Dencik and Wilkin (2020) say that technological innovation is impeding trade unions' capacity to organise and represent workers. The emergence of technologies brought about by the 4IR has given rise to a number of discussions concerning the opportunities and challenges it presents for the future of employment, work, and skill development (Letsoko and Pillay, 2019). It has forced workers to reevaluate the skill sets they need to thrive, and it has also made some of those skill sets obsolete or redundant, leaving workers unsure of the skills they actually need. The risk of losing one's work is closely related to the mismatch between the skills needed for employment that will be important in the 4IR era (Letsoko and Pillay, 2019). Workers in the retail sector must make sure they are adequately prepared to handle the constantly changing skill requirements.

The 4IR demands a new type of workforce, one that is skilled, technologically adept, and innovative. This shift increases the need for acquiring new abilities, including those that may not yet exist, to mitigate the risk of automation replacing human jobs (Dhaou and Manda, 2019). It can be argued that focusing on the training and development, adaptation, reskilling, and upskilling of workers should take precedence over the implementation of new technologies in the workplace. The retail sector, in particular, must reassess its methods of work to remain competitive, which may involve revising its organisational structures, cultures, and procedures to accommodate the demands of the 4IR. The rapid evolution of technology has generated a skills gap that exceeds both current and future capabilities, necessitating ongoing upskilling and training. As noted by Letsoko and Pillay (2019), workers in the retail sector and other industries are anticipated to assume new responsibilities, making interdisciplinary expertise increasingly essential.

2.3. Technological change, nature of work, and precarious work

Historically, technological change has often been viewed as disruptive to employment. However, empirical studies suggest that the change frequently results in a net increase in job opportunities rather than widespread displacement (Allen, 2015). This perspective sees technological change not merely as a challenge but as a catalyst for potential growth, anticipating significant shifts in future employment patterns driven by changes brought about by the 4IR. While concerns about job scarcity remain, proponents of these changes argue that

emerging technologies will eventually create better employment opportunities. Literature commonly emphasises the perceived job-displacing effects of technology, overshadowing its capacity for innovation and job creation (Rotman, 2013). Nevertheless, Andrew (2014) argues that while technological change can lead to job losses, it also stimulates economic expansion by creating opportunities for individuals with advanced skills. Recent advancements underline the need to carefully evaluate both the negative and positive impacts of technological change.

The World Economic Forum (2016) anticipates major changes in job distribution as a result of technological advancements. Automation and AI are expected to reduce the number of routine jobs while creating new roles that require complex problem-solving and creativity. This shift will introduce new job categories and necessitate ongoing skill development. However, concerns include job insecurity and a skills mismatch, highlighting the need for reskilling and lifelong learning. Policymakers and business leaders must work together to ensure the benefits of technological progress are distributed equitably and to support workers through these transitions.

Rotman (2013) suggests that while technology historically boosted employment, widespread adoption may curtail future job availability. Automation increasingly requires workers to possess advanced technological competencies, potentially excluding those without such skills from the labour market. Both Andrew (2014) and Stanford (2020) acknowledge technology's role in displacing jobs, especially in sectors like professional services and retail. Despite efficiency gains, technological innovations have led to workforce reductions over time. Stanford (2020) highlights technology's potential to change the nature of work and perpetuate precarious work arrangements, influencing labour relations negatively by fostering conditions marked by unpredictability and insecurity.

This is to say that, technological change profoundly affects the nature of work by introducing new opportunities and challenges, affecting job quality, security, and the broader economic and social landscape. It can lead to the creation of new job roles and industries, such as those in software development and digital marketing, while transforming existing roles by introducing new tools and processes leading to precarious work for those who do routine work as indicated above. The rise in precarious work is influenced not only by technological factors but also through broader forces such as globalisation and economic policies (Bobek, Pembroke, and Wickham, 2018). This trend disproportionately affects segments of the workforce, particularly young individuals and women with limited skills, exacerbating global insecurities in

employment conditions (Kalleberg and Vallas, 2018). This section seeks to emphasise the intricate relationship between technological change, changing nature of work, and precarious work within contemporary labour markets.

2.3.1. Technological change and nature of work in the retail sector

The retail sector has been at the forefront of integrating technological innovations to enhance efficiency and customer experience. Automation, powered by advancements in robotics and AI, has revolutionised operations from inventory management to personalised marketing (Chui, Manyika, and Miremadi, 2016). Automated checkout systems, for example, streamline transactions and reduce waiting times, while AI algorithms analyse consumer data to tailor marketing strategies and predict consumer behaviour (Chui, Manyika, Miremadi, 2016). These technologies have significantly altered traditional job roles in retail, emphasising the need for digital literacy and customer engagement skills among workers. It has reshaped how retailers interact with customers and deliver services. Online platforms and mobile apps have expanded the reach of retail beyond physical stores, enabling e-commerce and omnichannel strategies (PwC, 2020). Customer service has changed with the introduction of chatbots and virtual assistants that provide real-time support and personalised recommendations (PwC, 2020). Consequently, frontline retail workers now require not only product knowledge but also proficiency in managing digital interfaces and resolving customer issues across multiple channels.

As technology continues to redefine retail operations, the demand for skilled workers capable of leveraging these tools has intensified. Retail workers are increasingly expected to possess analytical skills for interpreting data insights, technical skills for operating automated systems, and soft skills such as communication and adaptability to enhance customer satisfaction (Bughin, Chui, Manyika, Woetzel, 2018). Continuous training and upskilling programs are vital for keeping the workforce competitive amid rapid technological change. Bughin et al. (2018) emphasise that as industries change, workers need to continuously update their skills to adapt to new technologies and operational models. These programs address skill gaps, reduce unemployment risks, and support career growth. Investing in such training enhances organisational resilience and productivity, ensuring that workers remain adept and engaged in a changing industry landscape. While technological change in retail offers opportunities for efficiency and innovation, it also raises concerns about job security and working conditions. Automation may lead to job displacement for roles that can be automated, necessitating

retraining or transition to new roles within the organisation (Bessen, 2019). Moreover, the introduction of digital monitoring systems and performance metrics can impact workers' well-being and job satisfaction if not implemented with consideration for work-life balance and fair treatment (Bessen, 2019).

Looking ahead, the future of work in retail will likely be shaped by further advancements in AI, augmented reality (AR), and data analytics. These technologies promise enhanced personalisation, operational efficiency, and predictive capabilities, but they also pose challenges related to privacy, ethical use of data, and the equitable distribution of benefits (Manyika, Chui, Bughin, George, Willmott, 2017). Addressing these challenges will require collaborative efforts from industry stakeholders, policymakers, and educators to ensure that technological progress in retail translates into inclusive growth and opportunities for all segments of the workforce (Manyika et al., 2017). The retail sector exemplifies how technological innovation is transforming the nature of work, redefining job roles, skills requirements, and customer interactions. As retail continues to embrace digital transformation, proactive measures such as skills development, workforce training, and ethical guidelines are essential to navigate the evolving landscape effectively. Harnessing the potential of technology while addressing its challenges, the retail sector can foster a resilient workforce and sustainable growth in the digital economy.

2.3.2. Technological change and precarity

Technological change significantly influences precarity in the retail sector. Automation technologies, such as self-checkout kiosks, inventory management systems, and AI-driven customer service chatbots, are increasingly replacing roles traditionally held by human workers. This can lead to job displacement and increased insecurity for retail workers, particularly those in low-skill, routine positions. The shift towards e-commerce and digital platforms has further perpetuated this trend, as brick-and-mortar stores reduce their workforce or close altogether in response to online competition. The gig economy also plays a role in retail, with companies utilising flexible, on-demand labour for tasks like delivery and logistics. While this offers flexibility and new income opportunities, it often comes without the stability, benefits, and protections of traditional employment, contributing to precarious work conditions (Autor, Levy, and Murnane, 2003).

On the positive side, technology can create new opportunities within the retail sector. Roles in areas such as data analysis, digital marketing, and IT support are emerging as retailers adopt

more sophisticated technologies. However, these opportunities often require different skill sets, and there is a risk that workers displaced by automation may not be able to transition into these new roles without adequate support. As previously discussed, precarity is influenced by more than just technological factors. It is often seen as a neoliberal strategy aimed at maximising profits in private enterprises by promoting precarious jobs, low wages, and limited worker rights. It is also fuelled by economic factors, neo-liberal policy, global competition, and restructuring of business. Technological change is increasingly weakening labour markets by boosting productivity with fewer workers, which perpetuates the growth of contractual work and the decline of stable employment (Maria and Alexander, 2021). Digital technologies are consolidating wealth and influence, exacerbating unstable conditions for all workers, regardless of gender, class, race, or nationality. These technologies promote and exploit flexible labour, shifting risks onto workers.

Millar (2017) has summarised the multidimensionality of the concept of precarity in three components. He defined and understood precarity as a labour condition (Bourdieu, 1998), an economic condition (Standing, 2011), as well as a social and relational concept (Butler, 2004). Precarity as a labour condition, according to Bourdieu (1998) and Millar (2017), emerges from significant shifts in the labour market influenced by economic and political changes. The liberalisation of trade has led to increased global competition, resulting in the offshoring of jobs and the erosion of job security. Concurrently, the decline in the bargaining power of trade unions has diminished workers' ability to negotiate better wages and working conditions. This weakening of trade unions, combined with austerity measures that cut social spending and reduce state support, has resulted in a rise in precarious work. These jobs are often characterised by their temporary nature, low pay, and lack of benefits. This perspective sees precarity as a symptom of the contemporary era, reflecting broader political and social shifts that impact employment conditions beyond the workplace.

In the context of Standing's (2011) analysis, precarity as an economic condition highlights how changes in the economy shape job stability. The shift from manufacturing to a service-based economy, driven by technological advancements and globalisation, has led to more flexible but less secure employment arrangements. Economic policies and market dynamics, such as deregulation and financial crises, have contributed to the proliferation of non-standard work, including part-time, temporary, and gig jobs. These types of employment often come with lower wages and fewer benefits, illustrating how economic transformations have increased job insecurity and decreased the availability of stable, full-time positions. Butler (2004) and Millar

(2017) describe precarity as a social and relational concept that examines how social structures and relationships contribute to job insecurity. This approach focuses on how social inequalities such as those related to race, gender, and class intersect with labour market conditions to create precarious work environments. Social networks and relationships influence job stability and access to resources, with marginalised groups often facing higher levels of insecurity. Precarious work can also affect social relationships and community stability, as job insecurity often leads to stress and diminished social mobility. This perspective stresses that precarious work is not just an individual problem but a reflection of broader social inequalities and relational dynamics.

Although the term precarious work is commonly used, there is no universally accepted definition due to its complex and region-specific nature. This complexity arises from variations in labour market institutions across different countries, as well as differences in social, economic, and political systems. Moreover, precarious work encompasses a range of interconnected issues rather than a single, isolated problem (May 2019). Despite the abundance of opportunities, the future of employment remains characterised by significant uncertainty. Although the certainty of widespread technological unemployment and increased job precariousness is not guaranteed, these concerns are nonetheless significant. For instance, as populations age rapidly, there are fears that the workforce may face challenges such as widespread job insecurity, diminished worker bargaining power, and significant skill gaps.

2.4. Global perspectives on 4IR and precarious work

Technology has improved in many areas of human life. The 4IR is portrayed as a post-work era in which labour is threatened. As discussed above, the introduction of 4IR has sparked numerous discussions on the opportunities and challenges it presents for the future of work, and skills development (Letsoko and Pillay, 2019). It has caused a major change in the production processes (Ndzendze and Marwala, 2022), and forced workers to assess their skill sets to survive, and it has also rendered workers' skill sets obsolete and redundant according to those who view technological change as negatively affecting employment. The 4IR has caused changes that are also noticeable in the world of work, especially the employment relations between employers and workers. Many employments have been obsoleted because of rising automation and the widespread use of AI in the workplace, but new job opportunities have also been created because of this adoption (McGinnis, 2020). According to Carter (2019), it is more likely that AI systems will automate repetitive activities than they will entirely replace human

workers. The 4IR will therefore create new work opportunities that will also require new skill sets. These competencies encompass both basic digital literacy and soft skills like creativity that are hard for computers to replicate. Runde, Bandura, and Hammond (2019) mention that workers may also need to pursue lifelong learning in order to maintain their employment and acquire a variety of abilities. Therefore, workers in the retail sector and other industries must ensure that they are properly prepared to fulfil the ever-changing skill requirements. Technology and precarity are helping us understand how both (technology and precarity) change labour relations in the world of work, and how workers feel empowered and disempowered.

Internationally, the 4IR requires a new breed of worker, one who is talented, 'technologically savvy', and inventive. This increases the demand for new skills that may not be available now in order to prevent workers from being replaced by automation (Dhaou and Manda, 2019). One could argue that prioritising worker adaptation, reskilling, and upskilling in the retail sector and other sectors should take precedence over the introduction of new technologies. As articulated earlier, to remain competitive, the retail sector must reconsider how and where work is done, perhaps reshaping organisational structures, cultures, and procedures to accommodate the shifting trends of 4IR. Because of the rapid pace of technological change, present and future abilities of workers must be upskilled and trained. In such an environment, workers in the retail sector and other sectors will gain new job positions, and hence knowledge in multiple domains would be required (Letsoko and Pillay, 2019).

In the South African context, according to Ndzendze and Marwala, (2022), it is evident that from historical development to the current trends, the road to 4IR has been driven by the government, private sector, and consumer incentives, and this move requires that the country's economy is revived and diversified to ensure that new form of employment is created and protected. However, the benefits of innovation driven prosperity will not be fully realised for South Africans for some time, up until the country addresses the gap in education, connectivity, infrastructure, energy, and inequality in access in terms of gender, wealth, between urban and rural areas (Ndzendze and Marwala, 2022). Furthermore, there is a need for the government also to address the issue of brain drain, as many people with technological know-how leave the country and go to developed countries to seek better living and working conditions. Hence, education, infrastructure, connectivity, energy, and access are among other things very important steps in South Africa's transition to 4IR.

2.5. Retail sector and technological change

The retail revolution has made life easier for customers. As the COVID-19 crisis has spread across the country and the world over, compelling stores to shut down, the retail revolution offered an opportunity to help employers in the retail sector navigate the pandemic. It dealt with the new normal, which needed less touch. It is widely used in industrialised countries such as the United States of America (USA), the United Kingdom (UK), and Europe (Har, Rashid, Chuan, Seah, Xia, 2022). However, it appears that adopting these technologies will be difficult in less developing countries with limited internet connectivity. According to Har et al, (2022), the retail sector changed dramatically throughout the technological advancements. First, stores started to emerge in terms of retail 1.0 when steam engines started to produce mass-market goods.

During Retail 2.0, consumers flocked to inexpensive goods, leading to the construction of new malls. Consumers enjoyed worldwide online shopping in Retail 3.0, and as a result, their buying habits have changed because they can now purchase anything without having to leave their homes. Retail 4.0, according to Har et al. (2022), facilitates the speedy flow of goods and information between channels and provides customers with more individualised services, turning supply chains into customer-centric businesses. Over time, e-commerce has grown dramatically both internationally and in South Africa. In the USA, e-commerce has grown at the quickest rate since 2008. Customers in South Africa still prefer to hold and handle products, therefore depending on the type of product and the price, they combine online and in-store shopping (Prinsloo, 2016).

But as digital technologies progress, online shopping is projected to increase throughout the medium to long term. If digital devices like smartphones continue to expand, there will undoubtedly be an increase in the usage of digital technologies in the South African retail sector (McKenzie, Burt, and Dukeov 2018). Employers in the retail sector must be aware that what is successful now cannot be successful tomorrow. They must never stop learning new concepts and creating innovative approaches to problems. Employers must continue to examine, revise, and adapt new strategies, and they should not withstand turbulence but take advantage of the bright side of every cloud and create more benefits for stronger growth, creating a flexible organisation with a capable and agile staff. Upskilling, adaptation, or in some cases reskilling, will be necessary to stay up with the rate of change because the 4IR will result in job loss for routine and repetitive work, as well as skills shortage. Though technological change can

negatively affect jobs, change is not always negative, and threatened jobs might be seen as an opportunity to generate additional jobs. For instance, if machines are going to be replaced by self-service machines, those machines will need to be managed and maintained by workers.

Workers in the retail sector must adapt, and upgrade their skill sets in the context of technological change. A study conducted in the retail sector in Malaysia by Kamaruzaman and Rasul (2019) has identified the skills that will be crucial for workers who are working in the retail sector. According to the study, seven key competencies which include complex problem solving, critical thinking, creativity, system analysis, emotional intelligence, judgment, decision making, and lastly service orientation are skills that are needed in this sector. Dhaou and Manda (2019) also acknowledge that 4IR calls for a new breed of workers that are knowledgeable, technologically aware, and creative in order to prevent workers from being replaced by automation. Consequently, there is a growing demand for potential future skills that are not now in existence. There is a clear correlation between the risk of losing one's employment and the abilities needed for jobs in the 4IR era (Kamaruzaman and Rasul, 2019, Dhaou and Manda, 2019). Therefore, workers in the retail sector need to make sure they have the right tools to meet the ever-changing skill requirements.

2.6. Effects of technological change on others sectors of the economy

As it was said earlier, technological change brought about by 4IR is not only creating precarious work in the retail sector but also in other sectors of the economy. For instance, the banking sector has been more digitalised, and the normal patterns and methods of working are changing because of technological innovation. COVID-19 has also fast-tracked 4IR and served to amplify this technological influence. Drawing from Saputra Eliyana, Hamidah, Sariwulan, and Buchdadi (2020), Bastari, Eliyana, Syabarrudin, Arief, and Emur, (2020) have all argued that workers may experience different effects because of the need to adapt to digitalisation, some may perceive new technology as an immediate benefit, while others will need time to get used to it.

Workers will need to take steps to understand and prepare for these changes. The above authors continue saying that 4IR has both negative and positive effects on workers. Reduced job security, which leads to strikes against job loss, as well as occupational health problems connected to intentions to leave the workforce are some of the negative effects on workers. Retraining for new positions that demand a lifetime learning strategy and changed working

abilities connected to training for new working skills are some of the positive effects for workers.

Digitalisation is changing the nature of most occupations, and as a result, these positions are expected to involve new activities, skills requirements, and workplace changes. In the banking sector for instance, most of the manual, repetitive duties that bank workers once performed by hand are now carried out by machines, according to the studied literature, which demonstrates how digitalisation has changed the working role of bank workers. Bank workers around the world have been impacted by this in both positive and negative ways. In a nutshell, with the new responsibilities and the need for new skills, digitalisation has decreased job security, negatively impacted workers' occupational health, and changed the way they work. Bank workers have protested these impacts by going on strike, some have announced plans to leave or quit their jobs, and others have embraced the concept of lifelong learning and enrolled in training courses.

2.7. Theoretical framework

This section outlines the theoretical framework for exploring the effects of technological change on precarious work in the South African retail sector. It incorporates labour process theory to understand how technology reshapes work organisation and control, precarity to examine the rising job insecurity and instability linked to technological advancements, and the casualisation of labour to explore the increase in informal and temporary employment. Together, these theories offer a comprehensive perspective on how technological change is influencing employment practices and the nature of work in the retail sector.

2.7.1. Labour process theory

Labour process theory is one of Marx's (1887) crucial methods for exploring the relations of production and how work is organised under industrial capitalism, and it serves as the cornerstone of the labour process. His idea served as the foundation for the labour process theory, which has as its primary goal the examination of capital management and control. He argues that the sole purpose of production for capitalists is to amass surplus value (Marx, 1887). His analysis shows how the transition from manual to automated production of goods and services has eliminated skilled craft workers' capacity to exert decision and control over their labour force. The fundamental benefit of the labour process theory is that it emphasises each

stage of how society organises work. Because of its Marxist roots, this approach focuses on the issues and power imbalances that workers encounter when using and selling their labour power. The prevailing industrial and sociological ideologies of the 1960s and 1970s, which viewed change in work and professions as generally positive, were in direct opposition to Marx's viewpoint (Carter, 2021).

Labour process theory was further developed after Marx (1887) by academics such as Braverman (1974) and Burawoy (1979). They often take one of two primary approaches when analysing the management and control of the capital. The first step is the decoupling of technology and labour. Production is mechanised and made simpler so that it no longer depends on the expertise of the workers and just requires simple physical effort. Workers merely receive and follow simple operational instructions without much thought, and capital is required to carry out the working process and understand its result. Hence, the labour process is brought under the direct control of the capital.

Burawoy's Labour Process Theory (LPT) provides a critical perspective on the organisation and control of labour within capitalist systems. Building on Marxian concepts and extending earlier labour theories, LPT focuses on the power dynamics between employers and workers and the various methods used to manage the labour process. It examines how control mechanisms, ideologies, and resistance shape work practices and organisational structures. This framework is particularly relevant for analysing the labour processes in different sectors, including retail, by highlighting the complex interactions and conflicts inherent in work environments (Burawoy, 1979). The retail sector presents a unique context for applying Burawoy's labour process theory due to its specific labour dynamics and organisational practices. Retail environments often involve high levels of direct customer interaction, irregular work schedules, and intense managerial oversight. Burawoy's (1979) theory provides a lens through which to analyse these dynamics, focusing on how employers exert control over workers and how workers respond to these controls.

In the retail sector, management implements various control mechanisms to enhance efficiency and profitability. These may include performance monitoring systems, standardised task procedures, and the use of technology to track sales and worker productivity. According to Burawoy's (1979) theory, these control mechanisms are designed to align workers' activities with organisational goals, often resulting in increased work intensity and reduced autonomy. Retail organisations frequently employ ideological constructs to foster a sense of shared

purpose among workers. Concepts like customer satisfaction and teamwork are promoted to create a positive work environment and align workers with the company's objectives. Burawoy's (1979) framework reveals how these ideologies function to secure workers' consent to potentially unfavourable working conditions, such as long hours and irregular shifts. Framing these demands within a broader company mission or customer-focused approach, employers can reduce resistance and enhance worker compliance (Burawoy, 1979).

Burawoy's (1979) theory also addresses the ways in which workers resist managerial control and negotiate their working conditions. In the retail sector, resistance may manifest through informal practices such as working slower, avoiding certain tasks, or engaging in collective actions like forming trade unions or participating in strikes. Understanding these forms of resistance is essential for analysing how workers assert their agency and negotiate better conditions despite managerial pressures (Burawoy, 1979). Building on his analysis, Khumalo and Mazibuko (2023) examine contemporary forms of resistance in their recent study. They argue that subtle resistance methods, including strategic non-compliance and passive resistance, continue to be significant in the modern workplace.

Their study highlights how these forms of resistance are indicative of workers' dissatisfaction with their working conditions and their attempts to negotiate better terms within the constraints of their work environment. These subtle forms of resistance highlight workers' dissatisfaction and their efforts to cope with demanding work conditions (Khumalo and Mazibuko, 2023). Furthermore, formal resistance through unionisation and collective actions, such as strikes, plays a significant role in defending workers' rights and improving conditions. The South African Commercial, Catering, and Allied Workers Union (SACCAWU) is an example of how organised labour efforts contribute to negotiating better terms and conditions in the retail sector, demonstrating the ongoing relevance of Burawoy's (1979) theory in understanding worker agency and resistance (Moyo, 2020).

In the post-apartheid era, LPT has adapted to new challenges brought by globalisation and neoliberal economic policies. The introduction of Growth Employment and Redistribution (GEAR) in 1996 marked a shift towards privatisation and labour market flexibility, contributing to increased precarious employment. Standing's (2011) concept of the precariat reflects these changes, describing a growing class of workers facing job insecurity and instability. LPT helps analyse these trends, especially in sectors like retail where casual and part-time work are common. The advent of digital technologies has further transformed labour processes,

necessitating an updated approach to LPT. Digital tools and platforms in retail have reshaped work organisation and management, introducing new forms of control and surveillance. Burawoy's (1979) work on worker consent and resistance is relevant here, as it helps understand how retail workers interact with digital systems. Recent studies by Webster and Dor (2018) explore how digitalisation exacerbates inequalities and introduces new control mechanisms, emphasising the need to integrate technological changes into LPT.

Webster and Dor (2018) offer a comprehensive analysis of the profound impact of digital technologies on labour relations and social inequality. They assert that the 4IR, driven by advancements in automation, AI, and machine learning, has fundamentally changed the landscape of work. These technologies have enhanced productivity and efficiency but have also led to a significant rise in precarious employment. This type of employment is characterised by job insecurity, low wages, and a lack of traditional benefits, challenging the stability that was once a hallmark of full-time, permanent positions. Webster and Dor (2018) detail how this technological change has concentrated power in the hands of employers and capital, leading to a reduction in workers' bargaining power and their ability to organise effectively. The erosion of traditional labour protections and the weakening of trade unions' strength are central themes in their analysis. Despite these adversities, Webster and Dor (2018) explore how workers are innovating in response. They highlight emerging strategies such as using digital platforms for organising and collective action, which represent new avenues for workers to exert influence and negotiate for better conditions.

They also explore the socio-economic consequences of these technological shifts. Webster and Dor (2018) argue that the benefits of digital advancements are unevenly distributed, contributing to a widening gap between highly-skilled, well-compensated workers and those in low-skilled, precarious jobs. This disparity not only exacerbates economic inequality but also threatens social cohesion. They call for urgent reforms, emphasising new policies and regulatory measures to protect workers' rights in the face of technological disruption. They also emphasise the need for frameworks that ensure the fair distribution of technological gains and support the creation of equitable and sustainable labour markets.

In a nutshell, LPT provides valuable insights into the changing nature of work, highlighting the impact of socio-economic forces and technological advancements on labour processes. It highlights the need for adaptive organisational forms to effectively represent and protect workers in an increasingly precarious labour market. Webster and Dor's (2018) work stress the

need for a rethinking of labour policies and strategies in the digital age. It highlights both the challenges and opportunities presented by technological change and calls for a concerted effort to address the changing dynamics of work and inequality. This theoretical approach has also been further shaped by Webster (1985) and Crankshaw (1997), who highlighted racial and systemic inequalities in South Africa's labour processes during and after apartheid. Webster (1985) provides a critical examination of how labour processes in South Africa's foundries were shaped by racial divisions. His application of LPT reveals that labour processes were intricately designed to reinforce racial hierarchies. In the foundry sector, black workers were systematically relegated to lower-skilled, lower-paid positions, while white workers held more skilled and higher-paying roles. This racial division was not merely a product of discriminatory hiring practices but was deeply embedded within the labour process itself. His analysis extends to the role of trade unions, illustrating the complex interplay between labour movements and systemic racial inequalities. Trade unions, while striving for better working conditions and wages, faced the challenge of addressing the deeply entrenched racial structures that influenced labour relations.

Crankshaw (1997) builds on this analysis by examining how racial divisions changed throughout apartheid and their impact on labour processes across various sectors. His work provides a broader perspective, showing how apartheid's racial policies perpetuated and reshaped labour divisions over time. Despite policy changes aimed at relaxing apartheid restrictions, the fundamental racial divisions within labour processes remained resilient. His research highlights the persistence of these inequalities and the difficulties faced by labour movements in dismantling them. His analysis accentuates the enduring relevance of LPT in understanding how labour processes are influenced by and reinforces broader social and political structures. Integrating the insights from Webster (1985) and Crankshaw (1997) into LPT reveals the theory's utility in examining not only the technical aspects of labour processes but also how they are shaped by systemic inequalities. Webster's (1985) focus on the foundry sector and trade unions demonstrates how labour movements have historically interacted with racial divisions, providing valuable insights into the challenges faced by contemporary labour movements. Crankshaw's (1997) broader analysis contextualises these challenges within the changing landscape of apartheid policies, highlighting the ongoing relevance of LPT in understanding contemporary labour relations. Together, their work offers a comprehensive framework for analysing how historical and systemic inequalities continue to influence labour processes and trade unionism in South Africa.

