Exploring the Digital Skills for the Finance and Accounting Services Sector and Implications on Skills Development: Lessons from Past Five FASSET Skills Plans Plans

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SECTION ONE: INTRODUCTION AND BACKGROUND

1.1. Introduction

Technology penetration has overwhelmed so many sectors of our economy. The rise of the Fourth Industrial Revolution (4IR) has created some scepticism on others, while it has created exponential opportunities for others. Global trends have shown that, majority of the developed economies have been the fast adopters of the new technology. The World Economic Forum reports have indicated that a lot of these new technologies have boosted a lot of economies even in some emerging markets, especially the Asian Market. Some of the opportunities that the technology has created are often taken for granted, for example the fact that people are now able to work in the United States (US) while based in South Africa is something worth noticing and further explored. Many companies can source skills without physical movement of the staff they have recruited in specific roles.

The Finance and Accounting Services sector is amongst the sectors that have attracted a lot of applications of the 4IR technologies.

Income impact and alternative skills development for the marginalised.

It is not obvious that the benefits of the 4IR technology can always trick down to all classes in society. There has been increased disparities throughout many parts of the world due to job displacements and retrenchment created by the penetration of 4IR (Schwab 2016). The loss of income comes with a lot of anxiety, particularly to those who are faced with having to depend in some form of government grants. Simultaneously, not all economies afford some form of grants to subsidise lost income. These issues have serious policy implications, especially from a reskilling point of view and call for universal basic income for those who found themselves without work due to technology.

Regulation, implication for suitable and responsive training opportunities

Over the years, education has been the route through which innovations emerge. The forms of learning have over the past 10 years expanded to include learning from online without particularly registering in high education and training institutions. This has particularly been the case with candidates who are entrepreneurially inclined. Typical examples of this include amongst others, the rise of the Silicon Valley Tech entrepreneurs and emergent of Asia chip production companies most of which emerged as a result of entrepreneurial mentality.

1.2. Background

Over the past years, the FASSET Skills Planning and Research Unit has been developing Sector Skills Plans (SSPs) as mandated by the White Paper for Post-School Education and Training. A wealth of information has been gathered over these years in different forms or shape. Amongst these datasets is Workplace Skills Plan (WSP)/Annual Training Reports (ATR) data, interviews and focus group sessions with the industry experts.

Whilst efforts to analyse this data have been made, there has not been attempts to analyse the trends and future present and future implication for skills planning within the FAS sector. In addition, we have not measured for example, to what extent are our programmes responding to all the listed Sectoral Priority Occupations (SPO) as presented on our Sector Skills Plan. We are certain however, that bursaries offered by FASSET are indeed responding to top ten sectoral priorities. But the question remains; Are all sectoral occupations being responded to? We do not know the answer to that.

1.3. Rationale and Purpose

The purpose of this report is to gather evidence on the prevalence and examples of changes in the FAS sector labour market due to the 4IR as the main technological driver. The primary focus of the study is to understand (broadly) the impact of the 4IR into Finance, Accounting and related Services sector by investigating the implication of the technological change drivers for skills development and planning.

Furthermore, the report seeks to provide FASSET with the evidence-based implication of the 4IR and focusing on emerging trends on jobs of the FAS sector. In addition, the study shall provide practical education and training implications which FASSET needs to be aware of, to share with the industry and factor into its planning around skills interventions.

1.4. Conclusion

This section presented the introductory part and the background of the review report. In the next section we deal with exploring of literature with specific focus on key subject matter, the 4IR.

SECTION TWO: LITERATURE

The 4IR discourse has emerged in various sectors of the economy across the globe. Technological innovation is taking place at unprecedent speed and often manifested in 4IR.[1] The signs of existence of the 4IR discourse relate to the various deployment of sophisticated ways of work such as application of Artificial Intelligent (AI), Robotics and Internet of Things, 3D printing to name the few.

The most remarkable publication on 4IR is that of the World Economic Forum Director, Professor Klaus Schwab in which he argues that 4IR is changing the world at a faster pace than expected.[2] In addition, this phenomenal change has brought about the increase in incomes and improved livelihoods of others while left other parts of societies disadvantaged. The first industrial revolution happened at almost very linear way[3]. For example, the first industrial revolution used water and steam power to mechanise production. The second industrial revolution used electric power to create mass production. And the third industrial revolution used electronics and information technology to automate production. All these previous industrial revolutions manifested most clearly and linearly. But the fourth industrial revolution is happening at an exponentially fast pace which almost distracting the norms of most economic sectors.