Braverman (1974) argued that the advancement of technology and managerial techniques led to the degradation of work. His primary argument revolves around the degradation of work, a process he described as the systematic deskilling of labour. According to Braverman (1974), technological advancements and managerial strategies have led to the fragmentation of tasks into simpler components, thereby diminishing workers' skills and autonomy. This deskilling process is intended to make labour more manageable and cost-effective for capitalists, reflecting a broader trend towards greater control over the workforce. His analysis of the degradation of work characterised by the deskilling of labour and increased managerial control can be seen in the context of South Africa's historical and contemporary labour issues. Retail work often involves highly repetitive tasks that require minimal skill, such as cashiering, stocking shelves, and managing inventory. This fragmentation of tasks has been exacerbated by technological advancements like self-service kiosks and automated inventory systems, which further reduce the need for skilled labour. The result is a workforce that performs routine tasks with limited scope for skill development, reflecting Braverman's (1974) assertion that technological and managerial innovations lead to the degradation of work.

The rise of the 4IR and technological advancements are reshaping labour processes in South African retail. Automation, digital payment systems, and online shopping platforms are transforming the nature of retail work. While these technologies can enhance efficiency, they also contribute to the deskilling of labour and the growth of the precariat, a term coined by Standing (2011) to describe workers in insecure and unstable employment conditions. In the retail sector, these changes often result in fewer stable, full-time positions and an increase in part-time or gig-based work, which reflects the broader trends identified by Braverman (1974) and Standing (2011). The influence of technological advancements and economic pressures further complicates the labour landscape, leading to increased precarity and instability. In short, workers are deskilled and reduced to a merely part of production. Despite these challenges, unionisation and worker resistance continue to play a crucial role in shaping labour conditions, reflecting both the struggles and agency of workers within this evolving sector.

Technological progress has historically been a double-edged sword for workers, as it has both enhanced productivity and contributed to the deskilling of the workforce. Campbell, Skinner, and Todd (1976) highlight that both Marx (1887) and Smith (1776) recognised deskilling as a significant negative outcome of technological advancements. This deskilling process, according to Marx (1887), is not an unintended consequence but a deliberate strategy by capitalists to diminish workers' bargaining. Marx (1887) argued that technological

advancements in capitalist societies often lead to the deskilling of workers. He viewed deskilling as a deliberate tactic employed by capitalists to exert greater control over the labour process. Breaking down complex tasks into simpler, repetitive components, employers could reduce the skill requirements of workers and, consequently, their ability to negotiate better wages and working conditions. This reduction in skill levels not only made workers more replaceable but also weakened their collective bargaining power, thereby benefiting capitalists by increasing their control over labour relations (Campbell, Skinner, and Todd, 1976).

Smith (1776) also touched upon the impact of technological change on labour, while he acknowledged that technological advancements could lead to increased productivity and economic growth, he was concerned about the potential for such changes to diminish the skill levels of workers. He recognised that as tasks became more specialised and fragmented, workers could become less skilled overall, which could impact their economic mobility and job satisfaction. Campbell, Skinner, and Todd (1976) emphasise that Marx's (1887) analysis goes beyond Smith's (1776) more general observations by suggesting that deskilling is a purposeful strategy rather than a mere byproduct of technological change. According to Marx (1887), capitalists intentionally design production processes to make labour less skilled and more controllable. This strategy reduces the worker's ability to resist exploitation and improves the capitalist's leverage in labour relations. Thus, Marx's (1887) critique stresses a fundamental conflict between labour and capital, where technological change is manipulated to serve the interests of capital at the expense of labour's autonomy and power. The concept of deskilling remains relevant in contemporary discussions about the effects of the 4IR. Modern technological advancements, such as automation and AI, continue to transform labour markets and workplace dynamics, often resulting in similar patterns of deskilling. Understanding this historical perspective helps illuminate the ongoing challenges faced by workers in adapting to new technologies and the need for strategies to protect their interests.

Deskilling is currently understood in a variety of ways, but it is seen to be the loss of professional skills because of technology or workplace change. This is to say that management transfers the knowledge and skills of workers into machinery, deskilling them and frequently lowering immediate costs. Braverman (1974) in his study attempted to update labour process theory by looking at skills, technology, and work organisation from new perspectives. As new forms of science and technology entered the service capital, the possibility of administrative control increased and led to a major deskilling of labour. Despite criticism for being outdated, limited to the craft sector, and exaggerating the consequences of Taylorism in the workplace,

this perspective nevertheless has a big influence (Meiksins, 1994, Huws, 2003). Based on the argument above, one could argue that the idea of deskilling through technological innovation, and restructuring of work is one of the key components of labour process theory and describes what happens when those who own the means of production continually restructure the workplace to make production processes less expensive.

It may be argued that the advent of new technologies and new production techniques has the potential to deskill workers or strip them of their conventional skills rather than freeing the modern workforce from physical labour or upskilling them. Braverman (1974) remarked that Marx (1887) had shown how the drive behind capital accumulation constantly transforms production processes. These changes may be seen in the way science and technology are applied to production, how they impact the labour process in each sector of the economy, and how labour is distributed among different jobs and sectors of the economy.

Braverman (1974) states that deskilling theory makes workers become passive objects who can only follow orders rather than active participants in their work because of the division of labour, which separates the planning and execution of work. This, in turn, results in the deskilling of workers. This means that by utilising modern technology, workers and their skills are removed from labour processes. Because fewer skilled workers must be hired at lower rates, the owners of the means of production will incur fewer expenditures and generate more profit as a result. Deskilling may also result in high unemployment, job loss, work instability, and polarisation of skills and capital in the labour market.

Schwab (2016) argues that this was particularly evident in the 3IR, which saw the automation of industrial operations. With comparable potential effects to those found in the 3IR, advanced technologies of the 4IR entail the digitalisation of service activities. While Braverman's (1974) idea has been the subject of intense discussion, the deskilling argument has recently lost ground in discussions of technology, partly because of case studies that highlight the less clear-cut ability of technology to upskill or deskill workers. Given the prevalence of computers and the internet in day-to-day work, claims that industrial technology is inevitably causing deskilling and a decline in employment are less credible. However, supporters of upskilling such as Katz and Murphy (1992) and Acemoglu (2002) argue that technological advancement has led to an increase in the need for skills. This demonstrates that as technology develops, so does the demand for highly qualified individuals, necessitating the need for more specialists with advanced degrees. Based on that, it may be argued that SACCAWU must ensure that its

members are reskilled and upskilled so that they remain relevant in the retail sector in the context of the 4IR. Other thinkers like Babbage (1835), also thought about how skills and capital complement each other, and how technological advancements affect the development of skills. In contrast to deskilling, which occurs when workers lose skills that are in demand in the workforce, upskilling occurs because of growing automation or technological innovation (Peng, Wang, and Han, 2018). This illustrates that shifts in worker skills are not always bad, rather, beneficial results can be obtained if technology is purposefully conceived and put into use while keeping in mind not only the specific human and algorithmic process but also the synergistic interactions.

2.7.2. Precarity and casualisation of labour

Standing's seminal work (2011) provides a foundational understanding of the emerging social class known as the precariat. Standing (2011) characterises the precariat as a class defined by economic insecurity, lack of job security, and fragmented work experiences. This contrasts sharply with the traditional working class, which historically enjoyed more stable employment and a clearer path to social mobility. According to Standing (2011), the precariat is marked by insecure employment, often consisting of short-term, temporary, or gig-based jobs that lack long-term stability. Furthermore, earnings for those in the precariat are typically lower, and they frequently lack access to essential social protections such as health insurance, pensions, and unemployment benefits (Standing, 2011). The rise of the precariat can be attributed to several key factors. Neoliberal policies, which emphasise deregulation, privatisation, and labour market flexibility, have played a significant role in creating precarious work environments. Globalisation has further exacerbated this issue by increasing global competition and facilitating the offshoring of jobs, thereby eroding traditional job security. Furthermore, technological change and automation have transformed labour markets, often leading to a proliferation of gig and freelance work (Standing, 2011).

Technological advancements in the South African retail sector have transformed job structures and employment practices. The rise of automation, digital platforms, and self-checkout systems has led to a reduction in the number of traditional retail jobs, contributing to job insecurity and fragmented employment experiences for workers. For instance, automation and digital tools have streamlined various aspects of retail operations, from inventory management to customer transactions. While these technologies have improved efficiency and reduced costs for retailers, they have also led to job losses and a shift towards more precarious forms of employment, such

as temporary or gig-based work (Standing, 2011). As he highlights, the precariat is characterised by its lack of job security and limited access to social protections. This is evident in the South African retail sector, where many workers face unstable employment conditions and insufficient social safety nets. The prevalence of temporary contracts and part-time work further worsens these challenges. Retail workers are often employed on a short-term basis, with limited benefits and minimal job security, reflecting the broader trends of precarity described by Standing (Standing, 2011). The impact of technological change on the retail sector also contributes to economic vulnerability among workers. The shift towards more automated and digitally driven operations has led to wage suppression and reduced job stability. For example, the introduction of self-service kiosks and online shopping platforms has diminished the demand for in-store cashiers and support staff. This shift not only affects job security but also impacts wages, as workers in these roles may face reduced hours or lower pay rates.

Barchiesi's (2011) examination of the precariat in South Africa, builds upon Standing's (2011) foundational framework to offer a nuanced view of labour market insecurities within the South African context. Barchiesi (2011) highlights how neoliberal economic policies have exacerbated vulnerabilities within the labour market, deeply influencing the experiences of the South African precariat. Barchiesi's (2011) work delineates the unique challenges faced by the South African precariat, which include persistently high unemployment rates and a large informal employment sector. The informal sector, while providing crucial livelihoods for many, is characterised by low wages, job insecurity, and limited access to social protections. This sector's expansion is partially a consequence of formal sector job losses and the structural adjustments prescribed by neoliberal policies, which have failed to deliver inclusive economic growth. Consequently, the South African precariat is caught in a cycle of precarious employment, where job stability and fair wages are elusive.

Moreover, Barchiesi (2011) examines the erosion of trade union power as a critical factor contributing to the precariat's insecurity. Trade unions, previously strong defenders for workers' rights, have encountered considerable difficulties in mobilising effectively within neoliberal constraints. The erosion of trade union influence has reduced collective bargaining power, making workers more susceptible to exploitation and less capable of negotiating improved working conditions. A key aspect of Barchiesi's (2011) analysis is the intersectionality of race, class, and labour market dynamics. He demonstrates that the South African precariat's experiences are shaped by a complex interplay of these factors. The legacy of apartheid has left a profound impact on labour market structures, perpetuating racial and

economic inequalities. The intersections of race and class exacerbate the precariat's challenges, as marginalised groups face compounded disadvantages in accessing stable and well-paying employment. His work stresses the distinct pressures faced by South African workers in comparison to their counterparts in more developed economies. While the precariat's global experiences share some commonalities, such as job insecurity and income instability, the specific historical and socio-economic context of South Africa creates a unique set of pressures. His analysis thus provides valuable insights into the localised dimensions of precarity, enriching the broader understanding of labour market insecurities in the Global South.

The essays in the 2016 issue of the *Global Labour Journal* (GLJ) offer a comprehensive view of the precariat from different regional perspectives, particularly focusing on the Global South. Ahuvia's (2016) essay provides a detailed examination of how globalisation impacts labour conditions in South Asia. Ahuvia (2016) argues that while the Global North experiences precarity through advanced technological and economic changes, South Asia's precariat emerges from a complex interplay of historical exploitation, rapid industrialisation, and uneven economic growth. He contends that the precariat in South Asia is shaped by specific socio-economic dynamics, such as the prevalence of informal work, weak labour protections, and the precarious nature of employment in the burgeoning informal economy. Ahuvia's (2016) analysis highlights how globalisation, rather than uniformly improving conditions, often exacerbates inequalities and deepens the vulnerabilities faced by workers in the Global South.

Similarly, Smith's (2016) essay provides an in-depth look at the conditions of workers in Sub-Saharan Africa. Smith (2016) explores how informal employment and exploitative labour practices contribute to the expansion of the precariat in this region. The analysis emphasises that the precariat in Sub-Saharan Africa is characterised by extreme job insecurity, low wages, and minimal social protections. Smith (2016) attributes these conditions to structural issues such as inadequate regulatory frameworks, economic instability, and the persistent informality of the labour market. He argues that the precariat in Sub-Saharan Africa faces a distinct form of vulnerability compared to other regions, rooted in both historical exploitation and the challenges of contemporary economic policies. Together, these essays from the *Global Labour Journal* illustrate that while the precariat shares some common features globally, its manifestations are highly context-specific. The impact of globalisation and local economic conditions play crucial roles in shaping the experiences of precarious workers. Ahuvia and Smith's (2016) contributions highlight the need for regionally nuanced approaches to understanding and addressing precarity, emphasising that solutions must be tailored to the

unique challenges faced by workers in different parts of the world. Considering technological change, the overall status of the working class can thus be regarded as precarious, with the constant fear of being employed in unpredictable and insecure jobs. The existence of precarity is a wave of the harsh realities of capitalism, particularly those related to the multinational monopoly-finance capital of the present.

Numerous management and social science scholars have examined casualisation from a range of perspectives, including temporary or short-term roles with variable hours (Kalejaiye, 2014) and unconventional work arrangements (Fapohunda, 2012). The term 'casualisation' refers to the increasing trend of substituting temporary, part-time, or casual work for long-term, full-time employment. Numerous factors, including shifts in the economy, advancements in technology, and labour laws, might cause this to happen in a variety of sectors. This is to say that, as more workers are forced into unstable and unexpected working arrangements, the casualisation of labour may increase the amount of precarious work. It can be challenging for casual workers to make ends meet and plan for a better future because they frequently lack access to benefits like paid leave, job stability, and social protection. Based on the above, one could argue that casualisation presents a precarious future for workers.

The Walmart case in Mexico and South Korea demonstrates unequivocally how casual labour is utilised and exploited to further capitalist profit goals. The Workers' experiences demonstrate how they are compelled to perform longer shifts without receiving overtime compensation or to depart early when the stores are empty (Alexander, 2012). During calm and quiet times, Walmart frequently terminates the contracts of workers based on false accusations. According to Alexander (2012), this is solely to assure that new casual workers will be employed at a lower wage rate than more experienced workers when the store becomes busy once more. Hence, this demonstrates how unstable these workers' employment status is. The South African situation is comparable to that of Mexico or South Korea. Walmart's entry into South Africa reveals the limitations of the neo-liberal policies that have been completely implemented in the country. Due to these measures, workers' conditions and workplace security have deteriorated, resulting in a steady erosion of labour rights (Alexander, 2012).

In her study on casualisation and the degradation of work in Nigeria, Fapohunda (2012) sampled 135 respondents from five (5) selected businesses across three (3) different sectors. According to the study, contract workers' salary is neither equitable nor equivalent to that of permanent workers. They are not allowed to organise or take advantage of collective

bargaining. Most of the time, they are not protected from employer exploitation. Casualisation harms workers and has serious repercussions for the economy of the country and the business. The study suggests that casualisation be thoroughly examined and, if feasible, fully banned from the workforce. This is to say that; casual work is becoming a common aspect of labour markets in developing countries and has become more prevalent in industrialised countries. According to the International Labour Organisation (2019), a third of paid employment in Bangladesh and India and one in three in Mali and Zimbabwe are casual jobs. One out of every four workers in Australia have casual work, and this is a country where casual employment is a distinct type of employment.

Like casual work in poor countries, part-time work in industrialised countries has been diversified into very short hours or on-call jobs, including zero-hours contracts. At the end of 2015, 2.5% of workers in the United Kingdom (UK) were on zero-hours contracts, and the lowest-paid workers are particularly impacted by the 10% of the workforce in the United States of America (USA) who have unpredictable and on-call schedules (ILO, 2019). The employment statistics of several industrialised countries according to ILO (2019) show a surge in non-permanent employment. Since many of them work in temporary casual occupations in developing countries, non-permanent employment has always made up a sizable portion of the labour force. However, non-permanent employment has also increased in areas of the labour market that were historically identified with permanent jobs. Although there is not enough information about some non-permanent employment to measure trends, there is nevertheless evidence of a rise in public debate and the rising anxiety that many workers feel about their jobs, both permanent and non-permanent work.

Numerous factors have contributed to the increase in non-permanent employment. It reflects changes like work brought about by globalisation, best exemplified by the interconnectedness of businesses globally through global supply chains, technological advancements that have facilitated this connectedness, the shifting of manufacturing to developing countries, and the expansion of the services sector globally, but also because of social changes like the increased role of women in the global labour force, and ongoing technological advancements (ILO, 2019). In Mali and Zimbabwe, casual employment makes up more than 35% of all wage employment. While the prevalence of casual employment is generally low in Ghana, it accounts for 34.2% of all wage workers in the agricultural sector, as opposed to 15.5% of workers in the manufacturing sector and 4.8% in the services sector. In Uganda, the overall proportion of casual employment was 13.7% in 2011. Over the years 2001 to 2011, there was a nearly twofold

growth in casual employment in Kenya, reaching more than 30% of all employment, while regular wage employment fell from 21% to 13% of all employment (ILO, 2019).

The growing trend in casualisation is even more obvious when looking at South Africa's first 15 years as a democratic country. The research conducted by Leibbrandt, Woolard, McEwen, and Koep (2010) indicates that between 1993 and 2008, there was a significant increase in what they refer to as casual and part-time work. According to the data, 14% of employed workers fell into this category in 1993, but that number increased to 15% by 1997, 26% by 2001, the same for 2005, and finally 31% by 2008. Because most individuals migrate from rural to urban regions in search of decent opportunities, casualisation is a frequent practice in developing countries like South Africa (Yen, Platt, Yeah, and Lam, 2015). When people are unable to find decent jobs in their desired fields, they are forced to work as casual workers so that they can put bread and butter on the table for their family members.

It is clear that numerous large multinational retailers, including Makro stores, Shoprite, PEP Stores, and Spar, to mention a few, have a history of hiring most of their staff under casual employment agreements, even for positions that are effectively permanent, like cashiers. In countries like South Africa, Zambia, and Lesotho in southern Africa, this is true because of their geographical footprint. To avoid breaking the legislation of casual employment, several employers of temporary workers provide them with six-month contracts that are frequently renewed (Bodipe, 2006). The trade union movement struggles to find and keep casual workers for a variety of reasons. The work is sporadic and continually shifting in character. Casual workers feel intimidated because they do not want to affiliate with trade unions for fear of losing their jobs. Workers, especially temporary workers, are frequently threatened by their employers with job loss if they decide to join trade unions. In South Africa, in the fiercely competitive retail sector, where profit margins are slim, restructuring has increased the use of casual workers, who are poorly paid, receive no benefits, and frequently have interests that diverge from those of permanent workers. The retail sector has seen an increase in casualisation, and, more recently, subcontracting. Kenny (1998) argues that a common practice in South Africa's retail sector is the use of casual workers, and this is acknowledged by the 2014/2015 W&RSETA SSP report which argues that the sector is characterised by significant levels of casualisation.

Precarious work and casualisation of labour are a global dilemma with far-reaching ramifications for the working class. The changing nature of the labour market has resulted in

precarious work and job instability. The empirical research on precarious work is still developing, although it has so far mostly focused on industrialised countries, the relatively little data for emerging countries, especially in Africa, has mainly concentrated on the informal sector. Over half of the employment generated between 2007 and 2013 was precarious, according to Organization for Economic Cooperation and Development (OECD) data collected from twenty-six (26) European countries. Precarious employment increased in the USA from 10.7% in 2005 to 17.2% in 2015 (Kalleberg and Vallas, 2018). Like this, 1 in 10 UK workers were employed in precarious positions in 2019 (Trade Union Congress, 2019), up more than 27% from 2011 to 2019.

According to empirical operations management research, precarious employment generally results in lower costs, more flexibility, and ultimately better financial performance for employers (Kesavan, Staat, and Gilland, 2014). However, studies in other fields, like sociology, industrial relations, and human resource management, show that these unstable, unprotected, and insecure jobs can be harmful to workers' welfare. It is believed that precarious work is a multifaceted concept that includes low pay, insecure employment, and a lack of rights and protections. These characteristics result in social and economic insecurity, physical and psychological stress, and possibly precarious situations as indicated by Berry and Bell (2018), Fisher and Connelly (2017).

There is a growing likelihood that all employment in South Africa will eventually be precarious due to the prevalence of precarious work in both the public and private sectors (Hlatshwayo, 2019). Due to the collapse of the labour movement and the rise in employer exploitation, precarious workers and their families' conditions have gotten worse (Barchiesi, 2011). These workers have unstable jobs and low compensation. In comparison to other African countries, South Africa has a sizeable formal economy that is mostly reliant on precarious employment. Mabasa (2017) asserts in a study examining trends in the official South African labour market that economic restructuring has created a two-tiered labour force in contemporary South Africa, consisting of a small number of workers in permanent employment and a large number of vulnerable workers in precarious employment with little rights. Precarious work and casualisation of labour were inspired by a group of social, political, and economists whose neoliberal thinking captured the attention of political leaders in the 1970s. The key assumption of their thinking was that market competitiveness is the only way to stimulate growth and economic development, and it must be allowed to penetrate all aspects of society (Standing, 2011). They were of the view that governments should boost labour market flexibility, which

transformed into a plan for shifting risks and insecurity onto workers and their families. As a result of this thinking, a worldwide 'precariat' has emerged, comprised of many millions of workers around the world whose working conditions are unpredictable, insecure, unregulated often lack consistent occupational identity.

Standing (2011) argues that, if something is not done, the precariat is becoming a new dangerous class and a spark for revolution, political and social turmoil, and opposition to the system and state. The triumph of the neo-liberal agenda, which has been adopted to varying degrees by many governments around the world, has resulted in the birth of this new dangerous class. Building on that, one could argue that the neo-liberal agenda has led to a plethora of harmful socioeconomic consequences for the working class not only in South Africa but the entire world where the living and working conditions of many workers have deteriorated and continue to worsen due to the austerity measures, globalisation and technological changes that are taking place in the world of work. Neoliberal policies, institutional transformation, and digital technologies have resulted in a large and growing number of people 'precariat' who share the common struggle. This new class is the victim of the capitalist system because the casualisation of labour is not a symptom of capitalism but is the natural result of a profit-driven system. Thus, precarious labour is the result of capitalism's processes as articulated by Marx (1887).

The global economy has changed rapidly because of labour globalisation, increased automation, and, most importantly, the rise of Big Finance, Big Pharma, and Big Tech in the 1980s (Standing, 2018). As a result, many workers have lost their jobs, and others have been subjected to harsh socio-economic realities which have fuelled violent protests in many communities around the world. According to Standing (2018) the precariat, a mass class defined by insecure labour, loss of identity, and eroding rights, has emerged as today's new dangerous class, with the capacity to bring about transformation if organised as a class. Based on the above, one could argue that the precariat is not only the victim of capitalism, but it also carries transformational potential because its demands cannot be addressed within the confines of the capitalist system.

The class system that underpins modern capitalism is that of the bourgeoisie and proletariat, which were created by capitalism. Insecure employment, low pay, and losing citizenship privileges characterise the precariat, which is also today's mass class. Their fears give rise to hatred, violence, illness, and animosity, which right-wing populism utilises to destabilise a

state, making them the new dangerous class. A plutocracy led by a small number of dishonest billionaires has emerged as a result of industrial capitalism, building upon pre-existing class relations (Standing, 2018). Although most are in the West, Asia and other developing market economies are seeing an increase in the number of plutocrats. Under them is an elite that serves the interests of the plutocracy while earning large rental money.

2.8. Conclusion

This chapter provided a comprehensive examination of how technological change has reshaped labour processes and the nature of work, with a particular emphasis on the 4IR. It begins by exploring the transformative effects of technologies such as the Internet of Things (IoT) and artificial intelligence (AI) across various sectors, especially in retail. These advancements have shifted business models from traditional mass production to the customisation of goods and services, thereby creating a demand for a more skilled and adaptable workforce. It critically assesses the implications of these technological shifts for job security and working conditions within the South African retail sector, highlighting the precarious nature of employment in this context.

It offered a historical perspective on industrial revolutions to contextualise the current technological era. It started with the 1IR in the 1750s, marked by the introduction of steam engines and mechanised production processes. This period saw significant changes in work practices but was also characterised by poor working conditions and pronounced wealth disparities. The discussion then moved to the 2IR, which occurred from 1870 to 1914, a time of major advancements in steel production, oil extraction, and the use of electricity. This revolution facilitated mass manufacturing and improved living standards for many, although it also led to widespread worker exploitation and health issues due to the harsh industrial environment. The 3IR, or the digital revolution, began in the 1950s with the advent of personal computers and the internet. This era brought about substantial transformations in various industries, creating new job opportunities while also leading to the displacement of traditional roles. The chapter outlined how the digital revolution laid the groundwork for the current 4IR.

The 4IR is characterised by breakthroughs in AI, robotics, IoT, and biotechnology, just to mention a few. This chapter explored how these technologies are revolutionising work practices and organisational structures. Although the 4IR promises increased efficiency and productivity, it also introduces new challenges such as job displacement, privacy concerns, and ethical

issues. It critiqued the often-apolitical narrative surrounding the 4IR, arguing that technological progress is not neutral but is influenced by existing power structures and can exacerbate socioeconomic inequalities. Labour process theory is central to the chapter's analysis. LPT, grounded in Marxist theory, examined how technology changes the nature of work and the dynamics of control between employers and workers. The theory focused on issues such as deskilling and increased managerial control, highlighting how technological advancements can lead to a reduction in workers' autonomy and job security. It also introduced the concept of the precariat, a growing class of workers who face job insecurity and instability due to neoliberal policies, globalisation, and technological change. In the South African retail sector, these changes have resulted in a decline in stable, full-time positions and an increase in part-time and gig-based work, contributing to greater job precarity and instability.

The effects of digital technologies on labour relations and social inequality were critically examined. Automation, AI, and machine learning have led to a concentration of power among employers, diminishing workers' bargaining power and weakening traditional labour protections. The chapter argued for the need to develop new policies and regulatory measures to protect workers' rights and ensure that the benefits of technological advancements are distributed more equitably. In short, the chapter argued that while technological advancements present significant opportunities for increased efficiency and productivity, they also pose substantial challenges. To address these issues, it emphasised the necessity for adaptive organisational forms and policies that protect workers' rights and ensures a fair distribution of the benefits derived from technological progress amidst ongoing digital transformation.

CHAPTER 3: RESEARCH METHODOLOGY AND METHODS

3.1. Introduction

Research methodology represents a core component of scholarly inquiry, providing a structured framework for the systematic collection, analysis, and interpretation of data. It encompasses more than the selection of research methods; it involves the theoretical and philosophical foundations that underpin the research process. According to Kothari (2004), methodology is essential for defining the research paradigm, informing the formulation and addressing of research questions, and ensuring that findings are valid, reliable, and aligned with the research objectives. This research explores the effects of technological change on the changing nature of work, with a specific emphasis on precarious employment within the retail sector in South Africa. Given the rapid pace of technological innovation and its profound effects on labour markets, a rigorous methodological approach is imperative to capture the complex effects of these changes on work conditions and job security.

The methodological framework for this research is anchored in established theoretical constructs, such as the labour process theory, and the concept of the precariat and casualisation. These frameworks provide critical insights into how technological change is reshaping labour relations and worker experiences. Integrating these theoretical perspectives ensures a comprehensive and contextually relevant examination of the subject. This chapter outlines the methodological strategies employed in this research, specifying the procedures and tools used for data collection and analysis. The objective is to explain how technological change influences work dynamics and contribute to increased job insecurity. Through a detailed explanation of the methodological approach, this chapter aims to ensure that the research's findings are derived from a robust and methodologically sound framework, thereby enhancing the understanding of the interaction or relationship between technological change and the changing nature of work within the retail sector in South Africa.

3.2. Research design

This research adopts a qualitative research methodology to comprehensively explore and understand the effect of technological change on work conditions within the retail sector. Unlike quantitative research, which relies on numerical data and statistical techniques to identify patterns and make generalisations, qualitative research focuses on the richness of

verbal data and the depth of individual experiences (Creswell, 2016). This methodology is particularly adept at uncovering how individuals perceive and interpret their work environments through their personal opinions and lived experiences. The research specifically targets members of the South African Commercial Catering and Allied Workers Union (SACCAWU) who are employed at a variety of retail establishments, including Makro stores, Builders, Melbro Wholesale, and Pick and Pay, located within the eThekweni Municipality, KwaZulu-Natal. To capture a broad and nuanced view of the retail work environment, respondents were selected from a range of departments within these establishments. These departments include receiving, management, human resources, front-end operations, liquor, general merchandise, food development, sales, and online shopping. This diverse selection of respondents ensures a well-rounded understanding of the various aspects of retail work and how technological change affects different facets of their roles.