To take this one step further, it is said that one important effect of 4IR if taken advantage of will be the modification of daily activities of employees. Given that 4IR also performs activities that were previously exclusive to human beings (such as mechanical robots, service kiosks and ATMs), however these emerged tools of performing work have the potential to replace people in their daily and routine activities. This will undoubtedly have implications for the competencies and skills required by the FAS sector to deliver upon their respective mandates. The extent to which 4IR is implemented in the FAS sector, and how it has modified and modernised the daily activities of employees remain under-researched. Very little has been reported about the examples of emerging changes brought by emergent of the 4IR. Empirical evidence is required to understand the implication of the Fourth Industrial Revolution in the FAS sector. Providing skills intervention with intention to embrace 4IR without having studied

[1] COEFS (2017). *The impact of the 4th industrial revolution on the South African financial services market*. Centre of Excellence in Financial Services, Johannesburg
[2] Schwab, K. (2016). *The Fourth Industrial Revolution*. World Economic Forum, Davos
[3] Schwab, K. (2015). *The Fourth Industrial Revolution: What it means and how to respond*. World Economic Forum, Davos

theoretical and practical implication of the discourse could be disastrous and potential lead skills to mismatches.

The terms “fourth Industrial revolution”, “digitalisation”, and “e-services” are rapidly becoming one of the most talked-about themes in the FAS sector. The 4IR in the FAS sector represents the new and innovative technologies, which are adopted by the sector, generating changes in procedures and service delivery; in turn, these kinds of technologies improve efficiencies and effectiveness in the FAS sector.

In South Africa, the Presidency instituted Presidential Commission on the Fourth Industrial Revolution which is Chaired by President Cyril Ramaphosa plays a very critical role in integrating all industries to this new wave of development. This is an indication of the extent to which government in South Africa have noted the seriousness and enormous impact of 4IR. However, South Africa still has a very limited understanding of what this all means due to the lack of theoretical and practical understanding of 4IR and the lack of research-based empirical evidence into the 4IR. Most work on 4IR discourse is still in very early stages, no landmark studies that have been published yet.

The World Economic Forum (WEF) anticipates that the emergence of the 4IR will lead to most occupations undergoing a fundamental transformation. In the case of South Africa, evidence of these estimations from WEC is zero to none. While it is expected that some jobs will be threatened by redundancy and others grow rapidly, existing jobs may also go through a change in the skills sets required to do them. These developments have practical implications to the FAS sector in terms of education and training in the sector. With this review report, FASSET hopes to improve the current knowledge around what these changes will mean, especially for traditional Finance and Accounting Services occupations.

The emergence of technology has shaped the manner in how one knows the world as it is. A plethora of technological advancements occur daily in a way that imagining the world without technology almost sounds ghastly. The emergence of technology has put all sectors on a path of having to abandon their conventional way of operating. New technologies have shaped the execution of problem solving and decision making in the workplace. The FAS sector has not been spared from the escalation of technology’s existence. Digital transformation has compelled organisations to capacitate their employees or risk being left behind. The 4IR with its digital transformation has not been granted the same attitude as there has been a backlash from others due to the fear of technology taking over the tasks which were previously conducted by humans. However, the little existing evidence suggests that humans will need

to collaborate with technology to advance each of their strengths and compensate for their shortfalls. It is noteworthy that technology exists to make life simpler for humans and not to deprive them of executing their tasks. Previously, one of the top requirements for a job in finance was the ability to crunch numbers, which is no longer the case as advances in technology have changed that. Technology related change drivers such as Artificial Intelligence (AI), ChatGPT etc. AI has the potential to revolutionize corporate business operations by automating repetitive and time-consuming tasks, enabling companies to focus on fundamental aspects such as, strategic initiatives.

There have been significant developments by AI in finance departments, particularly in fraud detection, finance analysis, and risk management (Ribeiro, 2023). It is an undeniable fact that through the emergence of technology some occupations have seen redundancy and a downwards spiral. Research has shown that in the next 10 years some will not be in existence as they have been eliminated. For some the tasks have been simplified as there is work which has been automated. Furthermore, individuals with the requisite skills of digitisation have become sought after as they represent what the future world requires. This has prompted the government and institutions of learning to be on par with the changes that take place. In keeping abreast with the continuous changes which take place, organisations, institutions of learning and organisations like FASSET are required to have programmes which respond to the changes brought about by technology.

In responding to this change driver of note the capacitation needs to occur from grassroots level to drive for a well capacitated pipeline. Some schools have grabbed the bull by its horns as they have introduced subjects which capacitate learners with the advancement of technology. These subjects range from coding, systems development, programming etc. Tracy Short who is a COO of multinational technology company further stated that, “To make the 4IR a reality and realise its potential to take South African industries to the next level, a good pipeline of people with the right skills are required”. FASSET as an intermediary between education and the workplace has launched programmes which respond to the emergence of technology. Some of these programmes range from digital skills programmes. Such a programme allows for the transition to being in a space of technology to be swift. It is pivotal for FASSET to have these programmes as it propels the sector to cascading the long-term goals of the 4IR.

In responding to this change driver FASSET can align itself to national and legislative frameworks which cannot be in silos from the sector’s advancement. As the NSDP 2030 states that it seeks to ensure that South Africa has adequate, appropriate and high-quality skills that contribute towards economic growth, employment creation and social development FASSET

and its stakeholders such as employers in the sector have taken this mandate as a mandatory one as they continue to launch programmes which advocate for the advancement and capacitation of technology.

SECTION THREE: METHODOLOGY

3.1. Introduction

This chapter focuses on the research method that was used to conduct this study. It provides and describes the research method used, including the ethical consideration applied to ensure integrity of this research report.

This research is a review paper of the past five SSP publications. The primary focus is on the technological change drivers and implication on occupational trends changes in the FAS sector.

3.2. Research Design and Research Approach

The research design is defined as the analytical and methodical planning that directs the research project (Nayak and Singh 2015:61). This means that a research design outlines how the research study will be carried out. Nayak and Singh (2015) further argue that the design usually results from explaining a general scientific model into varied research problems. In pursuit of this review report, document analysis was chosen as an approach through which this report will be undertaken.

While research design is a planned approach to given research, it may in some instances undergoes many changes and modifications as the study progresses and insights into it deepen, nevertheless, it cannot shift very swiftly from the original idea.

As a starting point, a wide range of literature reviews was carried out to explore the 4IR discourse. A look into global literature pertaining to the impact and implication of 4IR to skills development and planning.

This review report has been conducted using purely the qualitative approach, that is a focus on FASSET four past publications of Sector Skills Plans. This methodology was chosen as it best suits exploring existing changes that are brought by the rise of 4IR. In this report, qualitative in-depth analysis of SSP was conducted. A combination of documents and global literature review helped us to cross-validate the information and avoid biases that tend to come with the fact that interviews are subjective techniques to collect data.

3.3. Collection Procedures: Data sampling, Sample Method and Sample Size

The purposeful sampling technique was employed. We chose this type of data collection procedure as it is aligned to nature of this report. Generally, a researcher cannot take the whole group and make it participants in the study unless is a country study in which every member of a society must be studied. Consequently, documents to be reviewed were carefully selected to respond to research questions and research objectives based on usability as they aligned to the period to be reviewed.

3.4. Data collection instruments

Data collection instruments refer to all the research data collection tools that are used for the study at a point in time. In this study, we reviewed the past FASSET five SSP publications.

3.5. Data analysis

The nature of this study as proclaimed earlier it is qualitative research approach focusing mainly on the analysis of FASSET SSP publications over the past five years.

3.5. Ethical considerations

No requirement for ethical consideration for this study as we conducted the review of our own SSP.

3.6. Limitations of the study

This study has two possible limitations. First, definitions of what skills mean are very complex depending on the context that it is referred to. Second, the study was conducted on pre-selected documents.

As indicated earlier in this chapter, using documents as a unit of analysis have limitations as well given that they are generally narrowed in nature.

SECTION FOUR: FINDINGS AND ANALYSIS FROM THE PAST FIVE YEARS FASSET SECTOR SKILLS PLANS PUBLICATIONS

4.1. Introduction

This section presents the sample of findings aligned to fourth industrial revolution broadly, digital skills penetration as presented in the past five FASSET SSPs. The section begins with the 2019 SSP publication and finalise with the 2023 publication. Linking the general findings of general technological changes with the sectoral priorities occupations and interventions is done in order to illustrate the extent to which technological changes have impacted the nature of occupations that are sort after or high in demand in the Finance and Accounting Services sector.

4.2. 2019 Sector Skills Plan

Technology has advanced rapidly over the last few decades, and its use has had significant impact on the nature of work across industries. The latest wave of technological advancement is termed the 4IR which involves a combination of technologies such as Artificial Intelligence (AI), automation, biotechnology, nanotechnology, amongst others. Drivers of the 4IR include simulation, the internet of things, advanced robotics, augmented reality, additive manufacturing, big data analytics and cybersecurity[4]. Artificial intelligence is an umbrella term that covers many technologies developing at different rates (KPMG, 2018). These technological advancements have seen workers across different disciplines fearing the unknown and more specifically questioning their roles after implementation of these new technologies (Husain Coovadia, 2019). Although it is impossible to predict with certainty the changes that will come about, a broad picture can be formed from practical examples currently being experienced.

According to the South African Institute of Chartered Accountants (2019), the accountancy profession will evolve significantly over the period up to 2025. The spread of digital technologies and its impact on business will transform the practise of accounting and the competences that professional accountants require. Rather than replacing the role of accountants, stockbrokers, company secretaries, tax practitioners, financial advisors and investment analyst as some suggest, AI technology will transform the role and duties these professionals perform.

[4] https://mg.co.za/article/2017-12-15-00-fourth-industrial-revolution-is-upon-us-is-south-africa-ready

The rise of automated trading and “robo-advisors” has disrupted the stockbroking and financial advisory business while smart software and systems have impacted the way accountants and bookkeepers conduct their business. Smart software and systems will replace manual work (such as bookkeeping), automate complex and multifaceted processes, and support the trends towards outsourcing some services and repatriating others. This change then requires accountants, auditors, and many other professionals in the financial field to stay abreast of the changing technology and the associated business risks.

Data security is also becoming a crucial issue and all businesses must introduce additional measures and controls to safeguard data security and hedge against cyber-crime and risk of data fraud.