Qualitative research enables the collection of detailed and nuanced information regarding workers' ideas, opinions, thoughts, feelings, and attitudes about their work environment and experiences. This approach allows researcher to explore into the subjective dimensions of workers' experiences, providing a richer and more profound understanding of the issues at hand (Newell and Burnard, 2006). Focusing on the personal and subjective realities of the respondents, qualitative research captures the complexity of their experiences in the retail sector, which may be overlooked in quantitative studies. The decision to use qualitative methods in this research is driven by the need to gather in-depth, contextual data that reflects the lived experiences of retail workers.

This approach offers a deeper insight into how technological change is reshaping labour conditions and contributing to job insecurity. Through detailed exploration of individual experiences and perceptions, qualitative research allows for a nuanced analysis of the effect of technological change on workers' lives and livelihoods, revealing complexities that quantitative methods might not fully address. In a nutshell, the qualitative research design facilitates an in-depth understanding of the ways in which technological innovations influence work conditions in the retail sector. It provides a comprehensive view of how these changes affect workers' roles, job security, and overall work experience, making it an invaluable approach for examining the intricate dynamics of technological change in this context.

3.3. Research paradigm

A research paradigm serves as a foundational framework for guiding the research process, encompassing a set of shared values, assumptions, and beliefs among researchers that shape the approach to inquiry and influence the quality of the research (du Plooy-Cilliers, 2014). This research operates within the interpretivist paradigm, which is particularly suited for exploring meaningful social interactions and understanding the complexities of human experiences. The interpretivist paradigm posits that people and their experiences should be studied in their natural settings, recognising that individuals are not merely objects of study but active participants in shaping their realities. This perspective is critical for examining how technological advancements, specifically those associated with the Fourth Industrial Revolution (4IR), influence the nature of precarious work and labour relations within the retail sector. Focusing on the subjective experiences of workers, the interpretivist paradigm enables a comprehensive understanding of how this technological change informs, shapes, and alters labour conditions and relationships.

According to Krauss (2005), the interpretivist paradigm provides intersubjective epistemological and ontological beliefs that facilitate the exploration of the social construction of reality. This approach acknowledges that reality is constructed through individuals' subjective experiences and interactions with the external world. Therefore, understanding how SACCAWU members perceive and interpret the effects of technological change requires examining their lived experiences and personal perspectives within the context of their work environments. The choice of the interpretivist paradigm in this research is grounded in its methodological principle of understanding phenomena from the subjective viewpoints of those directly affected. This paradigm allows for an in-depth exploration of the nuanced ways in which technological change influences workers' roles, job security, and overall experiences in the retail sector. Prioritising the subjective experiences of SACCAWU members employed at Makro stores, Builders, Melbro Wholesale, and Pick and Pay, the research aims to uncover the complexities and dynamics of precarious work in light of technological change. The interpretivist paradigm offers a robust framework for examining the effects of technological change on labour relations from the perspective of the individuals experiencing these changes. It facilitates a deeper understanding of how technological change shapes the nature of work and provides valuable insights into the subjective realities of workers in the retail sector. This

approach ensures that the research captures the full spectrum of experiences and meanings associated with technological innovation in the context of precarious employment.

3.4. Population and sampling techniques

In research, the term population refers to a specific group of individuals or entities that share common characteristics relevant to the research. For this research project, the population consisted of members of the South African Commercial Catering and Allied Workers Union (SACCAWU) who are employed in the retail sector. The focus on SACCAWU members ensures that the research is grounded in the experiences of workers directly affected by technological change in retail environments. Given the qualitative nature of this research, the sampling approach emphasises the relevance of the sample to the research objectives rather than striving for statistical representativeness (Neuman, 2000). Non-probability sampling techniques are particularly suitable for qualitative research, as they allow for the selection of individuals who can provide in-depth and meaningful insights into the research topic.

The primary sampling method used in this research is purposive sampling. This technique involves selecting respondents based on specific criteria that align with the research's aim. Purposive sampling is advantageous in qualitative research because it targets individuals who possess particular attributes or experiences pertinent to the research's focus. For this research, as discussed above, workers were chosen from various departments within retail establishments such as Makro stores, Builders, Melbro Wholesale, and Pick and Pay. This diverse selection ensures a broad representation of roles and experiences within the retail sector. The rationale for using purposive sampling lies in its ability to yield rich, detailed data from individuals who can offer valuable insights into the effects of technological change on their work and job security. Selecting respondents who meet predefined criteria, the research is able to explore deeply into the specific challenges and experiences encountered by retail workers as they navigate technological changes (Creswell, 2016).

In addition to purposive sampling, snowball sampling was employed to extend the respondent pool. This technique involves asking initial respondents to refer other individuals who may have relevant experiences or insights related to the research topic. Snowball sampling is particularly effective for reaching additional respondents who might otherwise be difficult to identify. This method not only helps in expanding the respondent base but also facilitates the inclusion of diverse perspectives from different departments and organisational levels within

the retail sector. The combination of purposive and snowball sampling techniques ensures a comprehensive approach to data collection. Purposive sampling ensures that key individuals with relevant experiences are included, while snowball sampling enhances the diversity and breadth of the dataset by incorporating referrals from initial respondents. Together, these methods provide a robust framework for exploring the effect of technological change on retail workers, capturing a wide range of experiences and perspectives that contribute to a deeper understanding of the research topic.

3.5. Sampling and sample size

This research focused on interviewing twenty SACCAWU members employed in various retail establishments. It is essential to note that this sample size is specific to the research's qualitative approach and does not aim to represent the entire retail sector. The objective of qualitative research is to provide deep, context-rich insights rather than to achieve statistical generalisability (Creswell, 2016). Therefore, while the findings offer valuable insights into the experiences of these SACCAWU members, they are not intended to be generalised to all retail workers. Qualitative research values the depth of understanding over the breadth of statistical representation. Consequently, a smaller, more focused sample allows for a more detailed exploration of respondents' experiences and perspectives (Newell and Burnard, 2006). The twenty respondents were selected to provide rich, in-depth data on how technological change affects their work conditions and job security within the retail sector.

As discussed above, the sampling strategy used in this research were purposive and snowballing sampling. This non-probability sampling technique involves selecting respondents based on specific characteristics relevant to the research objectives, rather than random selection. Purposive sampling targets individuals who are expected to provide the most pertinent and insightful information related to the research's focus (Kelly, 2010). In this case, workers from diverse departments within retail establishments such as Makro, Builders, Melbro Wholesale, and Pick and Pay were chosen to ensure a comprehensive understanding of the various facets of retail work. To further refine the sample, snowball sampling was employed. This technique involves initial respondents referring additional individuals who meet the research criteria, thereby expanding the sample pool through respondents' networks. Snowball sampling was particularly useful in identifying additional respondents who could offer further valuable insights, enhancing the diversity of perspectives within the sample.

Inclusion criteria for this research required that respondents be SACCAWU members, employed in the eThekweni Municipality, and aged between 21 and 65 years. The research aimed to include a range of genders and racial backgrounds to ensure diverse representation. Workers outside these criteria, or those not affiliated with SACCAWU, were excluded. The selection of SACCAWU members was influenced by the researcher's professional relationships and the ease of access to this group. The recruitment process involved identifying suitable respondents based on the criteria and then using snowball sampling to reach additional respondents. This approach facilitated the collection of comprehensive and varied data, providing a nuanced understanding of how technological advancements are affecting retail workers. The sampling and sample size for this research were designed to align with the research's qualitative nature and objectives. Purposive sampling ensured the inclusion of relevant respondents, while snowball sampling expanded the respondent pool and enriched the data collection. Although the findings are specific to the selected sample, they offer meaningful insights into the effects of technological change on SACCAWU members and their work conditions within the retail sector.

3.6. Data Collection

Data collection is a crucial aspect of research, involving the systematic gathering and analysis of information to address specific research questions and evaluate results (Kabir, 2016). In this research, the focus was on obtaining high-quality evidence to provide a comprehensive understanding of how technological change affects precarious work in the South African retail sector. To achieve this, a combination of structured and semi-structured in-depth interviews was employed as the primary data collection method. In-depth interviews were chosen for this research due to their ability to provide detailed and nuanced insights into respondents' experiences and perceptions. This qualitative method is particularly effective for exploring subjective realities and obtaining rich, descriptive data (Creswell, 2016). The interviews were guided by an interview schedule (see Appendix 5, p. 160) that included open-ended questions, allowing for flexibility in responses and enabling the researcher to explore a wide range of topics related to the effects of technological change on workers' roles and job security.

The interviews were conducted on-site at retail locations, including Makro stores, Builders, Melbro Wholesale, and Pick n Pay, to ensure the relevance of the data collected to the specific context of the respondents. To accommodate respondents' schedules, interviews were arranged during work breaks or immediately after shifts, lasting approximately 30 to 45 minutes. This

timing was crucial for engaging workers in their natural work environment, ensuring that the data collected reflected their real-world experiences. The fieldwork involved interviewing SACCAWU members from various departments and positions within the selected retail establishments. This approach aimed to capture a broad spectrum of experiences, from cashiers and stock clerks to managers, providing insights into different levels of the workforce. The diversity in roles and departments was intended to offer a comprehensive view of how technological advancements are reshaping job conditions and contributing to job insecurity across various facets of the retail sector.

During the interviews, efforts were made to ensure that respondents fully understood the questions and concepts being explored. If respondents had difficulty comprehending certain aspects, the researcher provided clarifications to facilitate accurate and meaningful responses. This approach was essential for gathering reliable data that accurately reflects the effects of technological change on workers' experiences and job security. The combination of structured and semi-structured interview techniques allowed for a systematic collection of information while remaining open to new themes and insights that emerged during the discussions. This flexibility was instrumental in exploring the complex dynamics of technological change and its implications for precarious work. The data collection process for this research was meticulously designed to provide a detailed and contextualised understanding of technological effects on the retail workforce. Conducting in-depth interviews with SACCAWU members across multiple retail locations and departments, the research aimed to gather rich, descriptive data that would offer valuable insights into the changing nature of work in the South African retail sector.

3.7. Data analysis

Data analysis is a critical phase in research, aimed at organising, interpreting, and drawing meaningful insights from collected data. In this research, thematic analysis was employed to systematically examine the qualitative data obtained from interviews. Thematic analysis is a method used to identify, analyse, and report patterns or themes within qualitative data, providing a detailed and nuanced understanding of the research topic (Stemler, 2001). Thematic analysis involves several key stages. Initially, the raw data, including interview transcripts, was reviewed to gain a comprehensive understanding of the content. This process included familiarising oneself with the data through repeated readings to ensure that the researcher was well-acquainted with the material. The next step involved generating initial

codes by identifying significant features of the data that were relevant to the research questions. These codes were labels that captured key aspects of the data, helping to organise and structure the information for further analysis. Once coding was completed, the researcher proceeded to group these codes into broader themes. Themes are patterns in the data that represent significant aspects of the research questions. This stage required an iterative process of reviewing and refining themes to ensure they accurately reflected the data and were coherent and relevant to the research objectives. The themes were then analysed in relation to the research questions, allowing for an exploration of how technological change affects precarious work in the retail sector.

Manual coding was employed in this research to ensure a thorough and nuanced analysis of the data. This method involved systematically assigning codes to segments of text and organising these codes into categories. The use of manual coding facilitated a detailed examination of the data, allowing for the identification of recurring themes and patterns that were meaningful and relevant to the research's objectives (Kvale, 2006). The validity of the thematic analysis was dependent on the richness and depth of the data collected. High-quality data collection processes were crucial to ensure that the themes identified were grounded in the respondents' lived experiences and provided a comprehensive understanding of the research topic. The connection between data collection, analysis, and interpretation was integral to the research process, ensuring that the findings were robust and reflective of the actual experiences of the respondents.

The ultimate goal of data analysis in this research was to extract valuable insights and make sense of the raw data to address the research questions effectively. Identifying patterns and themes, the analysis aimed to provide a deeper understanding of how technological advancements are reshaping the nature of work and contributing to job insecurity in the retail sector. The thematic analysis enabled the researcher to draw connections between the respondent's experiences and the broader implications of technological change on precarious work. In a nutshell, the data analysis process involved a systematic approach to categorising and interpreting qualitative data. Through thematic analysis, the research aimed to uncover meaningful patterns and themes, providing a nuanced understanding of the effects of technological advancements on retail workers' roles and job security. The rigorous and methodical analysis ensured that the findings were grounded in the respondents' experiences and offered valuable insights into the changing nature of work in the South African retail sector.

3.7.1. Challenges in data collection

The data collection phase, conducted between late November and early December 2023, presented several notable challenges that impacted the research process. November and December are traditionally high-traffic periods for the retail sector due to increased holiday shopping. This seasonal surge in customer activity posed significant scheduling challenges, as workers were particularly busy and often found it difficult to allocate time for participation in interviews. Although the respondents expressed willingness to contribute to the research, their availability was severely constrained by their work commitments during this peak period. To address this, the researcher adopted a flexible approach, arranging interviews during work breaks or immediately after shifts to accommodate the respondents' schedules. Another challenge encountered was related to language and comprehension. Many workers in the retail sector, particularly those from diverse linguistic backgrounds, had limited educational qualifications, which complicated their understanding of the research questions. The original interview questions were designed in English, but some respondents faced difficulties due to language barriers. To address this issue, the researcher provided explanations to ensure that the questions were understood correctly. This proactive step was crucial in making the respondents comfortable and ensuring that their responses were accurate and relevant.

The geographical dispersion of the respondents across different areas of the eThekweni Municipality, including Springfield, Amanzimtoti, and Pinetown, posed logistical challenges. Coordinating interviews across these widely dispersed locations required substantial travel. To mitigate this, the researcher personally covered transportation costs, utilising personal resources to facilitate travel and ensure that data collection proceeded as planned. This financial outlay was necessary to maintain the research schedule and reach a diverse range of respondents. Due to time and resource constraints, the research was limited in scope to a select number of retail establishments, specifically Makro stores, Builders, Melbro Wholesale, and Pick and Pay. While this focus allowed for an in-depth exploration of the effects of technological change within these specific environments, it also meant that the research did not encompass the full spectrum of the retail sector. The limited coverage of retail stores was a strategic decision to manage the practical constraints of the research while still providing valuable insights into the effects of technological advancements on precarious work in the sector. In one word, the data collection process faced several challenges, including scheduling conflicts due to peak retail activity, language barriers affecting respondent comprehension,

logistical issues related to geographic dispersion, and scope limitations constrained by available resources. Despite these challenges, the researcher implemented various strategies to overcome these obstacles and ensure that the data collected was both comprehensive and relevant to the study's objectives.

3.8. Ethical considerations

Prior to commencing data collection, the research project received ethical approval from the School of Economics and Finance Ethics Committee, which is part of the University Human Research Ethics Committee (non-medical) (see Appendix 1, pg. 154). This approval confirmed that the research adhered to established ethical standards, ensuring that the research design and procedures were ethically sound. Additionally, a gatekeeper letter from the South African Commercial Catering and Allied Workers Union (SACCAWU) in KwaZulu-Natal was obtained, authorising the researcher to engage with and interview its members at Makro stores, Builders, Melbro Wholesale, and Pick and Pay (see Appendix 2, pg. 155). This letter was essential for gaining access to the target population and demonstrating that the research had the support and consent of the relevant organisational authorities.

Respondents were provided with comprehensive information about the research through an information sheet and a consent form (see Appendices 3 and 4, pg. 156 and 158). The information sheet explained the purpose of the research, the procedures involved, and the potential risks and benefits of participation. It also outlined the respondents' rights, including their right to withdraw from the research at any time without facing any negative consequences. The consent form required respondents to sign and return it as a formal agreement to participate in the research. This process ensured that participation was voluntary and based on a full understanding of what the research entailed.

To safeguard the privacy of respondents, their real names were replaced with pseudonyms. This practice was crucial in protecting their identities and ensuring that their responses could not be linked to specific individuals. Anonymising the data, the research adhered to principles of confidentiality, reducing the risk of any potential repercussions for respondents. Furthermore, consent was obtained from all respondents for recording interviews. The recordings were used solely for the purpose of data analysis and were securely stored to prevent unauthorised access. This measure ensured that respondents' contributions were protected and that their privacy was maintained throughout the research process.

The research design incorporated strategies to minimise any potential risks to respondents. The researcher was committed to addressing any concerns raised by respondents and providing a respectful and supportive environment throughout the data collection process. The aim was to uphold the integrity of the research while ensuring that respondents felt comfortable and secure during their participation. Adhering to ethical principles and maintaining transparency about the research process, the research aimed to uphold high standards of credibility and integrity. Hence, the research adhered to rigorous ethical standards by securing appropriate approvals, ensuring informed consent, protecting confidentiality and anonymity, and minimising potential risks to respondents. These practices were fundamental in conducting a responsible and ethical research, contributing to the credibility and trustworthiness of the research findings.

3.9. Conclusion

This chapter has detailed the research methodology and methods employed to explore the effects of technological change on precarious work within South Africa's retail sector. It described the research design, theoretical framework, sampling strategies, data collection techniques, and analysis processes utilised in the research. A qualitative approach was selected to provide a nuanced understanding of the experiences of retail workers affected by technological advancements. This approach allowed for a comprehensive examination of how technology influences working conditions and job security from the perspectives of those directly affected. The research utilised the interpretive paradigm to explore respondents' subjective experiences and the social factors influencing their realities. This framework enabled an analysis of how technological innovations are transforming labour relations and contributing to precarious work, based on firsthand accounts from SACCAWU members employed in various retail environments across eThekweni Municipality.

Non-probability sampling techniques, including purposive and snowball sampling, were employed to identify respondents who met specific criteria relevant to the research aims. Purposive sampling targeted individuals with pertinent experiences, while snowball sampling broadened the respondent pool through referrals, enhancing the diversity and depth of the data. Structured and semi-structured interviews were conducted with twenty SACCAWU members at different retail locations. Despite encountering challenges such as busy work periods, language barriers, and logistical issues, the research was adapted to accommodate respondents' schedules and circumstances. The interviews yielded valuable insights into the effects of technological change on workers' roles and job security, enriching the understanding of work

conditions in this context. Thematic analysis was used to process and interpret the data, identifying recurring patterns and themes. This method provided a detailed examination of the data, uncovering significant insights related to the research questions. The aim was to derive meaningful information and offer a thorough understanding of how technological change affects precarious work.

Ethical considerations were rigorously followed throughout the research process. Necessary approvals were obtained from ethics committees, and informed consent was secured from all respondents. The researcher ensured confidentiality, privacy, and respect for respondents, adhering to ethical standards in all phases of data collection and analysis. Overall, this chapter presents a methodologically sound approach to studying the effects of technological change on precarious work in the South African retail sector. The qualitative design, interpretive framework, and rigorous data collection and analysis methods provided valuable insights into the challenges faced by workers. These findings contribute to a deeper understanding of work conditions in the context of technological change and offer implications for both academic research and practical applications within the retail sector. The following chapter will present and discuss the findings, providing an in-depth analysis of how technological advancements are reshaping labour relations and contributing to increased precariousness in the retail sector.

CHAPTER 4: DATA PRESENTATION AND DISCUSSION

4.1. Introduction

The research aimed to explore the effects of technological change on the changing nature of precarious work in the South African retail sector, with specific reference to SACCAWU, a trade union representing retail, distribution, and hospitality workers in South Africa. Due to limited resources and time, the research took place in eThekweni Municipality, KwaZulu-Natal province, and only members of SACCAWU worked at Makro stores, Builders, Melbro Wholesale, and Pick and Pay were interviewed to help us understand the effects of technological change on the nature of precarious work in the retail sector. The objective of the research was to explore the broader implications of technological change on the nature of work, with a focus on how advanced technologies are shaping work relations and intensifying precarious conditions in the retail sector.

Nearly every sector in the world has been directly affected by technological change, and the retail sector is no exception. Technological innovations are seen to change power relations between employers and workers in the world of work, and this has perpetuated the long-standing precarious work relationships that have affected workers who are performing manual, routine, and repetitive work. The technological advancements of the 4IR have caused considerable uncertainty and anxiety among workers, with many concerned that these changes might significantly disrupt or even eliminate a substantial number of jobs. Marx (1887) addressed this issue in his analysis of production technologies and class struggle. He conceptualised machines as tools of capitalists that could substitute for human labour in the industrial era, thereby reducing the labour time necessary to produce goods. Marx (1887) argued that the introduction of advanced machinery by capitalists typically results in the direct replacement of human labour.

Stanford (2020) argues that technology's tectonic force is reshaping the workplace in a profoundly dramatic way. As technology advances, there will be job creation as well as job destruction due to automation, artificial intelligence, and other technological innovations (Stanford, 2020). There are many different points of view among scholars in the discussion around the 4IR and its possible effects on the economy and society. Optimists argue that 4IR enhances efficiency, productivity, and quality of life by driving global connectivity and creating new job opportunities (Schwab, 2016, Brynjolfsson and McAfee, 2014). However, critics like

Arntz, Gregory, and Zierahn (2017) highlight potential downsides, such as job displacement and increased income inequality, with automation threatening routine jobs and technological capital concentrating wealth. Building on the above, it may be argued that automation and digital technologies can lead to job displacement and a shift towards more precarious forms of work. As certain tasks become automated, workers may face job insecurity and the need to adapt to new roles or skill sets, often at a lower bargaining power. Standing (2011) also notes that technological change, including automation and digitalisation, has led to a restructuring of labour markets. Many traditional jobs have been replaced or transformed by new technologies, often resulting in less stable and more precarious forms of employment. Workers in the precariat face job insecurity, irregular hours, and low wages. These perspectives underscore the multifaceted and dual nature of the impacts associated with the 4IR. Consequently, discourse surrounding 4IR necessitates proactive measures to mitigate adverse effects and ensure that technological advancements foster a more equitable and sustainable future. A primary concern within the retail sector is the effect of 4IR on unskilled labour. As 4IR technologies become increasingly adept at performing routine and repetitive tasks, there is considerable anxiety among workers and trade unions regarding the potential displacement of monotonous job roles.

This chapter reports on the research results and discussions that have been derived from the questionnaire schedule from the twenty (20) research respondents who were interviewed towards the end of November to mid-December 2023. The respondents were thus included in the research because of their insights on technological innovations and their effects on the changing nature of precarious work in the retail sector. The data were collected, compiled, and analysed through means of thematic analysis. The initial phase of this research encompassed the literature review. It involved reviewing and analysing secondary data through various sources, and primary data were collected through the questionnaire schedule. This data was transcribed, translated, cleaned, and coded. To ensure respondents' anonymity, pseudonyms were used instead of real names. This protects respondents' privacy and maintains confidentiality while allowing for meaningful analysis of their responses. (see pg. 79, Gender and pseudonyms of respondents). The research used pseudonyms for respondents when directly quoting their responses.

4.1.1. Brief History of South African Commercial, Catering, and Allied Workers Union

Founded in 1975, SACCAWU was initially known as the Commercial Catering and Allied Workers Union of South Africa (CCAWUSA). This formation was driven by the need to

address the inadequate representation and poor working conditions faced by workers in the commercial, catering, and allied sectors (SAHO, 2019). The trade union was a product of the broader anti-apartheid struggle and aimed to create a more equitable and just workplace environment. During the apartheid era, SACCAWU was a prominent force in the struggle against racial segregation and economic exploitation. It actively challenged discriminatory practices and harsh working conditions that its members were facing, many of whom were subjected to systemic injustices under the apartheid regime. SACCAWU's involvement in strikes and industrial actions was crucial in advancing for better wages and working conditions. SACCAWU's affiliation with the Congress of South African Trade Unions (COSATU), established in 1985, provided it with substantial support and a platform to influence national labour policies and collective bargaining. COSATU's founding principles and strong support for workers' rights reinforced SACCAWU's mission and extended its reach within the labour movement.

SACCAWU was formed through the merger of three smaller unions which include the Hotel and Restaurant Workers Union (HARWU), the Retail and Allied Workers Union (RAWU), and the Cape Liquor and Catering Workers Union (CLCWU), formerly known as the Cape Liquor and Catering Trade Employees' Union. CCAWUSA faced ideological divisions, with one faction supporting the African National Congress. In 1990, COSATU mediated a resolution to these conflicts, leading to the merger with HARWU. Following this, the union was renamed the South African Commercial, Catering, and Allied Workers' Union. This merger was driven by COSATU's principle of One Industry, One Union, One Country, One Federation, aimed at strengthening the trade union's bargaining power and consolidating worker representation in the commercial and catering sectors (SAHO, 2019). SACCAWU is affiliated with two Global Union Federations (GUFs), the International Union of Food, Agriculture, Hotel, Restaurant, Catering, Tobacco, and Allied Workers' Associations (IUF) and Union Network International (UNI). These affiliations enable SACCAWU to engage in international solidarity initiatives and benefit from global labour movement resources and support. On a national level, SACCAWU has established localised versions of National Shop Stewards Councils to enhance grassroots leadership and support democratic decision-making (SAHO, 2019).

Since its inception, SACCAWU has been a proactive defender of workers' rights, focusing on gender equality, and family rights, and combating discrimination and exploitation. The trade union's mission is to build a fair, non-racial, and non-sexist society, and to challenge the capitalist system in favour of a classless society. SACCAWU has worked towards effective

collective bargaining, democratising work processes, and ensuring efficient member services (Taal, 2012). Its campaign has led to significant improvements in working conditions and wages, demonstrating its critical role in the labour movement. With the transition to democracy in 1994, SACCAWU continued its mission to address economic inequalities and labour injustices in the new political context. It played a significant role in influencing labour policies and legislation to ensure fair treatment and protection for workers in the commercial and allied sectors. SACCAWU's post-apartheid efforts focused on adapting to the new democratic landscape while continuing to address longstanding labour issues. It has faced challenges related to wage disputes and retrenchments, particularly during retail sector restructuring. In 2009, SACCAWU organised a major strike against Massmart/Walmart over contentious wage negotiations and job security issues. Despite significant opposition, SACCAWU used industrial action, negotiation, and legal interventions to protect its members' rights (Taal, 2012). This strike highlighted the trade union's determination and strategic approach to defending workers' interests.

In 2023, SACCAWU achieved a major milestone with a multiyear wage agreement resolving the Makro and SACCAWU strike, which lasted over a year. This agreement, covering fiscal years 2022–2023, 2023–2024, and 2024–2025, was a significant victory for the trade union and its members. Moreover, SACCAWU has addressed technological advancements in the retail sector, such as opposing self-service machines at Pick and Pay. The union has focused on negotiating better working conditions, providing education and training, and adapting to changing labour market dynamics (Taal, 2012). Since its establishment in 1987, SACCAWU initially saw significant growth in membership due to its effective representation and strategic mergers with smaller trade unions, enhancing its influence and bargaining power (SAHO, 2019). Technological advancements, particularly automation, have notably impacted SACCAWU's membership levels. Automation in the retail and catering sectors has led to job displacement, reducing traditional membership numbers (Kraak, 2016). In response to these challenges, SACCAWU has adapted by organising workers in emerging technology-driven sectors and utilising digital tools to enhance engagement and manage its operations effectively (SAHO, 2019).

Recent trends, including gig work and non-standard employment, have further challenged traditional membership models. SACCAWU has responded by demanding for better working conditions and expanding its reach into new sectors to address these changing employment contexts (Kraak, 2016). Today, SACCAWU continues to address precarity in the retail sector

caused by technological change, neoliberal policies, globalisation, and shifting power dynamics. The trade union is dedicated to enhancing worker organisation, negotiating improved living and working conditions, and developing strategies to cope with new challenges in the labour market. Through its ongoing efforts, SACCAWU aims to reinforce its role as a leading defender of workers' rights and foster a more just and equitable working environment (Taal, 2012).