Because so much is likely to change, and because the changes may not happen evenly or in a logical and predicable manner there is going to be a great deal of uncertainty and stress. When change occurs in an unplanned and poorly managed manner it can be very disruptive and damaging. The task of managing change will require new skills sets amongst managers and business owners.

Table 4.2a below shows different occupations that were reported by companies registered as FASSET skills levy payers. More than 1100 companies participated in the WSP/ATR data submission in 2019 SSP publication. This is notable small number compared to +9000 companies registered as FASSET skills levy payers. The results of the 2019 SSP are compelling however as they confirmed through the focus group sessions, that without a doubt concurred with findings.

Of the ten (10) listed occupations, about three (3) were technology based, representing 30%. It noteworthy that finance related remained high on the listed, while a mixture of other occupations, including organisational risk practitioners and tax professionals came through.

Table 4.1a: Sectoral Priority Occupations - 2019 Publication of Sector Skills Plan Publication

Occupation Code	Occupation	SPECIALISATION/ ALTERNATIVE TITLE	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
2017 - 241104	External Auditor	Forensic Auditor / Investigator	Bursaries	7 & 8	Y	1 387	308
			Learnerships	7 & 8	Y		324
			Bridging Programmes	7 & 8	Y		363
			YES HET Work Programme	7 & 8	N		109
			Learner Employment Grant	7 & 8	N		36
			Professional Body Qualifications and Designations	7 & 8	Y		90
2017-121101	Finance Manager		Bursaries Professional Body Qualifications and Designations	6 – 8	Y	62	60
2017-251101	ICT Systems Analyst		Bursaries	7	Y	87	50
			Learnerships	5, 6 & 7	Y		20
			Bridging Programmes	7	Y		10
2017-252101	Database Designer and Administrator	Database Administrator	Bursaries	6 – 8	Y	296	80
			Bridging Programmes	6 – 8	Y		95
			YES HET Work Programme	6 – 8	N		28
			Learner Employment Grant	6 – 8	N		94

Occupation Code	Occupation	SPECIALISATION/ ALTERNATIVE TITLE	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
2017-241107	Financial Accountant	Company Accountant	Bursaries	7 & 8	Y	120	50
			Bridging Programmes	7 & 8	Y		59
			YES HET Work Programme	6 – 8	N		18
2017-242208	Organisational Risk Manager	Risk Compliance Manager	Bursaries	6 – 8	Y	100	67
			Learnerships	6 – 8	Y		74
			Bridging Programmes	6 – 8	Y		49
			Learner Employment Grant	6 – 8	N		5
			Professional Body Qualifications and Designations	6 – 8	Y		50
2017 - 241103	Tax Professional	Tax Analyst	Bursaries	6 – 8	Y	50	31
			Learnerships	6 – 8	Y		33
			Bridging Programmes	6 – 8	Y		37
			YES HET Work Programme	6 – 8	N		11
			Learner Employment Grant	6 – 8	N		4
2017-251201	Software Developer	Software Designer	Bursaries	3 – 6	Y	104	28
			Learnerships	3 – 6	Y		30
			YES NSC Work Programme	3 – 6	N		150

Occupation Code	Occupation	SPECIALISATION/ ALTERNATIVE TITLE	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
			TVET Work-Based Experience	3 – 6	N		80
			Professional Body Qualifications and Designations	3 – 6	Y		45
2017-241301	Financial Investment Advisor	Financial Agent	Bursaries	6 – 8	Y	65	18
			Learnerships	6 – 8	Y		21
			Bridging Programmes	6 – 8	Y		21
			YES HET Work Programme	6 – 8	N		6
2017 - 241101	Accountant		Bursaries	6 – 8	Y	550	200
			Learnerships	7 & 8	Y		150
			Bridging Programmes	6 – 8	Y		100
			YES HET Work Programme	6 – 8	N		50
			Learner Employment Grant	N/A	N		50
			Professional Body Qualifications and Designations	5 – 8	Y		50

Source: (FASSET 2019)

4.2. 2020 Sector Skills Plan

Following the pandemic, the FAS sector needed to invest in seamless organisational structures and increased technological connectivity to enable business continuity. Many personnel across sub-sectors were not able to adapt to working from home, due to lack of tech savviness and poor communication skills, which is more evident through virtual and online platforms. This made client interactions difficult and slowed down business. The onus is on organisations to prepare personnel to be flexible and adaptable, particularly in the advent of the 4IR. In addition, the sector must adopt digital communication strategies, re-skill and upskill personnel, equip management with crisis management skills, and normalise virtual interaction such as Zoom, Skype, and Microsoft Teams. Business in the sector will suffer without this adjustment. Clients' portfolios and investments still need to be managed, securely and with confidence, more so during a disrupted financial market.

The accountancy profession needed evolve significantly due to automation, artificial intelligence (AI), the Internet of Things (IoT), blockchain and cloud computing (Jooste, 2019). The spread of digital technologies and its impact on business transformed the practise of accounting and the competencies that professional accountants require. The full integration of technology and 4IR systems lessened human intervention over time for the financial and accounting services industries (Jooste, 2019). The 2020 Sector Skills Plan noted the following implication for skills planning: Workers needed to be virtually competent, and industry must undergo digital transformation. Consequently, more training to capacitated employees become very important.