4.1.2. Profile of South African retail sector

Aspect	Details
Market size	Expected to grow at a CAGR of 3.7% from 2024 to 2030.
Growth rate	Rose by 4.1% in June 2024 compared to the previous year.
Key segments	Food and beverages, clothing, electronics, home goods.
Employment	The sector employs over 20% of the South African workforce.
Technology integration	Rising e-commerce, automation, AI, and AR.
Consumer trends	Online shopping and sustainable products.
Challenges	Economic instability and competition from international brands
Trade unions	SACCAWU, other unions like NUMSA (National Union of Metalworkers of South Africa) and FAWU (Food and Allied Workers Union).
Industry structure	Major chains (e.g., Shoprite Holdings, Pick n Pay, Woolworths Holdings, Massmart) and small enterprises.
Regulatory framework	Basic Conditions of Employment Act, Labour Relations Act, National Credit Act. (BCEA, LRA, NCA)
Legislation	Employment Equity Act, Consumer Protection Act, OHSA.

Sources: South Africa Retail Industry Market (2024-2030), South Africa Retail Sales YoY (2024), and Taylor (2024).

4.2. Respondent demographic profiles

This section outlines the diverse demographic profiles of the respondents, including their age, gender, marital status, race, employment history, education, and departmental roles. The respondents ranged from 21 to 65 years old and included individuals of all genders and marital statuses. Racial diversity was represented by black, white, and Indian individuals. Their employment histories varied from extensive experience to recent hires, and their educational

backgrounds ranged from N5, matric to higher degrees. The respondents worked across different departments such as management, front-end operations, and online shopping, providing a comprehensive view of the effects of technological changes on various aspects of retail work. The demographic profiles of the respondents provided a rich, varied context for analysing the effects of technological change on precarious work.

4.2.1. Age of respondents

In a study of 20 SACCAWU members employed at Makro, Builders, Melbro Wholesale, and Pick and Pay in eThekweni Municipality, KwaZulu-Natal, the age distribution of respondents was as follows, 2 participants were in the 21 to 30-year age group, representing the younger segment of the workforce. The largest proportion, comprising 13 respondents, was within the 31 to 40-year age range, indicating a significant presence of mid-career professionals. In addition, 5 respondents were between 41 and 50 years old, reflecting the involvement of more experienced workers. This distribution highlights the generational diversity of the workforce affected by technological change within the retail sector.

Figure 1. The age range of respondents, 2023

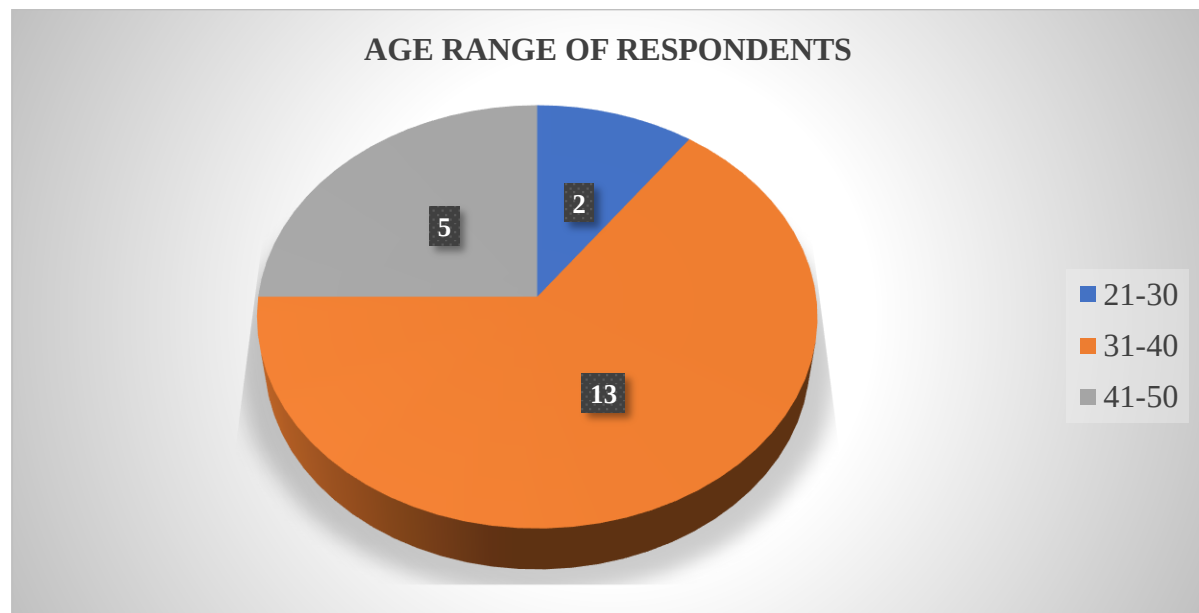


Figure 1 illustrates that among the twenty respondents, thirteen are aged between 31 and 40 years, five are between 41 and 50 years, and two are aged 21 to 30 years. The data suggests that younger individuals, specifically those between 20 and 40 years old, are predominant in the retail sector according to the study sample. However, it has been observed that younger workers often show reluctance to engage in trade union activities, presenting a challenge for

unions operating in this sector. To effectively recruit and engage the next generation of members, trade unions need to develop targeted strategies. The age distribution indicates that workers in the 31 to 40 age range are significantly more involved in trade unions compared to their younger counterparts.

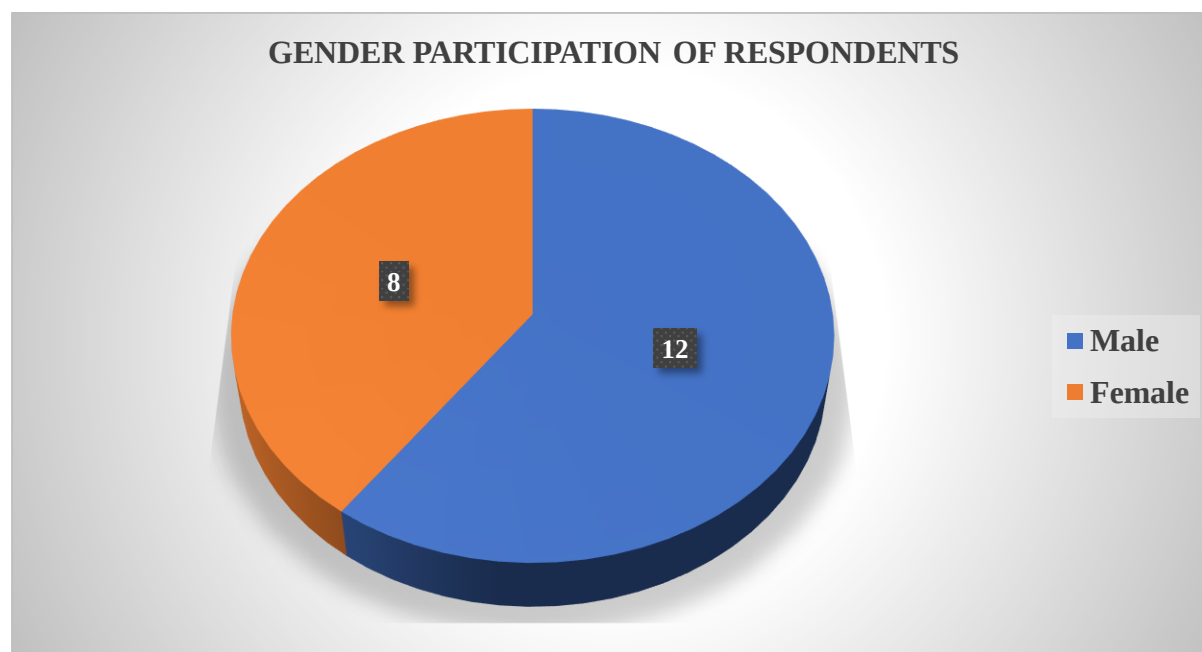
If trade unions fail to change these trends, unionisation rates will decrease even more as unionised workers retire and are replaced by younger workers. The fragmentation of the workforce, fear of retaliation, low awareness, and education are some of the barriers that hinder young workers to unionise. It would take coordinated efforts to increase labour rights awareness, educate young workers about the advantages of unionisation, address concerns about job security, and strengthen union presence and representation within the sector to address these barriers to unionisation among young workers in the South African retail sector. Moreover, initiatives to support accessible and inclusive trade union structures that address the concerns and needs of young workers may contribute to a rise in the percentage of this group of workers joining unions.

4.2.2. Gender and pseudonyms of respondents

Gender and pseudonyms of respondents	
Male	Female
Thabo	Naledi
Sipho	Zanele
Kagiso	Lebo
Themba	Bongi
Mpho	Ayanda
Sibusiso	Sibusisiwe
Dineo	Lerato
Tshepo	Palesa
Kabelo	
Andile	
Naidoo	
Khumalo	

The demographic profile revealed that, of the twenty respondents, twelve were male and eight were female, reflecting the gender distribution among the respondents. Furthermore, the research employed pseudonyms to ensure confidentiality and protect the respondents' identities. The following table shows the pseudonyms used in the analysis.

Figure 2. Gender participation of respondents, 2023



It was expected that most respondents would be women because the retail sector remains one of South Africa's greatest employers of women, providing a source of both livelihood and income for many families and dependents. However, figure 2 above shows that twelve (12) of the sample studied were males and eight (8) were females. Even though the number of those interviewed was dominated by males still retail sector in South Africa is dominated by African females and young. As said by respondents, though females are traditionally well-represented, gender gaps still exist in some areas, especially in leadership roles within the South African retail sector. To solve this problem and build a more inclusive retail sector, there is a need for ongoing initiatives to advance gender equality and empower females in the workplace.

4.2.3. Marital status

The demographic profile revealed that in terms of marital status, sixteen (16), and four (4) out of twenty (20) respondents were single and married respectively. This distribution offers insight into how different marital statuses might influence the experiences and perceptions of workers regarding technological change and job security. The predominance of single respondents

could suggest varying impacts on personal and professional life compared to those who are married, potentially reflecting differences in support systems, financial responsibilities, and job stability concerns. This demographic detail is crucial for understanding the broader context of how technological advancements affect workers with different personal circumstances.

Figure 3. Marital status of respondents, 2023

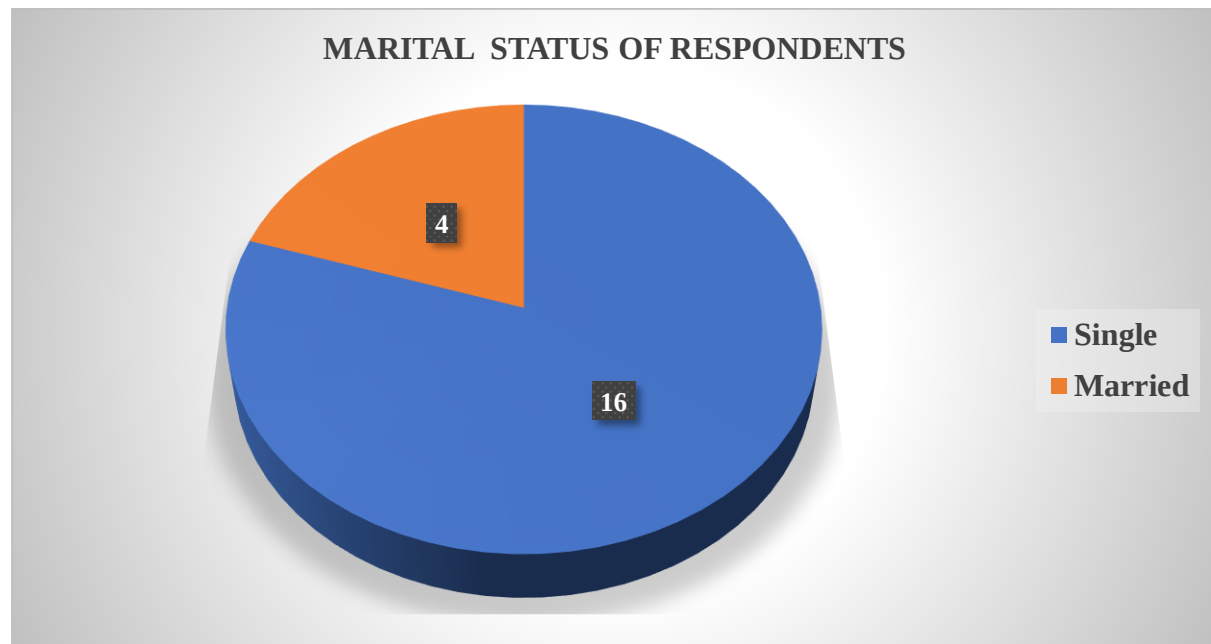


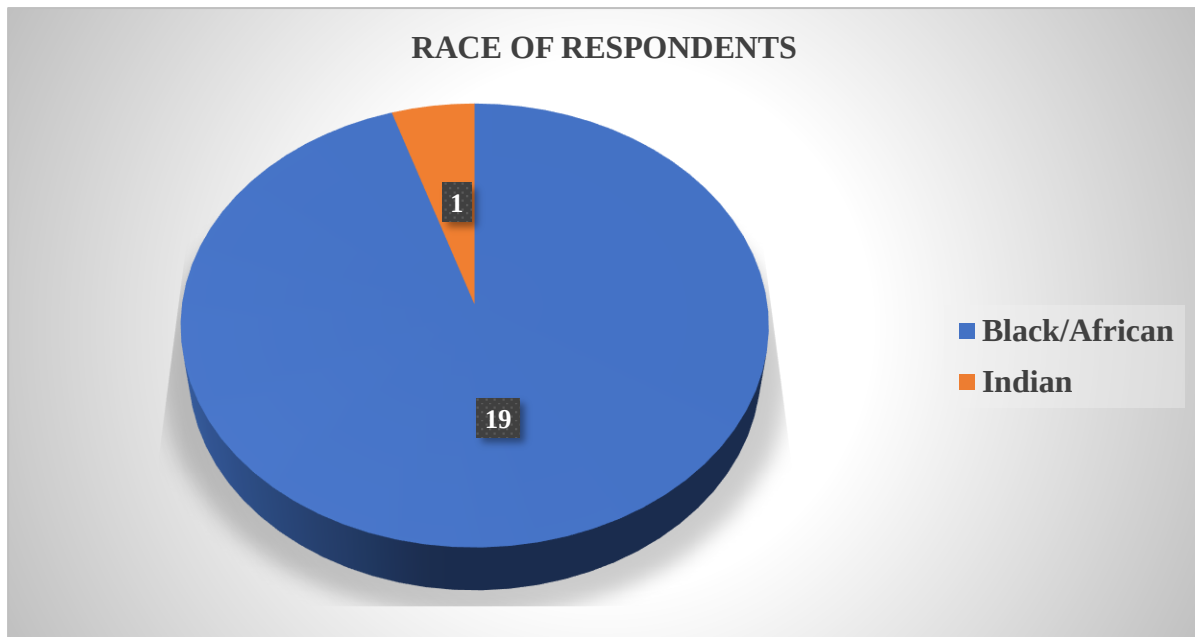
Figure 3 above shows the percentage of marital status of respondents, sixteen (16) of the participants were single, and only four (4) of the participants were married. This implies that single status was the most common group among the respondents, who were mostly not married. On the other hand, the number of married respondents was lower than that of single respondents.

4.2.4. Race of respondents

The demographic profile of the respondents reveals a predominance of Black African workers, with nineteen (19) out of twenty respondents identifying as such, while one (1) respondent was Indian. This representation highlights a significant concentration of Black African individuals within the research sample, reflecting their major presence in the retail sector and within the SACCAWU membership in the eThekweni Municipality. The limited racial diversity, with only one Indian respondent, indicates that the research's findings may be particularly reflective of the experiences and challenges faced by Black African workers in the context of technological change. This racial composition is important for contextualising the research findings, as it

highlights the specific socio-economic issues and adaptations unique to Black African workers. The focus on this predominant group allows for a deeper understanding of how technological advancements affect their job security and working conditions. However, the lack of broader racial diversity in the sample suggests that the findings may not fully represent the experiences of workers from other racial backgrounds within the retail sector.

Figure 4. Race of respondents, 2023



The research project expected to interview black/African, white, Indian, and Coloured workers who are working in the retail sector, however, as Figure 4 above indicates, nineteen (19) respondents who participated in the study were black/African, and one (1) Indian. This is a clear indication that the retail sector is a black African-dominated sector. It was said by the respondents that, even if there has been progress, there are still differences in the workforce's representation in the retail sector. While white South Africans may have a disproportionate number of senior and executive roles, black South Africans continue to be overrepresented in lower-paying frontline employment.

4.2.5. Work experiences of respondents

The demographic profile reveals that the respondents bring a wealth of experience to the research, with a significant range of tenure within the retail sector. Out of the twenty respondents, five (5) have 6 to 10 years of experience, nine (9) have 11 to 15 years, and six (6) have 16 to 20 years. This diverse experience level among respondents indicates a well-rounded

representation of seasoned workers who have navigated various industry shifts and technological advancements. The distribution of experience highlights a broad spectrum of expertise within the sample, from those who have relatively recent experience to those with nearly two decades of industry experience. This range is particularly valuable for understanding how different lengths of experience influence workers' perceptions and adaptations to technological change. Workers with longer tenures are likely to provide insights into long-term trends and shifts, while those with more recent experience may offer perspectives on current technological impacts. The extensive experience of the respondents enriches the research by offering a comprehensive view of how technological developments are reshaping roles and job security within the retail sector.

Figure 5. Work experiences of respondents, 2023

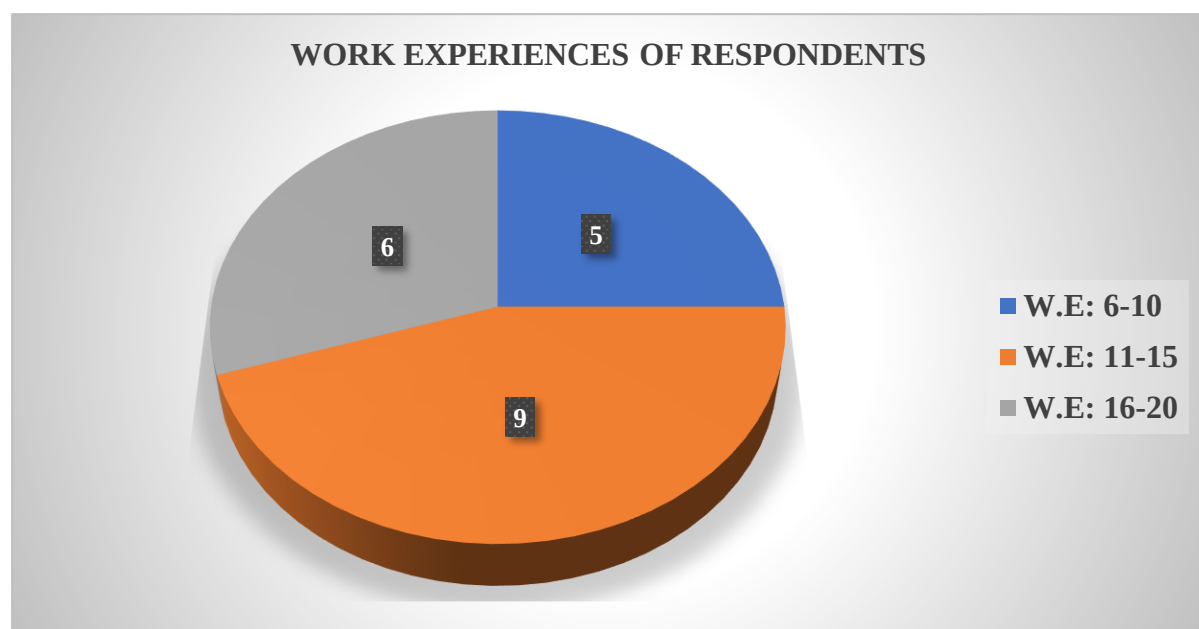


Figure 5 above shows the experiences of respondents in the retail sector, and it indicates that workers have enormous work experience. Nine (9) of the respondents have work experiences between 11-15, followed by Six (6) having 16-20 work experiences, and Five (5) having 6-10 work experiences in the sector.

4.2.6. Educational status of respondents

The demographic profile shows a varied educational background among the respondents, reflecting a range of qualifications that contribute to a diverse set of perspectives on technological change in the retail sector. Out of the twenty participants, thirteen (13) have

completed their matriculation, representing the largest group within the sample. This indicates a substantial number of respondents with foundational secondary education. Four (4) participants hold diplomas, suggesting a significant level of specialised training or vocational education. Furthermore, two (2) respondents have obtained degrees, reflecting a higher level of formal academic achievement. One (1) respondent has pursued N5 Mechanical Engineering, highlighting a technical qualification that could provide unique insights into the application of technology and its impacts from a more specialised technical perspective. This educational diversity enriches the research by including a broad spectrum of knowledge and expertise. The range of educational qualifications among respondents ensures that the research captures various viewpoints on how technological advancements are influencing labour conditions and job security, from basic educational backgrounds to more specialised technical training.

Figure 6. Educational status of respondents, 2023

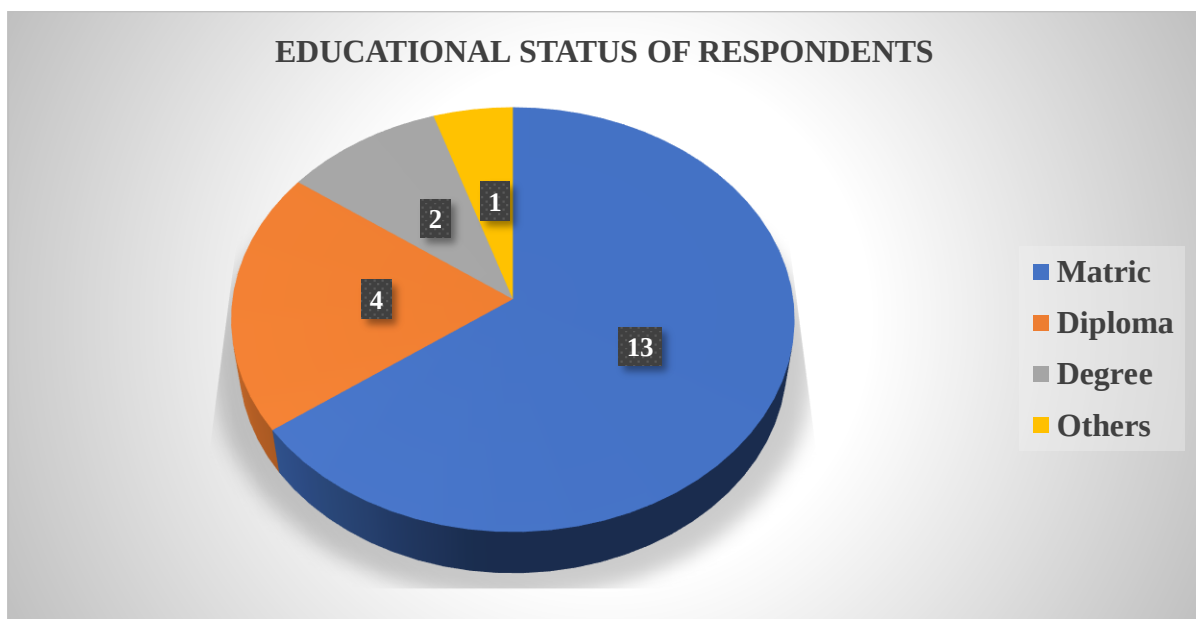


Figure 6 above shows that most workers in the retail sector are matriculated. Thirteen (13) of the sample studied had matric certificates, four (4) had diplomas, two (2) had degrees, and One (1) with N5 vocational certificate.

4.2.7. Department

The twenty respondents interviewed for the research are employed across a diverse range of departments, including Receiving, Human Resources, Front-End, Liquor, General Merchandise, Food Development, and Sales. This departmental variety provided a comprehensive overview of the effects of technological change across different facets of the

retail sector. The research aimed to explore how technological change affects these positions, specifically examining whether the integration of new technologies could potentially replace routine, repetitive, and manual labour or if it might generate new job opportunities requiring different skill sets. The research also explored the nature of employment contracts within these departments, noting that workers are employed under both permanent and flexible contracts. It was observed that while some workers hold permanent positions, others are employed on non-permanent contracts, often facing low wages and inadequate social security benefits. This highlights the varying degrees of job security and compensation among workers within these departments, providing context for understanding the broader implications of technological change in the retail sector.

4.3. Technological change, nature of work, precarious work, and labour relations

Changes in technology have an impact on more than just employment, productivity, and income inequality. The technological change brought about by advancements in 4IR has changed the nature of work. Several studies conducted by Schwab (2016), Jose (1999), Hlatshwayo (2014), (2017), Hlatshwayo and Buhlungu (2017), and Ndzendze and Marwala, (2022) have demonstrated how different new technologies have changed how work is done, the roles that workers play in the division of labour inside an organisation, and how these evolving roles change how organisations are structured. New trends at the individual and organisational levels have arisen as the nature of the work environment keeps changing. This section focuses on the ways in which technological change affects and changes the nature of precarious work. It covers the following topics: (1) nature of work and technological change (2) what precarious work is, (3) what precarious work is like in South Africa's retail industry, (4) how technological change influence and change precarious work, and (5) labour relations, (6) How technological change influence and change labour relations in the retail sector.

4.3.1. Nature of work and technological change

Technological change has profoundly transformed the nature of work across various sectors, with significant impacts on job roles, work practices, and labour market dynamics. Understanding this transformation requires examining how technology reshapes work processes, affects employment patterns, and influences workers' experiences. Automation is one of the most prominent examples, as robots and AI systems increasingly take over tasks that were once performed by humans. This shift has led to the displacement of jobs, for instance,

automated checkout systems and inventory management robots have streamlined operations but reduced the demand for traditional cashier and stock clerk roles (Bessen, 2019). Even skilled professions, such as those in finance and healthcare, are not immune, AI assists with data analysis and diagnostics, transforming job scopes and potentially reducing the need for certain human roles (Brynjolfsson and McAfee, 2014). Automation, AI, and digital technologies have revolutionised work processes, increasing efficiency and productivity by automating routine tasks and introducing new tools for decision-making. This shift often leads to the restructuring of job roles, emphasising complex and creative tasks while reducing the need for manual labour. Advancements in technology have also enhanced work flexibility. The rise of remote work, facilitated by improved communication tools, has fundamentally altered traditional office environments, impacted work-life balance, and allowed workers to manage their schedules more autonomously (Choudhury, Foroughi, and Larson, 2021).

Simultaneously, the gig economy, driven by digital platforms like Uber and Upwork, has enabled workers to engage in short-term, flexible jobs, shifting away from conventional full-time employment. The rise of technology also influences employment patterns, notably through the growth of flexible and gig work facilitated by digital platforms. While this offers increased flexibility, it often results in decreased job security and benefits. This flexibility creates new opportunities but also raises concerns about job stability and benefits (De Stefano, 2016). As technology continues to evolve, there is an increasing need for continuous learning and upskilling. Workers must stay updated with new tools and methodologies to remain relevant, leading to a heightened emphasis on digital literacy across job sectors. This shift has made tech-focused training a crucial component of modern education systems (Frey and Osborne, 2017). The labour market dynamics have been affected as well, with remote work and globalisation intensifying job competition and contributing to widening wage disparities. Tech-savvy workers often command higher salaries compared to those in less technologically advanced roles, leading to job polarisation. This polarisation, where high-skill, high-wage jobs increase while middle-skill jobs decline, exacerbates income inequality (Autor, 2015, Goos, Manning, and Salomons, 2014).

4.3.2. Defining precarious work

Even though studies on precarious work are increasing, most of them do not provide a precise definition of precarious work. Precarious work is broadly defined as an employment situation where there is a lack of job security that impacts several aspects of the job, including the

contract period, labour rights, wages, and the working relationship (Cortés and Alló, 2020). In the retail industry as well as many other areas of the economy, precarious work has been more prevalent in recent years, and factors including job insecurity, inadequate income, and lack of rights and protection have gotten worse.

This section reports on the definition of precarious work based on the responses that the respondents provided. As explained above, the concept of precarious work does not have a legal definition, but the respondents defined it as a kind of work that is poorly paid, unprotected, unstable, and insecure. Based on the interview data, precarious work in the retail sector was defined by respondents as follows:

- Poorly paid, unprotected, and insecure work in which remuneration and working hours are inferior to regular work,
- Part-time, and casual employment that lack stability, security, and job protection with working conditions that are unpredictable, insecure, unregulated, and often lack consistent occupational identity,
- Non-standard or temporary employment which cannot help workers to support their household needs,
- The work environment in which social protection and labour rights are lacking.

Building on a respondent's response, it was stated that precarious work is taking over as the primary way of working in the retail sector, and it is referred to as an:

employment that lacks stability, security, and job protection which makes difficult for workers to plan for a better future, for example temporary or contract work (Naidoo).

The rise in the number of unprotected workers is attributed to a variety of causes which include global competition, technological change, economic factors, and changes to the way businesses are structured. However, this research project's focus is to explore the effects of technological change on the changing nature of precarious work. Technology pervades our daily lives, and it creates new job prospects, but also new traps that keep the most vulnerable workers in precarious conditions. Standing (2011) claims that the shift away from traditional employment, which consists of permanent jobs with negotiated pay, pension funds, and other benefits, is the main cause of the rise in precarious work. Such workers lack representation, income security, job security, skill reproduction security, and job security. Even though some authors have been critical of Standing's (2011) conceptualisation of precarious work, there is general agreement

that workers who have precarious work, poor pay, unstable working conditions, and no benefits like pension funds are growing significance on a global scale. Precarious work is rapidly taking over in South Africa's public and private sectors, raising the possibility that this is the way labour will always be done in the future (Hlatshwayo, 2019).

Technological advancements are reshaping employment relations, particularly in the retail sector, leading to increased precarious work. Cortés and Alló (2020) describe precarious work as involving job insecurity, poor pay, and limited labour rights. In the retail sector, technological change has led to a rise in part-time, temporary, and contract work, characterised by low wages, unstable working conditions, and inadequate job protection. According to Standing (2011), the shift from traditional, permanent jobs to precarious work is driven by technological innovations and global competition. This transformation has reconfigured employment relations by increasing job insecurity, reducing wages, diminishing workplace protections, and altering skill requirements. Hlatshwayo (2019) highlights that precarious work is becoming increasingly prevalent in South Africa, suggesting that this trend may persist into the future.

4.3.3. Nature of precarious work in the retail sector in South Africa

When it comes to the nature of precarious work, the respondents were of the view that in the retail sector, the nature of precarious work is characterised by both permanent employment and non-permanent which consists of temporary employment, low wages, and limited access to benefits with no formal contract. This was acknowledged by the respondents from Makro stores, Builders, Melbro Wholesale, and Pick and Pay who said that there are permanent and non-permanent workers in the retail sector.

At Makro stores, as said by one of the respondents, workers who have permanent contracts are classified into three (3) categories namely category 1 (traditional contract), category 2 (flexible contract based on extra weekend), and category 3 (flexible contract based on hourly paid). The first two (2) offer basic salary, commission, and benefits, but workers who have category 3 contracts are paid hourly and have commission and benefits despite being permanent. They have two (2) job descriptions. For instance, a worker can be employed as a driver under Category 3 and may be required to perform additional tasks if there are no driving activities at a given time. Furthermore, Makro employs non-permanent workers who are casual and paid hourly without benefits and commission, and such workers are under a labour broker called a retail solution agent. According to one of the respondents:

some workers are not protected because the nature of the work they do is insecure and casual, and many of them are getting jobs through labour brokering which exacerbates the exploitation of workers in the workplace (Thabo).

From the respondent's lived experiences, it was clear that precarious work is striving in the retail sector, and it is seen to be the leading factor that leads to the exploitation of workers because they are not getting a living wage that allows them to live a dignified and productive life. Among the respondents there was a consensus around the nature of precarious work in the retail sector which was said to be characterised by:

- Permanent employment
- Non-permanent employment (casual forms of work, part-time work, temporary work, contractual relation insecurity, short-term work).

It was said that these types of employment arrangements result in labour flexibility in the retail sector which leads to job, wage, and functional flexibility. At Builders, as it was said, some workers have 45-hour contracts, 40 hours fixed which constitute permanent contracts, and others 27 to 40-hour contracts which constitute non-permanent contracts which are seen to be precarious work. Regarding casual forms of work, it was said that casual workers are hired during busy periods so that businesses can meet the demand of the consumers but at the same time such workers are exploited in getting paid starving wages that cannot help them to support their household needs. Drawing from Mabasa (2017), It may be argued that South Africa's economic restructuring was successful in creating a two-tiered labour market in the wake of the post-apartheid era, with a small number of workers holding stable positions and a large number of vulnerable workers working in insecure jobs with little protection or rights.

Due to the rise in precarious work in the retail sector, workers are becoming disorganised and insecure. The workforce is now becoming more and more fragmented, as seen by the growing number of precarious workers who are executing multiple job descriptions, long, unpredictable working hours, nomadic workers without a regular place of employment, and complex employment relationships that change work process, terms, and conditions of employment. At Melbro Wholesale and Pick and Pay it was said that workers have different contracts of employment (both permanent and non-permanent). At Melbro wholesale, casual workers are only employed during busy times. It can be argued that such flexibility gives employers in the retail sector the power to change wages without constraint, and freedom to determine employment level.

These changes have been fuelled by economic factors, pressures of globalisation, technological change, and the subsequent adjustments to business organisational strategies that have directly affected non-permanent employment, which is characterised by casualisation, part-time employment, and temporary employment of working conditions which are unpredictable, insecure, unregulated, and often lack consistent occupational identity. Marx (1887) was of the view that technology can be used to divide the working class by producing different sorts of jobs, some of which are more highly skilled and higher paid, and others which are less skilled and lower paid. This can cause splits within the working class, making it more difficult for them to unite and fight the ruling class. Marx's (1887) analysis of technology in his 1887 work focuses on its role in the capitalist system, highlighting its impact on the labour process, worker alienation, capital accumulation, and the contradictions inherent in capitalism. His insights into how technology interacts with economic and social structures continue to inform contemporary discussions about the implications of technological change in capitalist societies.

4.3.4. How technological change influences and changes the nature of precarious work

Respondents perceive automation as a significant threat in the retail sector, noting its potential to displace certain low-skilled jobs while also creating new employment opportunities. The introduction of new technologies may lead to job losses, particularly affecting unskilled workers. Given the highly competitive nature of the retail sector in South Africa, businesses are continually seeking ways to expand their market share and enhance customer loyalty. According to the Broll Report (2019), innovation is considered a crucial factor for survival and success in the rapidly changing retail landscape.

As the retail sector seeks to enhance customer experiences and gain a competitive edge, automation, particularly at the point-of-sale in supermarkets such as Makro, Checkers, and Pick and Pay, has introduced various improvements for consumers, albeit with varying levels of complexity. In response to these advancements, employers in the retail sector are increasingly turning to self-service machines, mobile tills, and similar technologies to reduce the number of workers in front-end departments, such as cashiers. At Makro stores, the implementation of mobile tills, green light technology, and online shopping has the potential to negatively impact jobs in front-end positions (cashiers), as well as in receiving and telesales departments.

The decrease in walk-in clients, largely due to the rise of online shopping (Teuteberg, 2020), has prompted retailers such as Builders, Melbro Wholesale, and Pick n Pay to scale back their physical storefronts. This response reflects the substantial effect that online shopping has had

on traditional brick-and-mortar retail. Consequently, retailers are restructuring their operations to enhance efficiency and control costs. In such cases, Section 189 of the Labour Relations Act 66 of 1995 requires employers to notify trade unions if they plan to lay off workers due to operational needs.

As a result, employers will need less floor space thanks to digital technologies such as digital payments, mobile tills, green light technology, online shopping, one chat application, and other technologies that are used in the retail sector. These technologies are costly, but the elimination of human labour will save costs and avoid the demands of organised labour, such as giving workers adequate social protection. If workers fail to adjust to the new technology-driven work environment, they may eventually find themselves jobless. Certain manual operations like the one that is done for instance in the receiving department to track and identify incoming goods are no longer necessary due to barcode scanners done by green light technology in different retail processes, including inventory management and checkout systems.

Drawing on the response of one of the respondents, he said that:

Some jobs and skills in the retail sector are becoming obsolete and redundant, such as those of cashiers, retail clerks, and shelf stockers. Meanwhile, other roles require workers to reskill and adapt their existing skills to keep pace with technological advancements, while some positions will demand entirely new skill sets. The rise of online shopping and self-service kiosks has reduced the need for in-store workers, as customers increasingly choose to browse and purchase items through digital platforms and automated systems (Sipho).

One could argue that low-skilled jobs in the retail sector may disappear because of automation, especially with the introduction of technology like automated inventory management, mobile tills, green light technology, online shopping, and self-checkout systems. This may have a big impact on employment levels, possibly leading to job displacement and raising unemployment rates, particularly for workers with low technical skill sets. It is crucial to remember that the effects of automation on the retail sector might differ based on several factors, including the rate at which technology is adopted, and the workforce's ability to adapt to changing skill requirements.

In South Africa's retail sector, technological advancements associated with the 4IR have significantly heightened precarious work conditions. Standing (2011) highlights that the shift towards gig and contract work, driven by technological change, has led to increased job

insecurity and a rise in temporary positions. This change has resulted in a workforce characterised by instability and a decrease in long-term employment opportunities. Automation and digital tools have also influenced wage dynamics. Barchiesi (2016) notes that these technologies contribute to wage reductions by fostering highly competitive job markets and creating variable pay structures. The introduction of advanced technology has intensified competition among workers, leading to downward pressure on wages and a shift away from traditional compensation models. Moreover, Webster (2017) observes that the rise in precarious work has eroded traditional employment benefits, such as health insurance. Workers increasingly lack essential protections due to weakened workplace safeguards and the growing prevalence of unstable employment arrangements.

Marx (1887) emphasises that the need for continuous skill development, driven by technological change, complicates job security, especially for those without adequate training. The ongoing evolution of technology requires workers to adapt continuously, making it more difficult to maintain stable employment. Furthermore, the expansion of digital and remote work has led to fragmented work environments and complex employment relationships. Both Barchiesi (2016) notes that this fragmentation further destabilises work conditions, contributing to a more uncertain and variable work landscape. These factors collectively underscore the growing challenges faced by workers in the increasingly technology-driven retail sector.

Scholars do, in fact, have differing views about how technological change would affect jobs, some are pessimistic, while others are optimistic. As Allen (2015) notes, technological advancements are expected to lead to the obsolescence and redundancy of many jobs. This transformation is anticipated to result in significant job destruction and force workers into increasingly precarious employment conditions (Allen, 2015). Similarly, Rotman (2013) argues that the accelerating pace of technological change will exacerbate these issues, further destabilising job security and contributing to a more precarious labour market (Rotman, 2013). Technology has improved customer satisfaction and efficiency, but it has also led to job obsolescence and redundancy. As employers in the retail sector continue to invest in various online platforms which are causing a change in the requirement for skills can lead to a decrease in traditional sales positions. Traditional jobs like manual picking and packaging may become redundant because of automation in supply chain operations, which includes warehouses and logistics. Continuous reskilling and upskilling initiatives are required to help current retail

workers adjust to the rapidly evolving technological environment to tackle the issue of job obsolescence. It was said that:

some employers in the retail sector are putting in place policies or programs that seek to assist workforce development, especially those who are in management and encourage a culture of lifelong learning (e.g., training programs). Some other workers are taking the initiative to upskill themselves to avoid job obsolescence and redundancy (Naledi).

Technological advancements in the retail sector, such as automated inventory management systems, self-checkout kiosks, and online retail platforms, have the potential to render certain occupations obsolete. Automation can eliminate manual, labour-intensive tasks, reducing the demand for traditional retail jobs. According to Braverman (1974), the introduction of machines into the workplace can deskill workers, transforming them into mere components of the production process. This phenomenon aligns with the principles of labour process theory, which emphasises how technology affects work organisation and workers' roles. As automation integrates into the retail sector, the nature of work changes significantly. Automation not only replaces certain tasks but also changes the skill requirements for remaining jobs. Workers may be required to operate and maintain complex systems rather than perform manual tasks, leading to a shift in skill sets but not necessarily an increase in overall job quality. Automation allows for more precise control and monitoring of workers, further reinforcing their reduced role in decision-making processes and emphasizing their functional integration into automated systems.

Marx (1887) and Smith (1776) as cited in Campbell, Skinner, and Todd (1976) both identified labour deskilling as the fundamental source of unfair technological development. Both Marx (1887) and Smith (1776) concluded that technological advancements have mostly resulted in deskilling by making the skills of many workers obsolete and redundant. Automation in the retail sector is a current case study of deskilling in action. Traditional manual tasks, such as stocking shelves and processing transactions, are increasingly replaced by automated systems like self-checkout kiosks and robotic inventory management. This reduction in the need for traditional skills leads to job displacement and requires workers to reskill to operate and manage new technologies. Traditionally labour-intensive jobs have had their work and procedures considerably transformed by technological advancements. In a nutshell, the introduction of technological innovations is seen by workers to have the potential to destroy

jobs unless workers reskill and adapt to operate in the ever-changing work environment. Even though automation can displace some jobs, it also creates new opportunities and changes the nature of work (Acemoglu and Restrepo, 2019).

Although technology is often blamed for job losses, Andrew (2014) and Babbage (1835) argue that it has also driven economic growth by creating new employment opportunities for those with advanced technological skills. Technology has facilitated the emergence of new industries and increased productivity. In the context of South Africa, Magwentshu and Rajagopaul (2019) project that by 2030, automation and digitisation could add 1.2 million jobs to the South African economy, provided that businesses act swiftly to capitalize on this potential.

A recent McKinsey analysis, cited by Magwentshu and Rajagopaul (2019), suggests that technological advancements could significantly boost South Africa's economic growth over the next decade, potentially more than doubling per capita income growth, quadrupling productivity growth, and increasing the real GDP growth rate by over a percentage point. Kuseni Dlamini, chairperson of Massmart and also quoted in Magwentshu and Rajagopaul (2019), argued that digitalisation could lead to job creation if employers in the retail sector assist workers in transitioning to new roles that demand different skills. To prepare the workforce for future demands, enhanced professional development and training initiatives will be crucial. Dlamini highlighted that technology should be seen as a catalyst for repurposing and reskilling workers, thereby improving their effectiveness.

Former national chairperson of the Makro Company Council, SACCAWU Joyfull Mnguni, cited in Teuteberg (2020), claims that technology advancements have created new skills that workers must begin to learn to maintain their jobs. While automation and mechanisation will eliminate certain jobs, they will also generate new employment opportunities. Technological developments in South Africa's retail sector have improved productivity, customer satisfaction, and business expansion, all of which have a favourable effect on the economy's overall progress.

The respondents said that technological change has reduced a lot of paperwork and made it easy to store information but at the same time according to them, it has put a lot of workers at risk of losing their jobs. Thus, technological change is seen as a double-edged sword when it comes to job creation and destruction. It has sparked the growth of new sectors and employment prospects, but automation has also eliminated many old jobs. Many researchers have tried to estimate how many jobs might be lost to automation in the near future, and on average, these

studies indicate that 57% of occupations would be in danger (Frey, Osborne, Holmes, Rahbari, Garlick, Friedlander, and Chalif, 2016).

The literature offers a nuanced perspective on automation and job losses that contrasts with the more pessimistic view. Arntz, Gregory, and Zierahn (2017) assert that the estimated risk of job displacement due to automation is substantially reduced when job adaptability and task diversity within occupations are considered. In addition, Acemoglu and Restrepo (2019) argue that while technological advancements have the potential to disrupt existing employment, they also facilitate the creation of new jobs, industries, and occupations. Consequently, this ongoing technological progress is likely to drive an increased demand for a diverse and skilled workforce.

Precarious work has emerged due to the changing economic environment, technological advancements, the weakening of trade unions, and changes in labour legislation. One of the respondents noted that technological change has impacted:

employment opportunities in the retail sector by making more workers retrenched due to automation and restructuring of the business. It has also led to the shift in skills requirements and compelled the upskilling and reskilling of workers so that they can remain relevant in the sector (Kabelo).

Technology enhances efficiency and productivity in the retail sector through several key innovations. Automation tools, such as self-checkout kiosks and robotic inventory systems, streamline operations by reducing manual labour and speeding up processes. Improved communication technologies, like cloud-based platforms, facilitate real-time coordination across store locations and corporate offices, ensuring smoother operations. Advanced data analytics provide insights into customer behaviours and demand patterns, optimising inventory management and marketing. Another respondent stated that

although the adoption of new technology may negatively impact workers' livelihood and working conditions, however, it has brought efficiency and the fastest ways of doing things or working in the retail sector; for an instance tools like video conferencing, instant messaging, email, and collaborative platforms, has improved communication (Zanele).

Technology plays a dual role in shaping class struggle, functioning both as a mechanism of exploitation and control for the ruling class and as a potential tool for empowerment and

resistance for the working class (Burawoy, 1979). As observed by respondents, the rapid evolution of automation and artificial intelligence in the retail sector underscores the urgent need for workers to acquire new technological and digital skills. Such skills are critical for maintaining employment in a labour market increasingly characterized by precarious conditions (Magwentshu and Rajagopaul, 2019).

Rotman (2013) has stated that as technology becomes more extensively used, the number of available jobs will continue to decrease, and businesses are going to find it more difficult to employ individuals or workers with obsolete skills in the age of automation because they lack the requisite technological knowledge and abilities, making them appear ineffective and irrelevant. Technological advancements can negatively affect the world of work and assist workers in reassessing their opportunities and developing their abilities to be successful and productive in the 4IR era. Hence, the effects of technological change on jobs are not always consistent. Some responders stated that technological advancements can lead to the creation of innovative employment and new skills, but they can also make some occupations boring and monotonous.

In a study of Pakistani retail workers, Ghani, Memon, Han, Montes, and Fuentes (2022) found that automation and AI have made technology a competitive alternative to human labour, and that the impact of technological advancements has increased employment insecurity. In the retail sector, technology is not only making things easier for employers, but it is also making jobs less secure for workers. Because of the unpredictability that technology has brought about in the workplace, workers have also become more agitated and anxious. These days, job insecurity is becoming a major source of stress. This was acknowledged by one of the respondents who said that,

workers in the retail sector are anxious because of the precarious nature of the work that they do (Palesa)

Technological advancements, particularly from the 4IR, have notably reshaped precarious work in the retail sector. Automation and AI have led to job losses and heightened demands for upskilling (Rotman, 2013). While these technologies enhance operational efficiency and communication, they also increase job insecurity and stress (Ghani et al., 2022). Labour process theory provides a critical framework for understanding the effects of technology on labour, emphasising that technological advancements can have dual effects, both exploiting and empowering workers. According to Alneyadi (2005), labour process theory suggests that while

technology can enhance managerial control and intensify exploitation, it also has the potential to empower workers by providing new skills and opportunities for resistance.

4.3.5. Technological change and labour relations

Internal and external factors have significantly shaped the working environment in the retail sector. Employers need to stay informed about the changes driven by advancements in the 4IR, as these technological developments increasingly affect labour relations. All parties involved in the relations such as employers, workers, and the state are all facing numerous issues because of technological change. Work practices and technologies are widely adopted due to their considerable influence on the nature of work. Alneyadi (2005) argues that when modern working practices are implemented, can occasionally change work in unexpected ways, and negatively impact workers. This is to say that workers at all organisational levels frequently have difficulties because of the development, application, and administration of new working practices. Technological change has a profound impact on labour relations, reshaping various aspects of work and employment dynamics. One significant effect is job redesign and automation. As automation technologies become more prevalent, they transform traditional job roles and processes. While automation can lead to the displacement of certain job roles, it also creates new opportunities in fields like technology maintenance and system management. This shift necessitates continuous reskilling and adaptation from workers, which can affect job security and their bargaining power in the labour market (Acemoglu and Restrepo, 2019).

One respondent argued that,

advancements in technology, such as automation and artificial intelligence, have changed traditional job roles and processes, creating new dynamics in labour relations (Naidoo)

The effects of 4IR technologies on labour relations are also influenced by the changing roles of trade unions and regulatory frameworks. As technological advancements transform job roles and skill requirements, traditional labour practices and union strategies may become outdated (Alneyadi, 2005). This shift necessitates that trade unions adapt their strategies to address emerging forms of labour precarity and defend workers' rights in this new context (Ghani et al., 2022). In addition, regulatory bodies must revise labour laws to keep up with technological change, ensuring fair working conditions and safeguarding workers from exploitation. This interplay between technology, labour relations, and regulatory responses highlights the need

for a proactive and flexible approach to managing the impacts of technological change on the workforce. Technological change brings both opportunities and challenges to labour relations. It can drive efficiency, flexibility, and new career opportunities but also requires careful management of issues related to job security, privacy, work-life balance, and health and safety.

Another respondent pointed out that,

the shift towards more automated and technologically driven workplaces has intensified job precarity, as workers must continually update their skills to keep pace with evolving technology. This constant need for adaptation can increase job insecurity and affect bargaining power (Andile)

The respondent's insights offer a nuanced understanding of how technological change reshapes labour relations, highlighting both its benefits and challenges. They recognise that while technology can enhance operational efficiency and create new opportunities, it also introduces complexities that need to be managed carefully. Automation and advanced digital tools, for instance, can streamline processes and improve productivity, but they also necessitate a shift in job roles and skills. This transformation can lead to increased job insecurity as workers must continually adapt to new technologies to remain relevant in the labour market.

4.3.6. How technological change influences and changes labour relations

Technological change in the retail sector is identified as a factor contributing to poor working conditions, as it allows employers to minimise costs and increase revenues at the expense of workers. Drawing on the response of one of the respondents, she noted that,

in terms of labour relations, technological advancements have often been leveraged by employers to enhance efficiency and profitability, but this has frequently come at the cost of worker well-being (Sibusisiwe).

Another respondent stated that,

workers face limited benefits from technological advancements as some of their rights begin to erode, with automation and AI making it easier to replace them. The introduction of technologies such as green light systems in receiving departments is altering work processes, employment terms and conditions, and overall working conditions (Kagiso).

The drive for enhanced efficiency through automation and digital technologies in the retail sector often results in increased workloads, reduced job security, and deteriorating working conditions. As automation takes over routine tasks, workers are left with more complex and demanding responsibilities, leading to higher stress and physical strain. Furthermore, the adoption of these technologies can render some job roles redundant, heightening job insecurity for those who struggle to adapt. As articulated by the respondents, this technological shift is disrupting the relationship between workers and employers. Workers are uncertain about their future in the retail sector, fearing that increased technology adoption will compel employers to implement new work practices that undermine existing contractual relationships and exacerbate precarious working conditions. Although technological advancements can bring significant gains in innovation and productivity, it is crucial to address their potential impacts on workers' livelihoods and well-being to ensure a fair and equitable transition for everyone involved.

Drawing from the response of another respondent, he said that,

the influence of 4IR on labour relations has made employers and workers sit down and renegotiate new contractual obligations because the technological change in the retail sector has brought about new working conditions that are unpredictable, insecure, and unregulated (Sibusiso).

These changes may require different sets of skills and could lead to negotiations around job creation and fair employment practice. Traditionally, the state, employers, and workers have been the three main actors in any labour relations system. Job security and the quality of working life of workers are at risk due to deregulation and technological advancements, because of these changes, employers have institutionalised new labour relations (Alneyadi, 2005). For example, it was said that at Pick and Pay, workers have two (2) types of employment contracts of which one category is for permanent workers who work 45 hours a week, and two other categories for variable time employee (VTE) who work as casuals and get paid according to the minimum wage. Automation has been the primary cause of the most frequent job losses in the sector, and semi-skilled and unskilled workers have become accustomed to such reductions. Therefore, workers need to adapt effectively to the changes brought about by technological advancements, as they will be most impacted. Automation and restructuring can introduce new employment policies, technological updates, and altered task execution

methods, potentially leading to job insecurity, insufficient income, and reduced rights and protections.

Technological change has had a profound impact on labour relations in the retail sector, reshaping job roles, work practices, and workforce dynamics. One of the most significant changes is the automation of routine tasks, such as checkout processes and inventory management. The introduction of self-checkout kiosks and automated systems has streamlined operations and reduced the need for cashiers and stock clerks. While this efficiency improves operational productivity, it can lead to job displacement, reducing job security for affected workers and shifting the focus toward roles that involve technology management and customer service (Brougham and Haar, 2018). The transformation of work practices in retail has also been notable, with the integration of digital point-of-sale (POS) systems and inventory management software. These technological advancements have improved efficiency but require workers to adapt to new systems and perform tech-centric tasks. As a result, workers must engage in continuous learning and upskilling to remain effective in their roles, which can be both an opportunity for career advancement and a challenge in terms of access to training and resources (Brynjolfsson and McAfee, 2014).

The changes have ushered in new contracts of employment as discussed above, and this has exacerbated the already existing precarious conditions in the retail sector. One of the respondents' noted that,

permanent jobs are getting lost at a much higher rate. It has changed the employment system making work in the retail sector insecure, poorly paid, and unprotected which has led to the breakdown relationship between workers and employers (Lerato).

The views from all respondents at Makro Stores, Builders, Melbro Wholesale, and Pick n Pay collectively revealed that employment contracts in these organisations are classified into permanent and non-permanent categories. This distinction has significant implications for job security, fairness, and worker inclusion. Permanent contracts generally offer greater job stability, benefits, and long-term security, whereas non-permanent contracts, often associated with temporary or part-time roles, provides less stability and fewer benefits, leading to heightened job insecurity and potential disparities in treatment. Understanding these dynamics is crucial for both employers and trade unions to address issues effectively. Employers must recognise the implications of these contract types on workers' livelihoods and morale, and strive to ensure fair treatment across all contract categories. This involves implementing

policies that promote equity, job security, and inclusion for all workers, regardless of their contract status. In addition, trade unions must defend and advance the rights of both permanent and non-permanent workers, ensuring that all workers are adequately protected and supported in a changing work environment.

Bezuidenhout (2022) noted that 4IR has brought a flexible work environment that facilitates the use of flexible work arrangements that negatively affect full-time employment. Technological change has a profound effect on the working relationship. First and foremost, technology is primarily used to replace workers. As a result of the 4IR technologies, certain jobs and skills will become outdated, while others will require workers to adapt their skill set to keep up with technological advancements, and still, other positions will call for the acquisition of new abilities. Hence, the most susceptible jobs are those that need manual labour and repetitive operations that are easily replaced by automated machinery and systems.

A labour relationship is one in which workers work for their employer in exchange for compensation. Employers and workers acquire reciprocal rights and obligations through this connection. For a worker to be legally protected, there must be labour relations. Bezuidenhout (2022) states that technological advancements have pushed workers into a grey area between traditional employment and self-employment. New and non-traditional types of jobs have emerged as a result of technological breakthroughs. It is predicted that the 4IR will result in more precarious work as well as more new employment prospects by creating new jobs and changing existing ones. The labour market has seen casualisation and externalisation after the end of apartheid, which has reduced the level of worker protection (Bezuidenhout, 2022). Drawing on the response of one respondent, she said that:

to deny workers their legal rights, permanent employment is being casualised by substituting it with part-time or temporary work which is poorly paid (Lebo).

The above response from the respondent shows how workers in the retail sector are being folded into increasingly precarious work and labour relations as mediated by digital technologies. Bezuidenhout (2022) states that, to avoid labour laws and reduce employment, employers are increasingly using part-time or temporary work contracts instead of traditional employment contracts as part of the economic restructuring process.

The 4IR may make protection even more inadequate as employers try to stay up with global and technology demands while cutting costs by offering casual forms of work, and outsourcing work to boost profits. Labour regulations and skill-development initiatives must change to

reflect both the new technological driven workplace. Workers who perform flexible work that deviates from traditional employment norms must have legal protection. According to one of the respondents, he argued that,

for trade unions to remain relevant and effective, they need to adapt to the changing nature of the workplace because traditional employment paradigms are shifting. It can therefore be useful for trade unions organising in the retail sector, like SACCAWU, to adjust its bargaining strategy to better satisfy worker needs at work. New skill types that may be required must be taken into consideration and regularly modified under the labour regulations that govern skill development and training (Mpho)

The dynamics of labour relations have also shifted due to technology. Digital systems enable more precise scheduling and performance monitoring, which can increase scrutiny of workers and affect workplace morale. Workers may feel that their performance is constantly being tracked, which can lead to increased stress and potential dissatisfaction (Stone, 2007). This shift in management practices requires a balance between leveraging technology for efficiency and maintaining positive worker relations. The introduction of gig and platform-based work in retail has introduced new forms of employment flexibility, such as on-demand staffing and flexible scheduling facilitated by digital platforms. While this flexibility can benefit workers seeking varied schedules, it can also lead to instability and inconsistent income, raising concerns about job security and benefits (De Stefano, 2016). In a nutshell, technological changes in the retail sector have reshaped labour relations by affecting job roles, work practices, and employment conditions. These changes present both opportunities and challenges, highlighting the need for careful management to balance efficiency and workers' well-being.