Financial technology caused dramatic evolution throughout the industry and required the development of new skills sets for existing occupations and newer or future occupations as noted on the Table 4.2b below that there was somewhat significant number of occupations needed by the sector that are technological aligned. It was also noted that, data security became crucial, all businesses must introduce additional measures and controls to safeguard data security and hedge against cyber-crime and risk of data fraud. As results there was suggestion of developing more cyber security practitioners for the FAS sector to respond to the need.

Automation of workflow and processes called for upskilling of back-office support and a reduction in staff headcount. Auditors with high-level ICT competencies grew to be valued in the sector. This implied that not only are Auditors needed to be trained on auditing competencies, but further strides are to be undertaken to ensure technological capability is impacted to these professionals. Auditors will have to embrace the advanced technologies helping them obtain both structured and unstructured data from clients. Investment analysts

and stockbrokers also needed more than just the fundamental and technical analysis skills but also digital technology skills. Accountants' roles are shifting from interpreting historical and transactional information to a more strategic advisory role.

Future accountants will increasingly need education in digital technology (including cloud computing and use of big data), and integrated reporting regulation.

Table 4.2a: Sectoral Priority Occupations and Interventions list, 2020 Sector Skills Plan Publication

SETA Name	Period	Occupation Code	Occupation	Specialisation/alternative title	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
FASSET	2021/22	241104	External Auditor	Forensic Auditor / Investigator	Bursaries	7 & 8	Y	1 038	250
					Learnerships	7 & 8	Y		100
					Bridging Programmes	7 & 8	Y		200
					HET Graduate Work Experience Programme	7 & 8	N		200
					Learner Employment Grant	7 & 8	N		100
					Professional Body Qualifications and Designations	7 & 8	Y		20
FASSET	2021/22	121101	Finance Manager		Bursaries Professional Body Qualifications and Designations	6, 7 & 8	Y	26	20
FASSET	2021/22	251101	ICT Systems Analyst		Bursaries	7	Y	38	10
					Learnerships	5, 6 & 7	Y		5
					Bridging Programmes	7	Y		620
FASSET	2021/22	252101	Database Designer and Administrator	Database Administrator	Bursaries	6, 7 & 8	Y	2 072	500
					Bridging Programmes	6, 7 & 8	Y		350

SETA Name	Period	Occupation Code	Occupation	Specialisation/alternative title	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
					HET Graduate Work Experience Programme	6, 7 & 8	N		450
					Learner Employment Grant	6, 7 & 8	N		75
FASSET	2021/22	241107	Financial Accountant	Company Accountant	Bursaries	7 & 8	Y	213	50
					Bridging Programmes	7 & 8	Y		50
					HET Graduate Work Experience Programme	6, 7 & 8	N		50
FASSET	2021/22	242208	Organisational Risk Manager	Risk Compliance Manager	Bursaries	6, 7 & 8	Y	7	2
					Learnerships	6, 7 & 8	Y		3
					Bridging Programmes	6, 7 & 8	Y		5
					Learner Employment Grant	6, 7 & 8	N		5
					Professional Body Qualifications and Designations	6, 7 & 8	Y		7
FASSET	2021/22	241103	Tax Professional	Tax Analyst	Bursaries	6, 7 & 8	Y	99	25
					Learnerships	6, 7 & 8	Y		30
					Bridging Programmes	6, 7 & 8	Y		20
					HET Graduate Work Experience Programme	6, 7 & 8	N		20

SETA Name	Period	Occupation Code	Occupation	Specialisation/alternative title	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
					Learner Employment Grant	6, 7 & 8	N		50
FASSET	2021/22	251201	Software Developer	Software Designer	Bursaries	3, 4, 5 & 6	Y	102	25
					Learnerships	3, 4, 5 & 6	Y		30
					NSC Work Experience Programme	3, 4, 5 & 6	N		35
					TVET Work-Based Experience	3, 4, 5 & 6	N		20
					Professional Body Qualifications and Designations	3, 4, 5 & 6	Y		85
FASSET	2021/22	241301	Financial Investment Advisor	Financial Agent	Bursaries	6, 7 & 8	Y	51	100
					Learnerships	6, 7 & 8	Y		50
					Bridging Programmes	6, 7 & 8	Y		80
					HET Graduate Work Experience Programme	6, 7 & 8	N		120
FASSET	2021/22	241101	Accountant		Bursaries	6, 7 & 8	Y	187	250
					Learnerships	7 & 8	Y		100
					Bridging Programmes	6, 7 & 8	Y		200
					HET Graduate Work Experience Programme	6, 7 & 8	N		200
					Learner Employment Grant	N/A	N		100

SETA Name	Period	Occupation Code	Occupation	Specialisation/alternative title	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
					Professional Body Qualifications and Designations	5, 6, 7 & 8	Y		20

Source: **(FASSET 2020)**

4.3. 2021 Sector Skills Plan

In the 2021 SSP publication, the general sentiment was that basic digital skills will be the new numeracy and literacy skills and that traditional occupations will shift where workers are required to take on multiple functions and tasks. The skills needed to fill these occupations also required hybrid skillsets which integrate technological/digital skills into existing roles. This meant that most professionals need to have ICT competencies.