4.4. Workers, trade unions, and digital-financial technologies in the retail sector

The rise of digital and financial technologies in the retail sector brings both challenges and opportunities for workers and trade unions. The impact of these technologies depends on the regulatory environment, which shapes their effect on job quality, workers' rights, and employment contracts. As digital transformation progresses, it is expected to modify job roles, work conditions, and organisational structures. Automation and AI may enhance efficiency but could also lead to job displacement or require new skills. Trade unions are essential in addressing these changes, advancing for fair conditions and protecting workers' rights. This section will explore how workers and trade unions in the retail sector are responding to

technological advancements and adjusting their strategies to manage emerging challenges and opportunities. Understanding these dynamics is crucial for grasping the broader effects of technological change on labor relations and worker well-being.

4.4.1. Workers

Workers who were interviewed were of the view that digital technology would harm jobs because automation has the potential to take jobs away. Workers at Makro stores, Builders, Melbro Wholesale, and Pick and Pay perceive technologies like mobile tills, green light technology, online shopping, one chat application, and online human resources systems as threats. Customer convenience and flexibility have been enhanced by financial technology, which has enabled contactless payments, digital wallets, and online marketing and sales but at the expense of workers who are being directly affected by technology. Innovations like these have made shopping in the retail sector more customer-focused. However, the concern of workers in retail is that such technology leads to job insecurity. According to one of the respondents,

digitalisation is assisting employers in the retail sector to promote products and drive sales using different technologies to connect with customers (Naledi).

Drawing on the response of another respondent, she said that,

the working environment is rapidly changing due to the digitalisation of the workplace, and for workers to remain relevant, there is a need for workers to build technological competencies and improve technological skills, for instance, on-the-job Training, and formal education (Lerato).

Improving technological skills appears to be one of the capacities that workers need to develop in the retail sector so that they will be able to deal with digital and financial technologies. This has been recognised by Ndzendze and Marwala (2022) who argue that technological advancements have resulted in significant changes in production processes, requiring workers to re-evaluate their skill sets to survive. When it comes to digitalisation it was also said by another respondent that,

most workers are not happy because their jobs are not secured, retrenchment is now a daily occurrence in the retail sector, and low income is now a norm. He continued saying that workers are not much concerned about the introduction of financial digital,

as long as workers' jobs are protected it is not a problem. The problem comes when these technologies seek to take the bread and butter away from our tables (Themba).

Workers believe that the 4IR in the retail sector is there to replace them and take away their jobs, and as a result, it is threatening their job security. Even though many of them said that these innovations make life easier, however, they are worried about their jobs that seem to be at risk. Though there is a sentiment that automation may replace or take away their jobs, some others think that technology may enhance their skills. Despite that, workers feel threatened and believe that their jobs are at risk of being replaced by machines as the introduction of 4IR technologies reduces jobs in the retail sector. In addition, it was said that,

once new machines are implemented in the workplace, these machines do not need wages, lunchtime, sick leave, or maternity leave but they only need to be serviced when they are faulty, and this is the reason why employers in the retail sector are eager to invest in technology so that they can maximise more profit, and minimise the cost of labour (Andile and Thabo).

While new technologies in the retail sector offer numerous benefits, including increased efficiency, enhanced comfort, and improved customer satisfaction, they also present significant challenges for workers in traditional roles. These advancements often lead to substantial changes in job functions, with some roles becoming obsolete or evolving significantly. As a result, workers may face job displacement, the need to acquire new skills, and the pressure to adapt to rapidly changing environments. To address these challenges and facilitate a smooth transition, proactive measures are essential. Reskilling and upskilling programs play a crucial role in equipping workers with the necessary skills to thrive in a technology-driven workplace. These programs can help workers adapt to new technologies, enhance their career prospects, and remain relevant in their roles. Investing in training and development, employers can ensure that their workforce is prepared for technological advancements while also supporting career growth and development.

4.4.2. Trade unions

Given time constraints, the SACCAWU trade union was selected as a case study to explore how trade unions operating in the retail sector perceive and interact with digital and financial technologies. The respondents argue that SACCAWU is aware of job losses caused by digitalisation in the retail sector and how it negatively impacts its bargaining power. They

argued that the trade union's ability to negotiate favourable terms and conditions of employment, such as wages, benefits, and working conditions, could be weakened if SACCAWU members lost their jobs as a result of digitisation, which would weaken the union's membership base. Consequently, the potential decrease in SACCAWU's membership due to job losses from digitalisation highlights the critical need for proactive measures to protect workers' rights, enhance the trade union's resilience, and ensure equitable economic opportunities in the changing retail sector.

In 2021, SACCAWU released a statement highlighting the challenges that retail workers faced, especially in light of the pervasive layoffs and subsequent decline in union membership. The statement alluded that because of the continuous widespread retrenchments in the retail sector, it has resulted in a loss of more than 10% of its membership. For instance, during the COVID-19 pandemic and its restrictions to contain the spread of the virus, the biggest non-food retailer Edcon issued section 189 of the Labour Relation Act 66 of 1995 to serve 22 000 workers with retrenchment notices. Furthermore, thousands of workers, most of whom were SACCAWU members were also laid off by retail giant Massmart due to its restructuring. All things considered, the frequency with which layoffs occur in the retail sector highlights the importance of strong labour legislation, efficient union representation, and proactive measures to address the structural issues that workers face daily as a result of technological advancements and economic instability.

It is no longer sufficient for organised labour to only think of their missions as organisations that organise and represent workers on issues like pay and working hours. The relevance of the technological revolution is expanding, and it must be included in their effort to advance and protect workers' interests (ILO, 2023). With that understanding, one respondent said that,

workers feel that there is a need for SACCAWU to keep organising, negotiating, and engaging consistently with employers in the retail sector to ensure that workers are trained so that they can adapt to new technologies before they are implemented (Zanele).

Concerning the adoption of financial technologies, workers who are members of SACCAWU are of the view that it will lead to job displacement. It was stated by one respondent that,

trade unions like SACCAWU in the retail sector are worried about digital and financial technologies as these innovations are a direct threat to the job security of their

membership, for instance, changes in work processes, green light technology, digital payment, shift to online retail can negatively affect the membership (Bongi).

Trade unions are trying to save jobs for workers so that they can keep their members and their organisations strong, but even though the trade unions in the sector are trying to do so, still they are not proactive as articulated by Hlatshwayo and Buhlungu (2017). They only react when these technologies are introduced and implemented. It was said that

if trade unions like SACCAWU are to win this war, they need to spend resources on research and development, so that they may be able to understand new technologies that will be implemented in the workplace in the short, medium, and long-term, and then come up with intervention program to reskill and upskill workers in the sector in anticipation of those changes (Naledi and Kabelo).

Webster (2008) presents a critical view of the transformation in labour movements and work structures due to global economic shifts and technological change. The traditional concept of labour as a pivotal social and economic force is being eroded by factors such as the rise of flexible work conditions, decline of industrial unions, and increased influence of global capital. His view suggests that the role of labour in shaping economic and social policies is diminishing, leading to a reconfiguration of worker representation. In the digital age, the labour movement faces both significant challenges and opportunities. The advent of automation, artificial intelligence, and gig economies is reshaping labour processes and employment relationships in ways that challenge traditional union models (Webster, 2008). He underlines a shift from stable, unionised employment to more precarious and fragmented work arrangements. This shift complicates the traditional strategies of labour movements, which were historically based on industrial solidarity and collective bargaining (Webster, 2008).

For example, in South Africa, where trade unions have played a key role in defending workers' rights, the emergence of digital technologies and the gig economy are leading to new forms of labour exploitation and inequality. These changes are straining the traditional union frameworks, which were designed for a more stable workforce. The implications for the future of labour, involve a fundamental redefinition of work and worker representation (Webster, 2008). As technological advancements continue to change the nature of work, the labour movement must adapt by embracing new forms of organisation. This includes addressing contemporary issues such as wage inequality within the gig economy, the rights of workers in automated industries, and the development of policies to support workers transitioning between

jobs (Webster, 2008, Barchiesi, 2016). Furthermore, innovative approaches to worker organisation, such as digital platforms for collective action, could provide new avenues for addressing the challenges of fragmented and precarious work environments.

Hlatshwayo and Buhlungu (2017) argued that trade unions have been slow to respond to and educate workers about new labour relationships brought about by the current technological transformation in the workplace. It was noted that,

trade unions such as SACCAWU are concerned about the rising number of job losses and the increasing prevalence of precarious work in the retail sector, which are attributed to the impact of digital and financial technologies (Dineo).

There is a need for trade unions to play a role in empowering and upgrading their technological skills and digital competency. Despite, the negative impact of these technologies on jobs, however, it was also said that

trade unions benefit as well from these technologies because they facilitate the efficient development of their databases that are accessible to their members which improves staff coordination (Ayanda).

These technologies can also act as a leverage point for e-recruiting with online stop order forms as well as appealing to the interest of young workers to join trade unions. Technology can equally be used by the working class as an instrument for empowerment and resistance (Marx, 1887, and Burawoy, 1979). Furthermore, it was said that,

financial technologies assist trade unions to operate effectively when it comes to subscription deduction because some financial transactions are done electronically instead of carrying huge amounts of money (Lebo).

Digital and financial technologies can have both negative and positive impacts on trade unions. On the negative side, these technologies can lead to job losses and the proliferation of precarious work, which weaken trade union's membership base and bargaining power. This erosion of job security and increased job insecurity make it more challenging for trade unions to negotiate favourable employment conditions. Conversely, these technologies also offer potential benefits by enabling trade unions to enhance their organisational efficiency, improve communication with members, and leverage data to better defend and advance workers' rights. As such, while digital and financial technologies present significant challenges, they also

provide opportunities for trade unions to adapt and strengthen their role in representing and supporting workers in a rapidly changing work environment.

It was said by one of the respondents that:

Trade unions know and understand that technologies are forever evolving, and they make work better, more effective, and more efficient. For instance, they improved communication, enhanced organisational efficiency, access to information and resources, networking and collaboration, remote engagement, participation, mobilisation, and campaigning (Andile and Naidoo).

Concerning digital and financial technology in the workplace, trade unions view these changes as a way for employers in the sector to exploit workers. For trade unions, it is easy for employers in the retail sector to lay off workers to maximise profits. The introduction and increasing use of digital and financial technologies in the workplace have the potential to eliminate jobs, and trade unions are concerned that,

technologies such as mobile tills, green light, and online shopping, to mention a few, would cause unemployment and job insecurity by taking away workers' jobs (Mpho).

As a result, precarious work conditions may increase, and these changes are seen to be factors that are contributing to the development of part-time employment, short-term contracts, and inadequate benefits packages. Therefore, advancing workers' interests in the face of technological change is mostly the responsibility of trade unions like SACCAWU. Workforce empowerment can facilitate the shift towards a more digital economy and prevent workers from falling behind by equipping them with technological skills and digital competency.

4.5. Employers, workers, trade unions, and state responses to precarity

The availability and quality of jobs have become more unpredictable and dangerous due to precarious work. The ability of workers to manage their everyday lives and raise families is impacted by precarious work, which is a social, economic, and political concern. It also has a significant effect on the type of work, workplace, and experiences that workers have at work. The proliferation of uncertainty and insecurity linked to precarious work has caused workers to experience anxiety, anger, anomie, and alienation, driving them to take defensive steps to protect themselves and resist technological change (Burawoy, 1979). As stated by one of the respondents,

when the self-service machine was announced to be introduced in Pick and Pay, workers resisted because they knew that it would take the jobs of workers who were working at the front end (cashiers) away (Palesa).

The rise in insecure employment, inadequate income, and lack of rights and protection have consequently become a pressing concern in many countries, exerting tremendous pressure on governments, and businesses worldwide to act to alleviate social and economic hardship of workers. This section seeks to understand the responses of employers, workers, trade unions, and the state to conditions of precarity in the retail sector.

4.5.1. Employers

Employers respond positively to the technological change simply because these technologies increase sales and boost profits. Certain employers have adopted flexible work arrangements, such as temporary contracts and part-time jobs to cut down the cost of labour which can lead to job insecurity for workers. This was acknowledged by workers from Makro stores, Builders, Melbro Wholesale, and Pick and Pay who said that,

the flexibility of contract of employment among workers, enables employers in the retail sector to minimise the cost (Sibusisiwe).

Workers in the retail sector may lose their jobs, have to work fewer hours, or have their roles changed as a result of digital transformation, even while it can also improve consumer satisfaction and operational efficiency. Workers in jobs like cashiers, receiving stock, or inventory clerks that are automatable run the danger of losing their jobs or seeing their pay decline. The retail sector's digitalisation has made it easier for employers to shift from permanent employment to non-permanent employment, where workers take on job risks and receive little in the way of social benefits and legal protections.

One respondent said that

employers are excited about 4IR as it minimises cost and improves efficiency and effectiveness (e.g., cost reduction, competitive advantage, etc...) at the expense of workers, they pay lower wages because wages are seen by employers as a big expenditure that needs to be reduced to maximise profit, and this leads to the precarious and casualisation of work which benefits employers (Khumalo).

Employers hire such workers because they can reduce their labour costs by changing wages without restraint. The Basic Conditions of Employment Act 75 of 1997 (BCEA) and the Labour Relations Act 66 of 1995 (LRA) are two of the many labour laws that protect workers in South Africa. But many businesses attempt to take advantage of their workers by outsourcing and casualising their labour to avoid having a worker-employer relationship (Bagrain, 2023).

Precarious work is generated by labour policies that are designed to increase employers' profits and flexibility while shifting risks to workers (ILO, 2007). The respondents mentioned that beyond what is mandated by labour legislations or collective bargaining agreements, employers should be compelled to offer additional benefits and protections to workers. The views of the respondents seemed to be sceptical of employer's policies' ability to effectively address the challenges brought on by precarious work. It was sated that,

the reason why the government needs to come up with policies that will improve the working and living conditions of workers in the retail sector; it is because employers gain from the flexibility of precarious work arrangements as it is cost-effective (Themba).

They continued saying that workers cannot do anything unless the government implements a regulatory framework that seeks to compel employers in the retail sector to respond to conditions of precarious work. Employers in the retail sector are the primary designers of labour inequality, cost-cutting measures, boosting flexibility, transfer risk to workers and low-quality jobs, and have more leeway to use precarious employment to maximise profit and minimise the cost of doing business.

4.5.2. Workers

Workers feel vulnerable and struggle to plan their future because the changing nature of work takes away jobs and increases the number of precarious workers. Job uncertainty, a lack of social safety, and restricted access to benefits like healthcare and pensions are all common outcomes of precarious work. Planning for the future and keeping a steady income could be difficult tasks for workers. Workers' reactions to precarity in the retail sector are multifaceted and shaped by a variety of elements, such as personal preferences, the resources at their disposal, and the overall socioeconomic environment. It was said that,

Labour activism, unionisation, collective action, education, and training are seen by workers as responses to precarious work and ways in which they can demand fair salaries, job security, and better working conditions (Naledi).

This involves taking part in union activities, protests, and strikes to call for improved pay, job security, and working conditions. According to Kenny (2018), despite the fact that working conditions in the retail sector have not much improved, South African workers still make collective demands at work. Precarious work is becoming more prevalent eroding salaries, and working conditions and threatening to divide workers (ILO, 2007). Workers have few options when it comes to precarity, most of them are living below the poverty line. As precarious work puts workers into a permanent state of uncertainty, there was a general view among the respondents that the only response from the workers' side is to be educated and trained so that they can acquire a new set of skills. Workers hope that the new set of skills acquired will help them remain relevant in the retail sector or venture into other sectors that will give them permanent jobs that will enable them to improve their living and working conditions and better plan for the future of their family members. A general view from one of the respondents said that:

workers are more worried about their job security in the retail sector, and they are willing to give away their rights to protect their jobs. He said that some of the workers who are not unionised do not want to join trade unions because it may worsen their jobs if the trade unions bargain for high wages and better conditions, because employers may resort to retrenching workers (Kabelo).

Because of insecurity and fear for the future, workers said that to respond to precarity in the retail sector besides education and training, there is also a need for workers together with their trade unions to continue organising, resisting precarious work in the retail sector and demanding better working and living conditions. This implies that a wide range of proven and creative worker mobilisation and organisation strategies are needed to organise all workers irrespective of gender, race, tribe, region, religion, and social origin, but the strategies should be to reach out to those with irregular and precarious work. The trade union is in a better position than any other organisation to represent all working people and to form strong coalitions with other movements to guarantee safe, stable, and predictable working conditions for all workers (ILO, 2012).

4.5.3. Trade unions

Trade unions are worried about the automation of work in the retail sector because it is not used to better the living and working conditions of workers but rather to replace workers with machines that perpetuate income inequality and widen the gap between employers and workers in the retail sector. Like trade union movements worldwide, the South African movement has had difficulty adapting to the shifting makeup of the labour force (Runciman, Hlungwani, 2021). Even though trade unions are struggling to adapt, facing membership decline, and limited ability to represent workers in unorganised and precarious sectors, South African trade unions according to the respondents have been strong supporters of workers' rights.

To ensure that workers have better working conditions, they frequently bargain with the government and employers. Trade unions should develop strategies to fight against precarious work in the retail sector, and for it to be impactful, then trade unions will have to work with a local and international labour organisation to respond to precarity by influencing governments around the world including South African government to come up with a new legislative framework that will respond to the new realities and improve the working and living conditions of all workers. It was said that:

trade unions like SACCAWU need to assist their members to re-skill and upskill so that they can acquire new skills that are required in this ever-changing technological environment (Ayanda).

Even though trade unions are aware of the working and living conditions under which those who are in precarious work are exposed too due to technological change, their responses have been criticised for being very slow in addressing the effects of technology (Hlatshwayo, 2014, 2017). Despite that, trade unions have been putting more and more effort into fighting precariousness and enhancing precarious workers' working conditions through organising, demanding stronger labour law, negotiations, collective agreements, and provide training to adapt to market changes. Seeing themselves as activists for social justice and consequently the voice of the disenfranchised in the labour market and society at large, they have developed a range of tactics to protect the rights of insecure workers. Hlatshwayo (2013) argued that South African trade unions should be more creative in protecting workers' interests and jobs when it comes to technologically driven production changes at the workplace. To protect workers' interests and jobs, it was said that,

trade unions need to adopt a proactive approach that seeks to deepen the union's awareness of technological developments at the plant, industrial, national, and worldwide levels (Kabelo).

Trade unions also acknowledge that the fates of the permanent and non-permanent workers are linked, with employers using precarious workers as leverage to drive down the wages, benefits, and working conditions of workers. Among the respondents, one stated that:

trade unions perceive precarious work as a plan of employers to exploit workers to maximise high profits, while workers are being replaced by casual workers who are poorly paid. Trade unions are realising that if they do not do anything, the membership is going to decline which will affect their power to bargain for better wages and conditions. As a result, employers will not respect workers' rights because they will have no voice that is why trade unions must resist and fight against precarious work (Tshepo).

Based on the above, trade unions should develop strategies that seek to oppose precarious work strive toward its abolition, and attempt to close the gap between precarious and regular workers by enhancing the working conditions of all workers. Strategies can also be aimed at various parties such as employers and the state who are seen to contribute to the creation and perpetuation of precarious work according to the respondents. These strategies could be cooperative, negotiated, and conflictive depending on the realities that workers are facing within the retail sector.

Keune and Pedaci (2019) argue that trade union strategies might take the form of cooperative and negotiated strategies (collective bargaining, social dialogue, bilateral initiatives) or conflictive strategies (strikes, protests, mobilisation). However, trade unions' ability to combat precarious work depends on their ability to mobilise collective action, engage in strategic advocacy, and negotiate with employers and other stakeholders. Trade unions can improve their efficacy in tackling precarious work and supporting workers' interests by fortifying their membership base, centralising their organisational structures, and encouraging cooperation and solidarity with other unions.

4.5.4. State

Respondents were of the view that the state is excited with this because it creates a conducive business environment for foreign direct investment which from time to time puts pressure on

the government to implement pro-business legislation. It was argued that the state has little to protect job security, and workers feel that the state is colluding with the employers in the sector because employers do as they wish. To address the issue of precarity in the retail sector, they proposed that there is a need for the government to regulate the labour market, implement and strengthen labour legislations to address precarity-related issues, and ensure fair treatment of all workers in the sector. Without pro-workers legislative changes or a decrease in funding for labour inspection and enforcement, the state is removing itself from some types of labour protection which leave workers vulnerable to exploitation by employers.

A comprehensive legislative response is required to combat precarious work, which includes steps to guarantee full employment and economic equality. It is important to create fiscal, social, and economic policies that benefit all socioeconomic groups. One respondent stated that,

there is a need for the government, employers, and trade unions to develop a regulatory framework to curtail and eventually end precarious work, as well as increase worker empowerment through the promotion of collective bargaining and the protection of their rights to bargain collectively, and without fear of being retrenched from work (Palesa).

The respondents acknowledged that to protect the rights of workers, the South African government has put in place labour legislations and regulations, but enforcement, especially in the unorganised sector, can be difficult. They further alluded that social protection measures have also been put in place by the government to alleviate the vulnerabilities faced by workers in precarious work. Nonetheless, there may be differences in these programs' efficacy and coverage.

ILO (2012) states that curbing precarious work, indecent working, and living conditions requires universal minimum salaries, universal social protection floors, and strategies to counteract the erosion of the labour relationship. Collective bargaining agreements, wherein workers directly negotiate and choose their working conditions, are necessary to supplement the legislative framework. History demonstrates that legislation and regulations frequently remain unfulfilled in the real world without the collective bargaining rights and worker leverage provided by trade unions. When it comes to applying labour legislation to non-permanent employment, the government should create national frameworks after consulting with social partners. Better compliance and enforcement, explicit policies on how to respond

to precarity that is fuelled by technological change. It was said that failure to do that may cause working environments, families, businesses, and society to suffer if workers' rights are not protected.

4.6. Social implications of 4IR on workers' attitudes, work practice, and aspirations

Malatji and Mabeba (2022) state that due to technological advancements, many South Africans' lifetime career opportunities are likely coming to an end. The population, which is still rising, will be impacted by this. Since the 4IR technologies can destroy some industries or sectors while creating new ones, this technological revolution is inevitably disruptive. People are losing their jobs because of other sectors collapsing and their services being less and less needed. For instance, the introduction of robots will never be able to replace humans' need for personal, emotional relationships with other people. Therefore, the technological change is presenting workers with both opportunities and new social challenges. In this section, the focus will be on social implications on workers' attitudes to work, work practices, and the aspirations of workers.

4.6.1. Social implications on workers' understanding and attitudes to work

Workers find themselves having to acquire a new set of skills to remain relevant in the new working environment. Technology changes the attitudes of workers in a way that they are always scared of losing their jobs. Work attitudes do more than only make workers better or worse in a workplace. Attitudes have an impact on all aspects of the workplace, including morale, output, and job satisfaction. Job satisfaction among workers is mostly impacted by work stress, which is an organisational issue. When workers feel good about their job or employment situation, they are said to be in a state of job satisfaction. High job stress levels are more common among workers who believe their needs are not being met at work or who are fearful of losing their jobs, both of which can have a detrimental effect on workers' job satisfaction (Ghani et al., 2022).

One of the respondents argued that,

workplace attitudes are shaped by many factors which include job satisfaction, job security, employer support, and worker engagement to mention a few (Bongi).

Understanding the factors that influence workers' attitudes will enable them to create a more positive or negative work environment. It was said by one of the respondents that,

workers' attitudes toward work in the retail are negative because they are poorly paid and involved in work that is temporary, and casual without social protection. Workers are not satisfied because of the automation of the workplace which is seen as a strategy for employers to replace workers with machines. (Zanele).

The 4IR technologies have a huge impact on the level of freedom, power, and privacy of workers in the workplace. Workers are experiencing anxiety and fear due to the potential of job losses and the perception of technology threatening the job security of workers in the retail sector Ghani et al (2022). Job satisfaction is one of the main variables influencing workers' attitudes. There is a much greater likelihood of good attitudes in the workplace among workers who take pleasure in their work, are confident in their abilities to complete the tasks allocated, and like their assigned roles. However, it was said that,

technology is transforming the way workers complete their tasks and may also result in employment losses and job discontent. (Ayanda).

Some workers have a dilemma since the advent of new technologies will eliminate unskilled people. Because of this, workers will have to adjust to the new technologies, even if it will cost them money to learn the new skills needed to stay competitive in the labour market. It has been stated that employers in the retail sector only train workers who best fit their needs and that after workers leave the sector, the knowledge they have gained does not help them advance their careers in other sectors.

4.6.2. Social implications of 4IR on work practice

Technological change has compelled workers to be equipped with the set of skills because the way employers and workers in the retail sector execute their tasks is evolving due to technological change. From the retailers' perspective, technology helps employers boost sales and improves efficiency and effectiveness. For instance, phones, faxes, emails, replace letters and the physical way of connecting workers in the workplace. Hence, there is a need to reskill workers so that they can adapt to technological change for workers to remain employed in the retail sector. It was said by one of the respondents that work practices are rapidly changing due to technological change in the sense that:

4IR leads to a reduction in the quality of workers social interactions as many workers feel more isolated and disconnected from their peers. This has the potential to decrease socialisation opportunities among workers (Sipho).

Marx's (1887) concept of alienation is relevant here, as 4IR technologies may exacerbate workers' feelings of estrangement from their work, colleagues, and the production process. Workers may experience a detachment from the outcomes of their labour, further isolating them and affecting their overall job satisfaction and social well-being.

Technology has changed the way workers communicate in today's business. The advent of smartphones, social networking sites, and chat apps has led to an advancement in communication. Faster, more deliberate, purposeful, team-oriented, and cohesive communication has increased among workers as well as between management and workers. Utilising social media tools such as Skype, WhatsApp, and others, workers can communicate with managers and supervisors via email, text message, video chat, or even video conference. Group dynamics have become contradictory due to technological advancements, which has led to widespread alienation (Adibifar, 2016). Technological innovation and technology not only restrict workers' engagement at work, but they also reinforce management's power over workers via computer terminal monitors. Technology has made people disengaged from their actual work. As a result, self-checkout kiosks have supplanted the need to deal with clerks at supermarkets and retail centres.

Technology is having an amazing impact on the workplace. Work in the traditional workplace has changed because of it. Every employer in the retail sector's goal is to increase profitability. They are currently growing financially stable because of cutting-edge technological advancements. Creating new technologies and keeping up with technological advancements, capitalists can maintain power and control over the economy and maximise profits through increased efficiency (Adibifar, 2016). Employers can reduce labour costs through the adoption of innovative technology in the workplace. Employers in the retail sector can use new technology to automate operations whenever possible and concentrate on integrating various tasks, hence eliminating the need for manual work. As it was that,

those who are doing manual or unskilled will become more frustrated because their jobs will be replaced or become redundant due to new technologies (Kabelo).

This situation can create significant stress and dissatisfaction among workers who may struggle to transition into new roles or acquire the necessary skills to adapt to the changing labour market, even if technological change has improved the operations in the workplace especially the administration and management part of the business but at the same time, it has brought in

retrenchment of workers who do not have what it takes to operate on the new technologies introduced in the workplace.

4.6.3. Social implications of 4IR on workers aspirations

Workers are losing hope of being permanently employed in the retail sector since job security is no longer guaranteed due to the introduction of various technologies in the workplace. The future aspirations of workers are blink because of the threat of losing jobs. These technologies make it difficult for workers to plan properly for their future, for instance, buying a house and car for the family is becoming an unattainable dream because the nature of work does not guarantee them a better future. One of the respondents said that,

workers do not see a bright future in the retail sector because technology is resulting in job losses and loss of income that push workers into a permanent state of poverty due to lack of job security which does not allow workers to plan for a better future of their family members (Dineo).

According to Adibifar (2016), compared to today, people are more likely to see instances of class conflict, inequality, tension, social antagonism, suicide, sociocultural and environmental deterioration, and malaises. Retail workers aspire to create a bright future for themselves and their family members, but the introduction of new technologies is undermining this aspiration by having a detrimental impact on workers' jobs. The labour market has changed rapidly in recent decades due to advancements in technology. As a result, businesses have turned to a variety of strategies to cut expenditures and boost productivity, including outsourcing, privatisation, mergers, downsizing, and restructuring.