Moreover, remote work required that professionals in the FAS sector adopt strong WFH ethics, privacy and confidentiality across occupation levels. Professional bodies indicated that FAS curricula should shift away from theory- and programme-based knowledge approaches towards competencies of technology, business acumen, and ethics and conduct. Normal pathways will not ensure work readiness for future workers. The diagrams below illustrate the future skills and occupations identified through focus groups with the industry.

Diagram 1: The nature of future and emerging occupations in the FAS sector

Diagram 2: Future and emerging skills in the FAS sector

The diagrams illustrate the occupational and skills changes facing the FAS sector in the upcoming period and for the next five to ten years, according to industry stakeholders. Because existing qualifications and skills sets are already in the supply pipeline, organisations must address emerging challenges sensitively and constructively, or they will feel the pressure to outsource or rely on fewer human resources in the long run. This will negatively impact both new entrants and the existing workforce. Some organisations in the sector have already in the past year employed strategies to support their workforce in the shift and adaptation of new demands and ways of work; citing that this is the best period for trial and error to circumvent future challenges.

Diagram 3: Advance Technologies supply impact

Table 4.3a: Sectoral Priority Occupations and Interventions list, 2021 Sector Skills Plan publication

SETA Name	Period	OFO Code	Occupation	Specialisation/alternative title	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
FASSET	2022/23	241104	External Auditor	• Forensic Auditor • Investigator	Bursaries towards Bachelor of Commerce in Accounting, National Diploma in Auditing and other	7 & 8	Y	897	250
					Learnerships	7 & 8	Y		300
					Bridging Programmes (articles towards Professional Designation)	7 & 8	Y		800
					HET Graduate Work Experience Programme	7 & 8	N		400
					Learner Employment Grant	7 & 8	N		400
					Professional Body Qualifications and Designations (including skills programmes and internships)	7 & 8	Y		530
FASSET	2022/23	242101	Management Consultant (to include 251101 ICT Systems Analyst)	• Business Analyst • Technology Development Coordinator • Operations Analyst • Commercial Analyst • Ecommerce Programme Manager • Efficiency Engineer • ICT Systems Architect • Systems Programmer	Bridging Programmes towards designation	6, 7 & 8	Y	171	480
					Learnerships	6, 7 & 8	Y		150
FASSET	2022/23	241106	Accountant in practice		Learnerships	6, 7 & 8	Y	88	90
					Professional Body Qualifications and Designations (including skills programmes and internships)	6, 7 & 8	Y		160

SETA Name	Period	OFO Code	Occupation	Specialisation/alternative title	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
FASSET	2022/23	121101	Finance Manager (to include 241102 Management Accountant*)	• Chief Accountant • Chief Financial Officer • Budgeting Manager • Account Systems Manager • Cost Accountant • Project Accountant • Budget Accountant	Bursaries toward Bachelor of Commerce	6, 7 & 8	Y	92	80
					Professional Body Qualifications and Designations (including skills programmes and internships)	6, 7 & 8	Y		170
FASSET	2022/23	241107	Financial Accountant (to include 241101 General Accountant*)	• Company Accountant • Corporate Accountant • Business Group Accountant • Performance audit manager • Debtors Manager • Bank Accountant	Bursaries toward Bachelor of Commerce in Accounting or Accounting Science	6, 7 & 8	Y	96	50
					Bridging Programmes	6, 7 & 8	Y		100
					HET Graduate Work Experience Programme	6, 7 & 8	N		30
					Professional Body Qualifications and Designations (including skills programmes and internships)	5, 6, 7 & 8	Y		70
					Learnerships	6, 7 & 8	Y		40
FASSET	2022/23	241103	Tax Professional	• Tax Analyst	Bursaries towards Bachelor of Commerce Degree, Post-graduate Diploma or Advance Diploma in Taxation and Accounting	6, 7 & 8	Y	49	20
					Learnerships	6, 7 & 8	Y		20
					Bridging Programmes	6, 7 & 8	Y		55
					HET Graduate Work Experience Programme	6, 7 & 8	N		20

SETA Name	Period	OFO Code	Occupation	Specialisation/alternative title	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
					Learner Employment Grant	6, 7 & 8	N		50
FASSET	2022/23	241301	Financial Investment Advisor (To include 241201 Investment Analyst)	• Financial Agent • Listed Securities Analyst • Investment Research Analyst	Bursaries toward Bachelor of Commerce	6, 7 & 8	Y	72	40
					Learnerships	6, 7 & 8	Y		50
					Bridging Programmes	6, 7 & 8	Y		125
					HET Graduate Work Experience Programme	6, 7 & 8	N		50
FASSET	2022/23	242211	Internal Auditor	• Audit Consultant • ICT Internal Auditor	Bursaries toward National Diploma, Bachelor of Commerce Degree and other.	7 & 8	Y	19	50
FASSET	2022/23	251201	Software Developer	• Software Architect • Software Designer • Software Engineer • ICT Risk Specialist	Bursaries	3, 4, 5 & 6	Y	10	10
					Learnerships	3, 4, 5 & 6	Y		10
					NSC Work Experience Programme	3, 4, 5 & 6	N		10
					TVET Work-Based Experience	3, 4, 5 & 6	N		160
					Professional Body Qualifications and Designations (including skills programmes and internships)	3, 4, 5 & 6	Y		20