Shortly, work will become more precarious which could have negative effects on workers' social protection. Technology has given some people access to new career prospects while increasing unemployment for many others, and it has increased profits for some while decreasing income for others. Because of all of this, some people will just be able to watch and observe the current technology revolution unfold, while others will stand to earn a great deal from it (Adibifar, 2016). Convenience and the shopping experience are becoming more and more important factors in retailers' business models. E-commerce, or ordering and purchasing online, is growing in popularity. Not only may automated storefronts and e-commerce benefit customers, but retailers stand to benefit greatly as well. When more people shop online, employers in the retail sector will need fewer floor spaces and workers.

In addition to lowering the need for human labour, this will save costs by eliminating organised labour's demands, such as providing workers with adequate social protection. It was stated that,

by implementing modern technologies, employers in the retail sector can eliminate low-skilled workers and complete the task for less money (Palesa).

Retail workers' reality aligns with the steps businesses are willing to take to break free from a permanent guaranteed workforce. Employers who want to end permanent contracts that give workers any kind of social protection are a constant threat to both trade unions and workers. Hence, such realities in the retail sector make it difficult for workers to achieve their aspirations of building a better future for themselves together with their families because the jobs that they are doing are not secured and guaranteed.

The next section of this study will examine the perceptions and experiences of retail workers and shop stewards regarding the Fourth Industrial Revolution (4IR) and its effects on employment. It will address the challenges that 4IR poses to trade unions, workers, and shop stewards within the retail sector and explore the measures that trade unions have taken to alleviate the impact of 4IR.

4.7. Workers' conceptualisation of 4IR

The pace of change in how people live and work is unprecedented in human history. Even though there have been three major industrial revolutions that have drastically changed peoples' lives, the 4IR is distinct in that it is happening quickly, affecting every part of life, and expanding over the entire planet. This section seeks to define 4IR, how it has disrupted and influenced work in the retail sector, and how it has positively and negatively affected work.

4.7.1. Defining Fourth Industrial Revolution

The 4IR refers to the technology that is currently being used globally to expedite the production process; this age of rapid technological advancement is radically changing the world in which people live. Its ability to expedite production through automation, data-driven decision-making, and workflow optimisation is one of its primary features. This can result in more productivity, lower expenditures, and more efficiency across a range of industries. One respondent said that,

it is an ongoing technological transformation that seeks to transform the way people live and work. It is a confluence of cutting-edge industrial methods with intelligent systems that interact with individuals and organisations (Khumalo).

Moll (2021) argues that many of the changes associated with the 4IR represent a continuation of existing trends rather than a fundamental break with the past. He suggests that digital technologies are building upon previous innovations rather than creating entirely new paradigms. When it comes to the concept of 4IR, there was a mixed understanding. Some respondents seemed to understand the concept and how it changes and disrupts the world of work. And for some others, their understanding of 4IR was that, whenever 4IR is mentioned, the only thing that comes to mind is robot.

Ndzendze and Marwala (2022) define 4IR as the merging of the physical and digital worlds which denotes the concept of a major shift in the production process. It is described as a revolution that will revolutionise how people interact with one another, how people work, and how economies run. The current reality is that technological innovation is increasingly affecting the way industries operate, and the retail sector is not immune to the technological change. The rapid pace of the 4IR is already becoming more and more obvious, and it will have a significant impact on all industries, including the retail sector. There is a widespread universal belief that for workers to survive in the ever-changing technological environment, they are to be educated and trained so that they can adapt, re-skill, and upskill their set of knowledge. Education and training are regarded as a crucial instrument for preparing workers for the 4IR.

4.7.2. How 4IR disrupts and changes work

It has reduced paperwork and labour intensity in the workplace, and the introduction of computers and other technologies has replaced manual work in the retail sector. The work is no longer the same as before, some processes have been automated in the production and distribution line.

It was argued by one respondent that:

4IR has replaced certain routine tasks and that has led to job losses due to automation, for an instance the job of cashiers, shelf stocking, and inventory are vulnerable to technologies such as mobile tills, digital payments, and green light technology that replace the traditional roles of a cashier, shelf stocker, and receiver clerk (Naidoo).

It changes everything as the machine is replacing workers and requires certain skills to operate those machines. It has disrupted work because some workers do not understand how the new technology implemented in the workplace operates. Many companies are adopting new technologies to boost profitability and maintain their competitiveness to take advantage of the 4IR boom (Ganiyu, Oyedele, and Derera, 2021). Scholars anticipate that the 4IR will lead to status quo shifts, with businesses gradually utilising AI to replace human resources in daily operations. To effectively adopt the 4IR, employers in the retail sector will need to supplement the technological change with workers' development and training to close the growing skills gap. Therefore, the impact of 4IR on the skills gap has ramifications for trade, public policy, labour protection, and the social order at large. The 4IR must have the support of the workforce to be a success. If workers perceive that technology is working against them rather than for them, there is a risk that political pressure will mount to prevent its introduction. This was acknowledged by one respondent who said that workers at Pick and Pay resisted the introduction of self-service machines because they feared that it would have taken away the jobs of cashiers.

4.7.3. How 4IR influence workers' work

Due to technological advancements, workers can now hold meetings online, there is no need to meet physically all the time. The use of Zoom, Teams, etc.... influences the work of many workers by improving communication. The respondents argued that 4IR influences their work greatly because some of them are to be trained or capacitated so that they can perform some duties. To survive in the context of 4IR, workers must learn and adapt to the new technologies. Another respondent said that:

4IR influences the workers' work in the way that every worker will be required to have skills to operate on these machines if they are to efficiently and effectively execute the duties assigned to them (Lebo).

The automation of work is changing a lot of things in the retail sector because workers who cannot operate these machines, end up losing their jobs. The respondents also stated that workers in the retail sector will need to take a life-long learning approach to work, constantly upgrading skills, either to stay on the cutting edge of their sector or to keep up with technological improvements that are taking place across different sectors of the economy. Corfe (2018) states that technological change is influencing workers' work in the way that many repetitive, routine tasks will be obsolete in the future workforce, and this raises concerns about

future job losses and the likelihood of long-term unemployment for individuals performing duties that can be automated. Unemployment is especially dangerous for persons who lack the skills needed to perform work in sectors that are difficult to automate.

4.7.4. Positive and negative effects of 4IR on work

When it comes to the positive side of 4IR, it was said that it makes it easier for workers to store and access information rapidly. For instance, at Pick and Pay, an online human resource system and workers' information portal are assisting workers to receive their payslips, make leave applications, receive updates, and get access to Pick and Pay's policies. It has increased production, efficiency, and quality in process, enhancing decision-making, and providing greater safety for workers by reducing jobs in dangerous environments. It enhances the efficiency and enables more effective knowledge sharing. When it comes to the negative side of 4IR, it was said that

it has destroyed some work which has led to job losses. Low-skill jobs will eventually disappear, and those who lose jobs will be forced into difficult situations, which will exacerbate social unrest (Themba).

A useful framework for recognising and explaining the tension and contradiction inherent in technology is the social conflict perspective. Most of the technological innovation is in the hands of profit-seeking businesses. Technology and growth in technology are constructed by new ideas, inventions, and discoveries for profit, usually for the powerful who own and control the means of production in the economy (Adibifar, 2016). Rapid technological advancement may make it difficult for legislation to keep up, which may result in periodic changes in the laws. Every revolution has its pros and cons, opportunities and challenges, uncertainties and certainty. The 4IR has numerous advantages, including enhanced worker safety through the elimination of jobs in dangerous environments, increased productivity, efficiency, and quality in processes, enhanced decision-making through the use of data-driven tools, increased competitiveness through the creation of customised products that satisfy consumer needs, and more. Although automation has freed some workers from labour-intensive tasks and allowed them to enjoy better working conditions and higher pay, Coldwell (2019) argues that automation has also forced some people into low-paying jobs or unemployment, which has negatively impacted their mental and physical well-being. Technological change has frequently led to stressful work environments and negative workplace outcomes due to job loss threats.

4.8. Perceptions and experiences of workers on the effect of the 4IR on employment

Some jobs and skills will become obsolete due to the 4IR, while others will demand people to adapt their skills to keep up with technological advancements, and yet others may call for the learning of new skills. The most susceptible jobs are those that need manual labour and repetitive operations that are easily replaced by automated machinery and systems. Workers in the retail sector are becoming aware of the threat that this revolution poses to the working class's jobs and livelihood. It was said that,

the 4IR is unavoidable, and it has already begun in the retail sector; and from the look of things technological change will occur at a quicker rate in the sector (Mpho).

This will result in job cuts and the hiring of highly qualified individuals. This situation will alter the workplace labour relationship. The respondents believe that technology reduces operating expenditures, creating prospects for operational expansion. However, there is a widespread belief that employers in the sector prefer to invest in machines over humans, and they have seen skills development as essential for future jobs. Respondents valued the relevance of skills development and emphasised its importance in the age of 4IR and for trade union members' future employability.

4.8.1. Effects of 4IR on employment

Most workers are not computer literate, and this has a big effect on the employment of many unskilled workers whose tasks are routine. Generally, it was said by the respondents that 4IR has a negative effect as it promotes precarious work and retrenchments. One respondent said that:

this may lead to job losses as most work will be done automatically with the use of machines, artificially intelligent, and other technological devices, for instance, automation of routine tasks (Dineo).

Workers will need to adjust their skills in their current employment to stay up with the technological progress, even though 4IR will result in job losses. Certain jobs may also demand new skill sets. This means that although certain occupations and skill sets will become obsolete, others will call for workers to adapt and develop a new set of skills. Hence, 4IR leads to job insecurity in the retail sector and creates unemployment as many unskilled workers will be replaced by machines. Most scholars such as Schwab (2016), Allen, (2015), Rotman, (2013),

Jose (1999), Hlatshwayo (2014), (2017), Hlatshwayo and Buhlungu (2017), and Ndzendze and Marwala, (2022) predicted that technological change would result in huge employment losses, and this was also acknowledged by the respondents as well.

4.8.2. Effects of 4IR on worker

It has reduced the workload and responsibilities of workers. Job loss and unemployment are seen to be the effects of 4IR on workers. Respondents said that the way technology is introduced in the retail sector, they see that job security is not guaranteed in the sector because the automation of routine and repetitive tasks is easily replaced by machines. It was said that:

4IR replaces workers with machines, exacerbates precarious work in the retail sector, and leads to a high rate of unemployment (Bongi).

As automation increases, workers in a wide range of industries including the retail sector will be replaced by computers and robots. Social conflicts will rise because of the disappearance of low-skill, low-paying occupations and the increased obstacles faced by the impoverished. Marx (1887) alluded that capitalism does not endeavour to create technology in general, rather, it develops only machines that benefit its economic, social, and political interests. This was also acknowledged by one of the respondents who argued that,

employers want to save operating expenditures, and they are replacing physical work with machines that can perform tasks much more safely and quickly which leads to job losses and income (Lerato).

According to Adibifar (2016), technology has improved profits for some at the expense of others' income, and it has given rise to work prospects for some while increasing unemployment for many. For better or worse, some people will be forced to watch this technological transformation from the sidelines and never be able to make use of it, while others will reap enormous benefits.

4.8.3. Effects of 4IR on organisation

Trade unions are aware of how 4IR affects retail workers' jobs, living and working conditions. To save the jobs of its members, trade union is compelled to adapt, and also start training and educating its members so that they develop new sets of skills that will enable their members to cope in the ever-changing technological environment. Trade union is not doing enough in terms

of reskilling workers to adapt to these new changes, and this makes the trade union to be reactive rather than proactive. According to Hlatshwayo (2014), trade unions are becoming reactionary when new technologies are introduced because they are unwilling to train and develop their members. One respondent said that:

retail sector has changed due to technological development that is taking place in the sector, and trade unions need to be adaptive if they want to survive in the future (Thabo).

The above said, it was acknowledged by Webster (2008) who argued that traditional forms of labour are increasingly becoming obsolete due to significant transformations in the nature of work, especially under the influence of digital technologies and global economic changes. Hence, trade union to adapt to the new material condition presented by technological change. Most people are used to the old way of doing things, and it becomes difficult to execute duties if one is not capacitated on how to operate the new technologies. It brings pressure to the leaders of the trade unions because they are worried about the retrenchments and job losses of their members. With job losses and increased demand for skills, the trade unions must adapt to more flexible work arrangements so that workers' rights can be protected.

4.9. Challenges posed by the 4IR trade unions and shop stewards in the retail sector

Among the challenges that workers and trade unions are facing in the 4IR period are job losses, which decrease the workforce and eventually result in a loss of union membership. Trade union sustainability and existence are seriously threatened by emerging technological advances. Trade unions must not only protect workers' interests but also adapt fully to technological advancements if they are to continue being powerful and relevant. In the retail sector, the effects of the 4IR on jobs are becoming increasingly prominent, as it is an inevitable development. Trade unions understand how this transformation could affect working-class jobs and livelihoods.

4.9.1. Challenges faced by workers and trade unions

It was said that trade unions in the sector still have old-school members who need training because they do not have the skills that are required in the era of 4IR. Workers who are not skilled are easily replaced by the machines in the sector. It is becoming very hard to convince employers in the sector to protect jobs because the introduction of various technologies assists them in improving efficiency and effectiveness which results in a cost-cutting measure that has

the potential to increase their profit margin. It is becoming difficult for workers to sustain their jobs because they are not trained properly on how they should equip themselves to integrate new technology.

One of the most common concerns that both workers and trade unions are facing is about emerging technology such as self-service machines, green light technology, digital payments, and online shopping which have the potential to replace humans in the workplace, resulting in job losses (Lerato).

The above has been acknowledged by Schwab (2016), Allen, (2015), and Rotman, (2013) who alluded that technological change will lead to job losses. According to the respondents, the frequency of retrenchments and unfair dismissals in the retail sector is rising as a result of technological advancements. Trade unions must adapt to the changing retail sector in several ways. The environment in which trade unions fight to defend the rights of their members is being drastically changed by technological advancements, changing demographics, and more global competition. Automation causes trade unions to lose members in this sector. This has transformed the nature of trade unions, and increased job insecurity, workplace process changes, flexibility, and industrial restructuring all have a major effect on trade unions' capacity to organise workers.

4.9.2. How the challenges affect workers and trade unions

It creates anxiety and uncertainty among workers because they are worried about their future and the future of their family members. Ghani et al (2022) argued that uncertainty created by technological change in the workplace has the potential to increase the level of stress which can be detrimental to the mental health of many workers. The loss of jobs exacerbates the existing harsh socio-economic conditions of extreme poverty, unemployment, and social inequality. Losing a job, means workers are losing income, which has the potential to perpetuate the suffering of workers and their family members.

Declining membership rates are increasing, and the working environment becomes hostile to trade unions. It is now becoming harder even for trade unions to face the hungry workers who are struggling to secure better working and living conditions. Hence trade unions are facing challenges in protecting the jobs of members because it is now difficult to negotiate job security. As a result, trade unions end up losing members which contributes to the decline of

the membership base of the trade union. As the membership is declining, the bargaining power is also shrinking in the way that the trade unions will find themselves in a weaker position.

Technological change, market decline, and globalisation are key factors that are contributing to the decline of trade union membership and power, which is increasing employers' bargaining position relative to workers (Briskin, 2011, Griswold, 2010, Hirsch, 2010, Judis, 2011, Steigerwald, 2010). This was acknowledged by the respondents who stated that when it comes to contractual obligations, employers in the retail sector have an upper hand because workers are offered different contracts of employment ranging from 27 to 40 hours, and others 45 hours contracts, and workers are made to do all kind of work because of the flexibility of these contracts.

4.9.3. How workers and trade unions address the challenges

It was said that some of the workers have embarked on the journey of upskilling and reskilling, but they do not have enough resources to continue with the programs due to the socio-economic conditions under which they are living. In addition, the respondents said that sometimes employers in the retail sector offer training to workers, but this training specifically focuses on skills that employers want, which workers cannot use in other sectors of the economy when they decide to leave. Hence, there is a need for workers to be equipped with skills that are required in the era of 4IR, and they are of the view that both employers and trade unions can work together to address the problem that workers are facing in the retail sector.

One respondent stated the following regarding the trade union's response:

trade unions in retail are not proactive, they react when employers introduce new technologies in the workplace (Sibusisiwe)

Studies have revealed that the responses of trade unions to technological change tend to be reactionary rather than proactive (Hlatshwayo, 2017). In terms of training and educating members, the respondents said that the trade union is not doing enough to strengthen the capacity of its members so that they can remain relevant in the labour market. Another respondent said that:

trade unions are very slow when it comes to that. He said that trade unions must push employers in the sector to train workers on the new set of skills needed in the era of 4IR for career progression (Kabelo).

According to the respondents, trade unions need to spend resources on education and training to ensure that their members are capacitated with relevant skills needed in the retail sector so that workers can be empowered.

4.10. Responses of trade unions in the retail sector to 4IR

Workers and the workplace in particular are greatly impacted by technological change. It has led to the formation of new jobs as well as the loss of certain skilled employment and the establishment of new ones. Trade union responses to technological change have often been classified as either proactive or reactive, with the former being more common in the literature. It is argued that trade unions have taken a defensive stance, reacting to technological innovations only after management has put them into practice. Hlatshwayo (2017) states that traditional union concerns, such as wage negotiations, have always taken a backseat to politics, and the present rift within trade unions has also made it more difficult for them to organise precarious workers and address technological innovations, much alone enhance member services. This section will emphasise organisational solutions/strategies to lessen the impact of 4IR on employment and how workers perceive the trade unions' response to the problem.

4.10.1. Organisational strategies to mitigate 4IR effects on employment

It was said that one of the strategies trade unions uses is to encourage workers to get trained so that they can acquire more skills and become competitive in the labour market. Trade unions are encouraging employers through various platforms to provide skills development in the sector to empower workers with skills that are required in the sector. One respondent said that:

education and training of workers are paramount and trade unions through their partnership with the employers must be strengthened so that workers can continuously be skilled whenever a new technology is about to be implemented so that jobs can be protected (Themba).

Trade unions in retail are trying to negotiate with employers about the contractual obligations of workers

so that the 27 to 40 and 45-hour contracts can be converted into one contract obligation with a clear job description, but this negotiation is still ongoing according to one of the respondents. There is also a need for trade unions to negotiate with employers so that they can develop workplace policies that seek to protect workers in the face of 4IR and job insecurity. Though

the trade union is trying to mitigate the effects of 4IR on employment through skills development, and negotiation for better living, and conditions but the responses are very slow. Studies conducted by Schwab (2016), Jose (1999), Hlatshwayo (2014), (2017), and Hlatshwayo and Buhlungu (2017) have all alluded to the necessity for trade unions to develop strategies or new approaches to ensure that their members are prepared for skills required in the context of 4IR, but the responses have been slow to respond to and educate workers for the new work relationships brought about by technological advancements in the workplace.

4.10.2. How workers relate the responses of trade unions to the issue of 4IR

It has become clear to many workers that trade unions are trying by all necessary means to save the jobs of their members by encouraging them to acquire new skills and negotiate better living conditions, but the process is not fast enough to match the speed of employers in the sector. According to them, it seems like employers are investing more in technological innovations and spending resources on research and development to better understand new and better technologies that have the potential to increase profitability in the retail sector. According to Adibifar's (2016) study, capitalists created and are still creating new technologies that serve their interests and find more effective ways to maximise profits, which gives them power and influence. This is to say that, in any capitalist society, individual capitalists develop technology and boost production to raise their profit, with little concern for workers' working and living conditions or the needs of society.

In terms of skills development, respondents were of the view that for such programs to succeed, there is a need for Sectorial Education and Training Authorities (SETAs) to effectively participate and support this initiative that will empower workers with future skills through various programs starting from skills programs that seek to strengthen workers' skills, to more advanced programs such as diploma, degrees etc... that can enable workers to get qualifications that will assist them with upward mobility, and career progression in the retail sector and other sectors of the economy. Hence, for workers to achieve their aspirations and fight against precarious work, skills development, and advanced learning are seen to be solutions to the problems that workers are facing in the retail sector. One respondent said that skills development and advanced programs are very important for workers because:

first and foremost, I am one of the workers who are not highly skilled, and I see 4IR and its effects on jobs as a threat to my livelihood, I am compelled by technology to acquire

new skills that will secure my job so that I can continue to put bread and butter on the table for my family (Sibusiso).

In the retail sector according to the respondents, jobs are not secured as employers capitalise on this innovation to make more money at the expense of workers. There was a general view that workers need to be equipped with new skill sets that are required in this ever-changing technological environment. In addition to skills development strategy, trade unions must continue to bargain with employers in the retail sector on behalf of their members to improve working conditions, wages, contractual obligations, and benefits.

4.11. Empirical evidence on technological changes and precarious work in the retail sector

Drawing on the responses of the respondents, one can conclude that, precarious work in the retail sector in South Africa is characterised by casual and part-time work, informal employment in nature with wage disparities between permanent and temporary workers. Workers are experiencing job insecurity because many of them do not have consistent working hours or long-term contracts. Temporary workers, including those in precarious conditions, may earn lower wages and fewer benefits than their permanent counterparts. Workers in the retail sector, like those in other industries, may join trade unions to campaign for better living and working conditions, higher compensation, and more job security. However, the success of these initiatives varies.

The project 2019/29 commissioned by the Wholesale and Retail Sectorial Education and Training Authority (W&RSETA), and Cape Peninsula University of Technology, which was conducted by Malgas, (2020) revealed that casualisation is becoming prevalent in the retail sector whereby employers in the sector can staff stores entirely with casual labour. Merchandising is one of the jobs that has been massively outsourced. The task has grown monotonous and does not require skilled workers to complete. Retail employers are consolidating and reorganising packaging and merchandising operations, and merchandisers are assuming aisle attendant responsibilities. Because of this, there is a deskilling process in place in addition to the positions being casual. Workers who use job rotation as a labour flexibility measure are neither compensated for the additional work, they do not given recognition for taking on more responsibility. This affects workers' workloads without raising compensation in line with it (Malgas, 2020).

According to the study, in terms of the percentage of part-time workers in the retail sector, South Africa is comparable to Thailand, where over 7% of part-timers work fewer than 29 hours per week, and over 3% work between 30 and 34 hours. Nevertheless, just less than 5% of workers in Malaysia work fewer than 29 hours a week, compared to over 50% of part-time workers in a country like Zimbabwe (Malgas, 2020). In country comparisons, the Netherlands is usually found to have made the most progress in creating a high-quality part-time work model that supports a substantial portion of the labour force. Non-standard work arrangements, or casualisation, are the terms used to describe this common trend in the US and Europe.

It is anticipated that part-time employment, which is forecast to rise from 52% to 56% between 2010 and 2020, will account for a large portion of the expansion in the retail sector in the United Kingdom. The retail sector employs more people part-time than the overall economy, and the UK has a higher percentage of part-time workers in the retail sector than both the USA and other EU nations. In South Africa, the retail sector has witnessed a rise in the use of "flexible labour arrangements", like subcontracting, casualisation, and flexitime. The retail sector workforce is now divided into core and periphery workers due to the growing use of flexible labour, which also puts core workers' jobs and other security at risk (Bridget, 1998).

4.12. Summary of results and discussions

In summary, the aforementioned sections of chapter 4 aimed to address the primary and sub-research questions related to this project. The primary research question aimed to understand how precarious work and labour relations in South Africa's retail sector are affected and transformed by the technological change. It was revealed that precarious work is progressively taking the role of direct, permanent jobs in the retail sector, enabling employers in the sector to lessen or even completely forsake their obligations to workers. Technological change has shaped labour relations, in the sense that labour is now flexible in terms of employment, wages, and function which has led to the employment and income of many workers being insecure and inadequate. Mabasa (2017) argues that, this has led to a two-tiered employment contract between permanent and non-permanent workers, which has created precarious work conditions, and a lack of rights, and protection in the employment relationship. It has also resulted in an increase in contractual work and a decrease in permanent or stable jobs.

The research project's sub-questions aimed to understand how trade unions and workers in the retail sector think about and use digital and financial technologies. It was revealed that the rise

of precarious work in the retail sector is fuelled not only by technological change but also by other factors such as economic factors, global competition, neoliberal policies, and the rising power of employers in the retail sector. The respondents revealed that, mobile tills, green light technology, online shopping, one chat application, self-serving machines, digital payment, and artificial intelligence, have worsened the already existing precarious working conditions in the retail sector. There is a fear that changes in the retail sector will lead to the elimination of manual, routine, and repetitive work (Ndzendze and Marwala, 2022), resulting in job losses and declining in trade union membership. Furthermore, the research project sought to understand how employers, workers, trade unions, and the state respond to this precarity.

It was revealed that employer's benefit from these changes because technology improves productivity, efficiency, and effectiveness in minimising the cost of labour and maximising profits by employing casual workers and reducing the work of permanent workers. Workers' responses to this precarity were to adapt, reskill, and upskill through training and development, as well as to adapt to the new technological change so that they can develop a new set of skills required in the ever-changing technological environment. It was found that trade unions and workers need to organise and resist precarious work so that they can demand better living and working conditions in the retail sector.

Trade unions have been too slow to respond to the effects of 4IR even though they are trying to organise workers and negotiate better jobs and livelihoods for their members as it was acknowledged by Hlatshwayo and Buhlungu (2017) who argued that the responses of trade unions to address the effects of 4IR technologies are very slow in action. It was further revealed that trade unions should try by all necessary means to influence policies and legislations that will guarantee the rights of workers, provide workers' protection in labour relations, and convert the different contractual agreements into one contract of employment. The state response to address this precarity was seen not to be enough because of the rise of neoliberal globalisation, economic factors, the rising power of employers, changes to the way businesses are structured, and technological change that have triggered a new reality characterised by chronic precariousness in the sector. The state was seen to be colluding with employers and endorse precarious work in the retail sector.

Lastly, the research also sought to understand the social implications of technological change on workers' attitudes of work, work practices, and the aspirations of workers. Because of their lack of job satisfaction and fear of losing their jobs, workers' attitudes and understanding of

their jobs have radically changed. New technologies have changed work practices, which has resulted in worker alienation and high levels of stress, as articulated by Adibifar (2016) and Ghani et al. (2022). These changes have negatively affected the aspirations of workers because it is becoming difficult for workers in the retail sector to plan for a better and more promising. Though 4IR was seen by workers and trade unions as a threat to jobs and livelihood, but the research revealed that 4IR has improved communication, production, efficiency, and effectiveness on how workers execute their tasks. Training and development for workers was said to be very important because it will help workers reskill, upskill, and adapt to the new changes brought about by advancements in 4IR in the world of work. Trade unions in South Africa can take the lead in defending the rights of workers, advancing social justice, and determining fair income distribution in the rapidly changing digital economy by funding research and development to better understand new technologies in the retail industry.

Incorporating discussions from labour process theory (Burawoy, 1979) and Barchiesi's (2016) analysis of the precariat, it is evident that technological change under the 4IR is profoundly reshaping labour processes in South Africa's retail sector, leading to significant shifts in job structures and employment stability. Labour process theory frameworks offer insights into how these technological change impact labour control and worker resistance. Technological innovations often lead to more intensive labour control and increased surveillance, which can exacerbate worker precarity and diminish bargaining power (Braverman, 1974). In the South African retail sector, automation and digital technologies have displaced routine manual jobs, contributing to increased job insecurity and a more stratified labour market.

Barchiesi's (2016) analysis of the precariat further highlights that the rise of the precariat, a segment of workers characterised by significant job insecurity, low wages, and minimal employment benefits is reinforced by technological change. Barchiesi (2016) argues that the precariat's vulnerability is deepened as new technologies enable employers to optimise labour processes in ways that undermine job stability and diminish workers' rights. In the South African retail context, technologies such as mobile tills, self-service kiosks, and digital payment systems and other technologies have allowed employers to streamline operations while reducing labour costs, leading to a more fragmented and insecure labour market (Barchiesi, 2016).

The combination of labour process theory insights (Burawoy, 1979) and Barchiesi's (2016) analysis reveals a dual effect of 4IR technologies, they enhance operational efficiency and

productivity but simultaneously exacerbate labour precarity. The shift towards more flexible labour practices has led to the erosion of permanent, stable jobs in favour of more precarious, temporary roles. This shift not only affects job security but also undermines workers' ability to organise and advance improved working conditions. In response, trade unions in South Africa face the challenge of adapting their strategies to address the changing nature of work in the digital age. While trade unions are attempting to organise workers and negotiate better conditions, their responses have been criticised as slow (Hlatshwayo and Buhlungu, 2017). To counteract the negative effects of 4IR, trade unions must advance policies that ensure workers' rights and protections in an increasingly precarious labour market. They should also focus on integrating new technologies into their organising strategies and training programs to better support workers facing technological disruptions.

In the digital age, the labour movement faces significant challenges as automation, artificial intelligence, and gig economy platforms transform the nature of work. These technological changes often lead to job displacement, the erosion of job security, and the proliferation of non-standard employment arrangements. Workers are increasingly engaged in short-term, contract, or freelance work, which typically lacks the benefits and protections associated with traditional employment (Webster, 2008). The rise of non-standard forms of employment and the erosion of labour protections as critical issues in the modern labour market. Hence, trade unions must adapt to these new realities by advancing policies that address the increasing precarity of work and the need for new forms of labour protection. This includes pushing for greater job security, fair wages, and comprehensive benefits for workers in non-traditional employment settings. Moreover, there is a growing need for trade unions to engage with digital tools and platforms to better support and organise workers.

Crankshaw (2016) highlights that technological change and neoliberal policies are pivotal in driving the growth of precarious work, thereby creating a less secure work environment. In alignment with this, Standing (2011) identifies the precariat, characterised by job insecurity and minimal benefits as a prominent feature of the contemporary labour market. He argues that technological progress tends to exacerbate these conditions, resulting in greater precarious employment. Furthermore, Webster and Dor (2023) assert that to effectively address effects of the 4IR on the South African retail sector, it is crucial to implement a comprehensive strategy that includes labour policy reforms and enhanced worker representation to uphold fair labour practices in the digital era.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

This chapter aims to provide the conclusion and recommendations drawn from the responses of respondents who voluntarily participated in the research. The conclusion of the research is based on the results of the research and shows ways in which workers in the retail sector are being folded into increasingly precarious work and labour relations as mediated by digital technologies. The primary focus was on examining the relationship between technological change and deepening precarity within the South African retail sector. The research took place in the eThekweni Municipality, in the province of KwaZulu-Natal, and twenty respondents who were members of SACCABU) were interviewed. Structured and semi-structured interviews were conducted. The conclusion determines whether the main and sub-research questions were answered during this research and whether the objective of the research was achieved. The research will make recommendations based on the results to help trade unions understand that even though 4IR driven technologies increases job insecurity, trade unions can use technology for the empowerment of their members. Lastly, the research will make recommendations for future research based on the results.

5.2. Conclusion

The objective of the research was to explore the broader implications of technological change on the nature of work, with a focus on how advanced technologies are shaping labour relations and intensifying precarious conditions in the retail sector. This focus is critical as technological change has significantly transformed retail operations and employment conditions. Technological change in the retail sector, such as the implementation of automation, artificial intelligence, digital tools and other technologies, has led to considerable shifts in job structures. The research revealed that technological change has a negative effect on the changing nature of work, including precarious work in the retail sector. Technological change has dramatically reshaped the nature of work across different sectors, including the retail sector leading to substantial changes in job roles, work practices, and labour market dynamics. Precarious work in the sector is characterised by unstable, unprotected, insecure, unpredictable, casual, and low-paid work that has created anxiety and stress for many workers who are not sure how their

future looks like because of uncertainty created by precarity. The interplay of technological change and neoliberal economic policies has contributed to the expansion of precarious work.

The research revealed that the contract of employment in the retail sector is flexible and consists of permanent and non-permanent (casual, part-time, temporary, and short-term work). The nature of work in the retail sector has changed significantly due to technological change and changing consumer behaviours. These changes have transformed job roles, introduced new skill requirements, and changed traditional employment models, leading to both opportunities and challenges for retail workers. The nature of precarious work in the retail sector is seen to be flexible in terms of employment contracts, wages, and functions. Technology influences the nature of precarious work because the introduction of machines replaces manual, routine, and repetitive work. The relationship between workers and employers in the sector is also changing because workers have different contracts of employment. There are permanent and non-permanent workers whose terms of employment differ, there are those who work from 27 to 40 hours and others 45 hours per week. Workers and trade unions in the retail sector see digital and financial technologies as a threat to workers' jobs and livelihoods, and trade unions' survival. The introduction of new technologies will lead to job losses and trade union membership decline.

Regarding the responses of employers, workers, and trade unions, it was revealed that employers in the retail sector are not doing enough to address the nature of precarious work because such work conditions benefit them in terms of productivity, efficiency, effectiveness, and cost-cutting measures which enable them to maximise profits in the competitive sector where the profit margin is thin. Employers in the retail sector invest in technological innovations so that they can make more profits. One viewpoint that was frequently brought up in the discussions regarding workforce development and education is that employers' education investments are primarily made to further their interests. Workers are responding to this precarity through training and development so that they acquire new skill sets that are needed in the sector, however, it was said that workers do not have enough resources to finance their education and training. Workers are appealing to both employers and trade unions to assist them with skills development programs relevant to the context of 4IR in the retail sector. Concerning the response of the state, it was said that despite the introduction of labour legislations such as LRA 66 of 1995, BCEA 75 of 1997, and other labour-related legislation, the state is not visible when it comes to a contractual obligation, where workers have a different contract of employment. Some of the respondents were of the view that the state is colluding

with employers and endorsing precarious work in the retail sector. Even though technological change has improved communication, work processes, productivity, efficiency, and effectiveness it was revealed that it is creating fear, anxiety, and stress among workers because workers fear that automation, AI, and other technologies such as green light technology, one chat application, digital payments, and online shopping will take jobs away from them, and this is seen as a threat that negatively affecting their future aspirations because it is becoming difficult to plan for a better future due to job instability, insecurity and uncertainty. The 4IR is understood by workers as the use of robots and machines to replace workers, and it was said that it is negatively and positively affecting workers. Technology has the potential to destroy jobs and create new ones that require a new set of skills. Work processes are improving, despite its negative impact on manual, repetitive, and routine work.

It was revealed that technological change directly affects trade unions because most of its members are not skilled, and this can result in the decline of membership which can undermine the bargaining power of the trade unions when employers in the retail sector continue to make use of these new technologies. Trade unions were found to have developed a few strategies to lessen the effects of technological change on employment. Although they lack the resources to do so, trade unions attempt to train and educate their members. In the retail sector, they also persist in organising and opposing precarious work. Moreover, trade unions persist in bargaining for improved living and working conditions as well as job security for their members. Trade unions organise marches to challenge the unilateral changes of contractual obligations, and these marches aim to convert different contracts of employment into one contract of employment with social protection for all workers and ensure that the job description is clear to end labour flexibility in terms of the contract of employment, wages, and functions.

In a nutshell, this research highlighted how technological change is deeply changing work conditions and increasing precarity within the South African retail sector. Automation and digital technologies are shifting traditional, stable retail jobs into more flexible and precarious forms of employment. This transformation is evident in the rise of part-time, temporary, and gig work, replacing secure, full-time positions and leading to greater job insecurity among retail workers. Technological change often led to the de-skilling of roles, where automation reduces job complexity and wages, further exacerbating job instability and weakening workers' bargaining power. The move away from stable employment models has resulted in a more fragmented and insecure workforce, characterised by unpredictable hours, low wages, and

inadequate social protection. In response to these challenges, trade unions in South Africa's retail sector must adapt its strategies to address the changing nature of work. Traditional union models, which were developed for a more stable employment landscape, may struggle to address the complexities of modern, precarious retail work environments. Therefore, trade unions like SACCAW need to explore new forms of solidarity and collective action that leverage digital tools and meet the specific needs of precarious workers. This includes enhancing worker education, advocating for supportive policies, and developing innovative approaches to worker organisation. Adopting these strategies, trade unions can better protect workers' rights and ensure that the benefits of technological change is more equitably distributed, contributing to a more just and secure future for retail workers in South Africa.

5.3. Discussions of recommendations linked to the findings

Recognising the need for workers in the retail sector to gain new skills to navigate the rapidly changing technological landscape, several key recommendations have emerged. There is a critical need for targeted training programs that equip workers with the necessary skills to handle emerging technologies effectively. Trade unions should be proactive in organising and negotiating for improved working conditions, and fair wages, and against the rise of precarious employment. Their efforts to address job security and working conditions will be vital in countering the negative effects of technological change. Moreover, fostering collaboration between trade unions, employers, and educational institutions is essential to ensure that training programs are specifically designed to meet the needs of the retail sector. This strategy will help workers stay competitive and secure in their positions while promoting a fairer and more stable work environment. The recommendations of the research are as follows:

5.3.1. Workers should adapt, reskill and upskill

The research underlines those technological advancements in the retail sector, such as automation and other innovations, are contributing to job displacement and increasing job instability and insecurity. These changes often result in the replacement of manual and repetitive tasks, leaving workers vulnerable to job loss. To mitigate these effects and remain competitive, workers need to engage in reskilling and upskilling initiatives. This recommendation emphasises the need for targeted training programs that equip workers with new skills required by emerging technologies. Addressing the financial constraints that limit access to such training is crucial, as it will enable workers to adapt to technological change,

secure alternative employment opportunities, and enhance their long-term job security in a rapidly changing retail sector.

5.3.2. Emphasis on training and skills development

The findings highlight those workers in the retail sector face significant challenges due to inadequate resources for education and training. To effectively navigate the changing technological landscape, it is essential to prioritise training and skills development. Focusing on enhancing these areas, workers can gain the necessary competencies to adapt to technological advancements and improve their job prospects. This recommendation aligns with the identified need for support from both employers and trade unions, emphasising the importance of investing in targeted training programs that address current skills gaps and prepare workers for future demands. Strengthening these efforts will empower workers to stay competitive and resilient in an increasingly technology-driven retail sector.

5.3.3. Campaign for unified employment contracts

The research reveals that the retail sector employs a mix of permanent and non-permanent contracts, resulting in diverse and often inconsistent employment conditions. This fragmentation exacerbates the precarious nature of work, leading to varying levels of job security, pay, and benefits among workers. To address these issues, trade unions and workers must campaign for the establishment of a unified employment contract that includes standardised job descriptions and comprehensive social protections. Such a contract would mitigate the instability and inconsistency in employment terms, providing a more equitable and secure working environment. This recommendation directly responds to the identified concerns about the uneven nature of employment in the retail sector and aims to ensure that all workers, regardless of their contract type, receive fair and consistent terms of employment.

5.3.4. Raise awareness of the effects of technological change

The findings indicate that workers view technological change, especially the advancements associated with the 4IR, as a significant threat to their job security and future prospects. This perception contributes to heightened fear and stress among workers regarding their employment stability. To mitigate these concerns, it is crucial to launch comprehensive awareness campaigns that educate workers about the impacts of 4IR technologies on the nature of work, including precarious work and the role of trade unions in navigating these changes.

Providing clear information and practical strategies for adapting to technological change, these campaigns can empower workers to better understand and manage the changing job landscape. This recommendation aims to alleviate the anxiety surrounding technological disruptions and reinforce the supportive role of trade unions in defending workers' rights and security amidst ongoing technological transformation.

5.3.5. Collaborate with employers for training and development

The research highlights a significant gap in resources for education and training among workers, which hinders their ability to adapt to technological change. To address this, requires fostering collaboration between trade unions and employers. Working together, both parties can develop and implement targeted training programs that equip workers with the skills needed for a technologically advanced workplace. This partnership can ensure that training initiatives are tailored to meet the specific demands of new technologies while aligning with employers' interests in leveraging technology to enhance productivity. Such collaboration will not only bridge the resource gap but also help workers remain competitive and secure in a rapidly changing labour market. This recommendation underscores the importance of joint efforts to create a more inclusive and prepared workforce, capable of thriving in the face of technological change.

5.3.6. Invest in research and development

The findings indicate that while trade unions are making efforts to educate their members about new technologies, they face constraints due to limited resources. Investing in research and development is crucial for enhancing trade unions' understanding of emerging technologies and their implications for the workforce. Allocating resources to research and development, trade unions can gain deeper insights into technological advancements, anticipate their potential impacts on employment, labour relations and develop proactive strategies to address these challenges. This investment will enable trade unions to better inform and prepare their members, thereby mitigating the adverse effects of technological change on job security and working conditions. This recommendation emphasises the need for trade unions to strengthen their research capabilities to stay ahead in a rapidly changing technological landscape and advance effectively workers' interests.

5.3.7. Organise and negotiate better conditions

The research underlines the vital role that trade unions play in organising and negotiating for improved working conditions amidst numerous challenges. Trade unions are essential in fighting for better wages, job security, and safe working environments, particularly in the face of increasing precariousness in the retail sector. Their ongoing efforts in collective bargaining and mobilisation are crucial for addressing the instability and exploitation associated with precarious work. Strengthening their organisation and negotiation capabilities, trade unions can effectively push for enhanced living and working conditions, ensuring that workers' rights are protected and advanced. This recommendation highlights the importance of continued and intensified trade union activities to resist the adverse impacts of technological change and maintain a fair and equitable work environment for all workers.

5.3.8. Skills auditing for training and development

The research emphasises the urgent need for targeted skills development to meet the challenges posed by new technologies in the retail sector. Conducting comprehensive skills audits is essential to address this need effectively. Skills auditing systematically evaluates current worker competencies and identifies gaps between existing skills and those required to navigate technological change. Assessing specific training needs, organisations can tailor their educational programs to address identified deficiencies, ensuring that training is relevant and impactful. This process involves analysing technological trends, understanding new skill requirements, and pinpointing areas where the workforce is lacking. Implementing a structured skills audit enables employers and trade unions to develop focused training and development programs aligned with the demands of the 4IR technologies, enhancing both the effectiveness of training initiatives and the efficient allocation of resources. Skills auditing also supports career development pathways, facilitating the creation of upskilling and reskilling programs that enhance employability and job security. Beyond individual benefits, targeted skills development bolsters the overall competitiveness and resilience of the retail sector by ensuring that workers are equipped to operate with new technologies, thereby improving organisational efficiency and adaptability. Integrating skills auditing into broader training strategies, organisations can better prepare their workforce to thrive amidst rapid technological change, addressing immediate needs while fostering long-term sectoral adaptation and workforce development

5.3.9. Develop policies and legislation

The research emphasises significant concerns about the state's role in perpetuating precarious work and highlights the insufficiency of existing regulatory frameworks. To address these issues effectively and protect workers in the changing context of the 4IR technologies, it is crucial to develop and implement comprehensive policies and legislation. This includes crafting robust employment protection laws to address the current deficiencies, such as creating regulations that prevent precarious work conditions like unstable, low-paying jobs while ensuring fair wages, job security, and adequate benefits. Policies should extend similar protections to non-standard and temporary employment as are afforded to permanent workers. Furthermore, regulations must address the effects of technological change on employment by establishing guidelines for the integration of new technologies, ensuring they do not undermine job security or working conditions. Legislation should also mandate retraining and upskilling initiatives for workers affected to mitigate job displacement. Strengthening labour rights and social protections is critical, including updating social security systems to encompass non-traditional forms of employment and ensuring access to healthcare, unemployment benefits, and retirement plans. Promoting fair labour practices through transparent wage structures, regular working hours, and safe working conditions, alongside enforcing these standards, is essential. Greater worker participation in policy-making and enhancing monitoring and enforcement mechanisms will ensure that regulations are relevant and effectively implemented. Adopting these measures, policymakers can bridge the gaps in current legislation, protect workers from precarious conditions, and ensure that the benefits of technological change are equitably shared.

5.3.10. Support from SETAs

The findings accentuate the critical need for substantial investment in training and development resources for workers in the retail sector. To address this gap, support from the Wholesale & Retail Sectorial Education Authority (W&RSETA) and other Sector Education and Training Authorities (SETAs) is essential. These bodies can play a pivotal role in delivering targeted training programs that align with the technological change shaping the future of the retail sector. This recommendation is directly connected to the observation that sector-specific support is vital for equipping workers with the skills necessary to thrive in a changing technological environment. Leveraging resources from W&RSETA and other SETAs, the

sector can better prepare its workforce to adapt to technological change, thus enhancing job security and career prospects for retail workers.

5.4. Scope for further research

The research conducted was limited to the retail sector and involved a sample of twenty (20) respondents. While this sample provided valuable insights into how technological change affects the nature of work, including precarious work within this sector, it is not representative of the entire retail sector and its broader dynamics. Consequently, the findings cannot be generalised across the whole sector.

Future research should aim to include a larger and more diverse sample to ensure representativeness. Expanding the scope of research to other sectors, both public and private, will help determine whether the nature of work is changing and whether precarious work is becoming a dominant form of employment in post-apartheid South Africa, as articulated by Hlatshwayo (2019). Moreover, examining how technological change impacts key players in labour relations including employers, workers, and the state can provide a more comprehensive understanding of its effects on the labour relations framework. It is also essential to explore the concept of reverse causality, specifically how trade unions might influence the pace of technological change. This area remains under-researched, and future studies could investigate whether trade unions have any impact on technological change and their implications for workers. In summary, while the current research provides a foundation, broadening the research with a larger, more representative sample and extending the focus to include various sectors and key labour relations stakeholders will yield a more comprehensive understanding of the effects of technological change on the nature of work, including precarious work.

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APPENDICES

APPENDIX 1

ETHICAL CLEARANCE CERTIFICATE



SCHOOL OF ECONOMICS AND FINANCE ETHICS COMMITTEE
CONSTITUTED UNDER THE UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)

CLEARANCE CERTIFICATE

PROTOCOL NUMBER: CBUSE2229

PROJECT TITLE

Exploring the Effects of Technological Change on the Changing Nature of Precarious Work in the South African Retail Sector: The Case study of SACCAWU in eThekweni Municipality, KwaZulu-Natal.

INVESTIGATOR

Mr Kapele Mutachi

SCHOOL/DEPARTMENT OF INVESTIGATOR

School of Economics and Finance

DATE CONSIDERED

14 November 2023

DECISION OF THE COMMITTEE

Approved Unconditionally

RISK LEVEL

Minimal Risk

EXPIRY DATE

31 December 2026

ISSUE DATE OF CERTIFICATE 20 November 2023

CHAIRPERSON

(Dr Sibulele Nkunzi)

cc: Supervisor: Dr Sibulele Nkunzi

DECLARATION OF INVESTIGATOR

To be completed in duplicate and **ONE COPY** returned to the Chairperson of the School/Department ethics committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

Signature

Date

21 / 11 / 2023

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

APPENDIX 2

PERMISSION LETTER FROM SACCAWU



SACCAWU
SOUTH AFRICAN COMMERCIAL CATERING
AND ALLIED WORKERS UNION

KWAZULU NATAL REGION
 Car Salmon Grove &
 Victoria Embankment
 Maritime House, 9th Floor
 Suite 901-906
DURBAN
 P.O. Box 48282
 QUALBERT 4078
 Tel: (031) 304-1956/305-6505
 Fax: (031) 304-9086

02 July 2023
 Kapele Mutachi
 University of the Witwatersrand
 Faculty of Commerce, Law and Management
 School of Economics and Finance
 1 Jan Smuts Avenue,
 Braamfontein 2000
 Johannesburg,
 South Africa

Dear Sir / Madam,

PERMISSION TO CONDUCT RESEARCH AT SOUTH AFRICAN COMMERCIAL CATERING AND ALLIED WORKERS UNION (SACCAWU)

This serves to confirm that we HAVE received your request to conduct research at SACCAWU to meet the requirements for obtaining a Master's Degree in Economics in the School of Economics and Finance at the University of the Witwatersrand. We also understand that you seek to explore the effects of technological change on the changing nature of precarious work in the South African Retail Sector: The Case study of SACCAWU in eThekweni Municipality, KwaZulu Natal.

Motivated by the fact that the outcomes of the research will assist the organisation to understand that even through 4IR increases job insecurity, but it also promotes new, flexible forms of employment that SACCAWU might want to capitalize on, especially, in area of improving investment in education and training of workers; and research development for future workers for them to be equipped with necessary skills required in the context of 4IR, your request is granted.

Yours Faithfully

THULANI MBATHA
EDUCATION CO-ORDINATOR
SACCAWU KZN EDUCATION UNIT

DURBAN LOCAL P.O. Box 48282 Qualbert 4078 Tel: (031) 301-7505 Tel: (031) 301-7965 Fax: (031) 305-4320	PINETOWN LOCAL 207 Arbor House 72 Orempton Street Pinetown 3601 Tel: (031) 702-3389 Fax: (031) 702-3389	PIETERMARITZBURG LOCAL P.O. Box 8131 Candlenwood 3235 Tel: (033) 941120 Tel: (033) 946812	LADYSMITH LOCAL P.O. Box 190 Ladysmith 3370 Tel: (0366) 373508 Fax: (0366) 373508	NEWCASTLE LOCAL P.O. Box 2307 Newcastle 2940 Tel: (03431) 23274 Fax: (03431) 23274	VRYHEID LOCAL P.O. Box 2355 Vryheid 3700 Tel: (034) 980-8854 Fax: (034) 982-1685	KOKSTAD LOCAL P.O. Box 790 Kokstad 3700 Tel: (039) 727-1687 Fax: (039) 727-1290	PORTSHEPSTONE LOCAL P.O. Box 196 Portshepstone 4240 Tel: (039) 682-1053 Fax: (039) 682-1653	EMFANGENI LOCAL Portman Suite 41 Private Bag 302004 Empangeni 3890 Tel: (0357) 923709 Fax: (0357)
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APPENDIX 3

PARTICIPANT INFORMATION SHEET

PARTICIPANT INFORMATION SHEET



FACULTY OF COMMERCE, LAW, AND MANAGEMENT

Participant Information Sheet (PIS)

Dear Sir/Madam.....

My name is Kapele Mutachi. I am a master's student in School of Economics and Finance at the University of the Witwatersrand, Johannesburg. My supervisor is Dr. Sibulele Nkunzi. I am conducting a research study about the effects of technological change on the changing nature of precarious work. The study title is: ***“Exploring the Effects of Technological Change on the Changing Nature of Precarious Work in the South African Retail Sector: The Case study of SACCAWU in eThekweni Municipality, KwaZulu-Natal.”***

I am inviting you to take part in an interview to answer a questionnaire. If you decide to take part, your participation in this research study will last about 30 minutes. The interview/research activity will take place at your organisation at 10am. With your permission, I would like to audio/video record the interview. This data will be stored in a passworded computer for five years and deleted after five years. Only the researcher will have access to the data. During the research activity, I will need to ask for some personal information about you, including your lived experience in the retail sector. The interview will be confidential and anonymous. When I share the results of the research study, I will not include your name or anything else that could identify you. With your permission, other researchers may use the data collected from this research study, but your name and any personal information will not be used or passed on. If you decide to take part in the research study, it should be because you want to volunteer. You do not have to take part. You can stop being in the study at any time. You do not have to answer any questions if you do not want to.

You will not get any direct benefits if you choose to join the research study. You will not lose any services, benefits or rights you would normally have if you decided not to join. Taking part in the research study will not cost you anything. You will not be paid for being in this research study. The risks for this research study are no more than what happens in everyday life in your workplace and organisation. This research study will be written up as a research report. The report will be available on the university library website. If you would like to receive a summary of this report, I will be happy to send it to you. If you have any questions during or afterwards about this research study, feel free to contact me or my supervisor on the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

Yours sincerely,

Researcher:

Kapele Mutachi
2510732@Students.wits.ac.za
+27 72 894 2882

Supervisor:

Dr. Sibulele Nkunzi
Sibulele.Nkunzi@wits.ac.za
+27 11 717 8520

APPENDIX 4

CONSENT FORM



FACULTY OF COMMERCE, LAW, AND MANAGEMENT

CONSENT FORM

Title of project:

Exploring the Effects of Technological Change on the Changing Nature of Precarious Work in the South African Retail Sector: The Case study of SACCAWU in eThekweni Municipality, KwaZulu-Natal.

Name of researcher:

Kapele Mutachi

I, ..., agree to participate in this research project.

I agree to the following:

(Please circle the relevant options below)

The research study was explained to me. I understand what this study is about.

YES NO

I understand that I can volunteer to take part in the study

YES NO

I agree that the interview/focus group/other activity may be audio recorded

YES NO

I agree that direct quotations from my interview/focus group/other activity may be used by the researcher in their research report/ manuscript/book chapter

YES NO

I agree that my participation will remain anonymous (my name or other Identifying data will not be used by the researcher in their research report/ manuscript/book chapter)

YES NO

I agree that other researchers may use the information I provide in my Interview/focus group/other activity (depending on their own ethics Clearance being obtained) but my name and any personal information will not be used or passed on

YES NO

..... (signature)

..... (name of participant)

..... (date)

..... (signature)

..... (name of researcher/person seeking consent)

..... (date)

APPENDIX 5

QUESTIONNAIRE SCHEDULE



SCHOOL OF ECONOMICS AND FINANCE

QUESTIONNAIRE SCHEDULE

Section A: Exploring Background

Demographical information

Age: 21-30 ☐ 31-40 ☐ 41-50 ☐ 51-60 ☐ 61-65 ☐

Gender: Male ☐ Female ☐ Others, please specify _____

Marital Status: Single ☐ Married ☐ Divorced ☐ Widowed ☐

Race: African ☐ Coloured ☐ Indian ☐ White ☐ Other ☐

Work Experience: 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ Others, please specify _____

Educational Status: Matric ☐ Diploma ☐ Degree ☐ Others, please specify _____

Department: _____

Section B: Exploring the Effects of Technological Change on the Changing Nature of Precarious Work in the South African Retail Sector: The Case study of SACCAWU in eThekwin Municipality, KwaZulu-Natal.

Main Research Question

How do the technological changes brought about by advancements in Fourth Industrial Revolution (4IR) inform, shape and change the nature of precarious work and labour relations in the retail sector in South Africa?

1. a). What is precarious work?

b). What is the nature of precarious work in the retail sector in South Africa?

c). How do the technological changes brought about by advancements in 4IR
influence/shape the nature of precarious work in retail sector in South Africa?

d). How do the technological changes brought about by advancements in 4IR change
the nature of precarious work in retail sector in South Africa?

e). How do the technological changes brought about by advancements in 4IR
influence/shape the labour relations in retail sector in South Africa?

f). How do the technological changes brought about by advancements in 4IR change
the labour relations in retail sector in South Africa?

Sub-Research Questions

2. How do workers and trade unions in the retail sector think about and engage with digital technologies?

a). Workers:

b). Trade unions:

3. How do workers and trade unions in the retail sector think about and engage with financial technologies?

a). Workers:

b). Trade unions:

4. From workers perspectives, how are employers, workers, trade unions and the state responding to this precarity?

a). Employers:

b). Workers:

c). Trade unions:

d). State:

5. What are the social implications of technological changes on workers' understandings and attitudes to work, work practices and the aspirations of workers?

a). Social implications of technological changes on workers' understandings and attitudes to work:

b). Social implications of technological changes on work practices:

c). Social implications of technological changes on the aspirations of workers:

How do the shop stewards in the retail sector understand the concept of 4IR?

6. What is the 4IR?

7. In what ways has the 4IR disrupted /changed how you work?

8. How 4IR influence how you work?

9. In what ways, if any, the 4IR positively affect your work?

10. In what ways, if any, the 4IR negatively affect your work?

What are the perceptions and experiences of the shops stewards in the retail sector regarding the effect of the 4IR on employment?

11. What effects do you think 4IR is having on employment?

12. How does the 4IR affect you as a worker?

13. How does the 4IR affect workers in your organisation?

14. What specifically have you done to deal with the potential effects of 4IR?

What are the challenges posed by the 4IR to trade union and shop stewards in the retail sector?

15. What challenges do the trade union and shop stewards face?

16. How do these challenges affect the trade union and shop stewards?

17. How do the trade union and shop stewards address these challenges?

How has the trade union in the retail sector responded to the 4IR?

18. What organisational strategies has the trade union initiated to mitigate the effects of 4IR on employment?

19. How do you relate the responses of the trade union to the issue of 4IR?