SETA Name	Period	OFO Code	Occupation	Specialisation/alternative title	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
FASSET	2022/23	242207	Compliance Officer	• Financial Markets Compliance Officer • Compliance Officer (Financial Sector)	Bursaries towards Bachelor degree in Accounting, Business Science, Postgraduate Diploma in Compliance Management and other	6, 7 & 8	Y	16	10
					Learnerships	6, 7 & 8	Y		10
					HET Work-Based Experience	6, 7 & 8	N		10
					Professional Body Qualifications and Designations (including skills programmes and internships)	6, 7 & 8	Y		15

Source: (FASSET 2021)

4.4. 2022 Sector Skills Plan

The 2022 SSP publication proceeded with the same trend on technology. But what is unique with the 2022 publication is that occupations on the Sectoral Priority Occupations list returned to focus on accounting and finance related and included management consultants (see Table 4.4a below). The previous findings may have been an indication of over-stressed wave that came because of COVID 19. Second observation is that the reason could have been the fact that the industries have mostly likely stopped panicking and started utilised specialised external service providers to assist where there is technological skills gaps that they cannot meet.

The new technologies that have been introduced have had a direct impact, especially on problem-solving and decision-making in the workplace. Various short programmes need to be introduced to enhance the Information and Communications Technology (ICT) skills of employees in the FAS sector. It has been noted that digitisation has been a major force in the Information Technology (IT) sector more than it has been in the FAS sector. However, it hinders progress as people in IT end up occupying accounting responsibility though not having the basics that are required for Accountants.

Connectivity remains a major challenge because not all people have access to proper infrastructure where they reside. The emergence of the 4IR (digitisation, artificial intelligence, etc.) has also contributed to the escalation of Hard-To-Fill-Vacancies (HTFVs). That has been seen with the fact that previously, the top requirement for a job in finance was the ability to crunch numbers, which is no longer the case as advances in technology have changed that. Professionals with high-level ICT competencies (programming and coding) have grown to be valued and sought-after in the sector.

Applications (apps) and automated systems can now do the number crunching and as a result, firms are seeking candidates who can find meaning, trends, or patterns in data and apply those findings in a wider business context. Data science, data analytical skills, blockchain, and cloud computing are all important in the age of digital transformation and new entrants need to be equipped with these tools, while those already in the system need to be upskilled and reskilled for them to adapt. The programmes funded by FASSET remain relatively unresponsive to the needs of the 4IR in the short-term. Noting this, FASSET is partnering with providers that are at the upper end of 4IR technologies implementation. Training programmes responding to 4IR will be instrumentally aligned to short-term programmes such as Life-Long Learning.

FASSET is considering partnering with fellow SETAs like MICTSETA on initiatives that are on artificial intelligence and digital transformation in the era of 4IR that is upon the global market. MICT SETA has in collaboration with 4Sight Holdings and Mecer Inter-Ed, launched a skills development and youth employment programme which is spearheaded by 4Sight. The programme aims to provide young people with niche training in 4IR technologies, which happens to be a major change driver for FAS sector organisations comprising of aspects such as Artificial Intelligence, Cloud Computing, etc. Short (2022) who is the COO of 4Sight even stated that, “To make the 4IR a reality and realise its potential to take South African industries to the next level, a good pipeline of people with the right skills are required”.

Such projects going hand in hand with the National Development Plan vision 2030 which strives towards South Africa being an E-skilled economy.

Table 4.4a: Sectoral Priority Occupations and Interventions list, 2022 Sector Skills Plan publication

SETA Name	Period	OFO Code	Occupation	Specialisation/Alternative Title	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
FASSET	2023/24	241104	External Auditor	· Forensic Auditor · Investigator	Bursaries towards Bachelor of Commerce in Accounting, National Diploma in Auditing and other	7 & 8	Y	95	250
					Learnerships	7 & 8	Y		300
					Bridging Programmes (articles towards Professional Designation)	7 & 8	Y		800
					HET Graduate Work Experience Programme	7 & 8	N		400
					Learner Employment Grant	7 & 8	N		400
					Professional Body Qualifications and Designations: Learnerships towards achievement of professional designation and learnership linked to specific occupation	7 & 8	Y		530
FASSET	2023/24	242101	Management Consultant (To include 251101 ICT Systems Analyst)	· Business Analyst	Bridging programmes towards designation	6, 7 & 8	Y	119	480
				· Technology Development Coordinator					
				· Operations Analyst					
				· Commercial Analyst					
				· Ecommerce Programme Manager					
				· Efficiency Engineer					
				· ICT Systems Architect	Learnerships	6, 7 & 8	Y		150
				· Systems Programmer					
FASSET	2023/24	241106	Accountant in practice		Learnerships	6, 7 & 8	Y	18	90
					Professional Body Qualifications and Designations: Learnerships towards achievement of professional designation and learnership to specific occupation	6, 7 & 8	Y		160
FASSET	2023/24	121101	Finance Manager (To	· Chief Accountant	Bursaries toward Bachelor of Commerce	6, 7 & 8	Y	35	80
				· Chief Financial Officer		6, 7 & 8	Y		170

SETA Name	Period	OFO Code	Occupation	Specialisation/Alternative Title	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
			include 241102 Management Accountant*)	· Budgeting Manager	Professional Body Qualifications and Designations: Learnerships towards achievement of professional designation and learnership specific to the occupation				
				· Account Systems Manager					
				· Cost Accountant					
				· Project Accountant					
				· Budget Accountant					
FASSET	2022/23	241107	Financial Accountant (To include 241101 General Accountant*)	· Corporate Accountant	Bursaries toward National Diploma in Accounting Science or Bachelors Degree or Bachelor of Commerce Honours in Accounting or Accounting Science	6, 7 & 8	Y	58	50
				· Business Group Accountant	Bridging Programmes: Learnership and Internship programmes	6, 7 & 8	Y		100
				· Performance audit manager	HET Graduate Work Experience Programme	6, 7 & 8	N		30
				· Debtors Manager	Professional Body Qualifications and Designations: Learnerships towards achievement of professional designation and any specific to the occupation	5, 6, 7 & 8	Y		70
				· Bank Accountant	Learnerships	6, 7 & 8	Y		40
FASSET	2022/23	241103	Tax Professional	· Tax Analyst	Bursaries towards Bachelor of Commerce Degree, Post-graduate Diploma or Advance Diploma in Taxation and Accounting	6, 7 & 8	Y	24	20
					Learnerships	6, 7 & 8	Y		20
					Bridging Programmes	6, 7 & 8	Y		55
					HET Graduate Work Experience Programme	6, 7 & 8	N		20
					Learner Employment Grant	6, 7 & 8	N		50
FASSET	2022/23	241301	Financial Investment Advisor (To include	· Financial Agent	Bursaries toward Bachelor of Commerce	6, 7 & 8	Y	18	40
				· Listed Securities Analyst	Learnerships	6, 7 & 8	Y		50
				· Investment Research Analyst	Bridging Programmes	6, 7 & 8	Y		125

SETA Name	Period	OFO Code	Occupation	Specialisation/Alternative Title	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
			241201 Investment Analyst)		HET Graduate Work Experience Programme	6, 7 & 8	N		50
FASSET	2022/23	242211	Internal Auditor	· Audit Consultant · ICT Internal Auditor	Bursaries toward National Diploma, Bachelor of Commerce Degree, and other.	7 & 8	Y	16	50
FASSET	2022/23	251201	Software Developer	· Software Architect	Bursaries	3, 4, 5 & 6	Y	21	10
				· Software Designer	Learnerships	3, 4, 5 & 6	Y		10
				· Software Engineer	NSC Work Experience Programme	3, 4, 5 & 6	N		10
				· ICT Risk Specialist	TVET Work-Based Experience	3, 4, 5 & 6	N		160
					Professional Body Qualifications and Designations: Learnerships	3, 4, 5 & 6	Y		20
FASSET	2022/23	242207	Compliance Officer	· Financial Markets Compliance Officer	Bursaries towards Bachelor's degree in Accounting, Business Science, Postgraduate Diploma in Compliance Management, and other	6, 7	Y	4	10
					Learnerships	6, 7	Y		10
				· Compliance Officer (Financial Sector)	HET Work-Based Experience	6, 7	N		10
					Professional Body Qualifications and Designations: Learnerships towards achievement of professional designation and learnerships linked to specific occupation	6, 7	Y		15

Source: (FASSET 2022)

4.5. 2023 Sector Skills Plan

While the key skills change drivers are greatly influenced by a myriad of factors, the 4IR and digital transformation takes centre stage. The FAS sector has had to invest in coherent organisation structures and increased technological connectivity to enable business continuity. Furthermore, digital transformation has become a powerful democratising force, providing access to networks and markets for many more people and businesses around the world. Through the peak of the pandemic there was an acceleration for the implementation of the 4IR as employees and employers were subjected to working remotely and see more automation of work.

There have been fears that 4IR and digital transformation will increasingly take over complex decision tasks, leaving little room for human interaction. It has been noted that while these systems do not replicate human intelligence, astoundingly they produce outputs that are beyond par when compared to those of humans. This has brought about the debate of the systems bringing about the demise of certain professions in the FAS Sector. However, it is empirical that humans collaborate closely with technology in order to exploit each of their strengths and compensate for their weaknesses.

The new technologies that have been introduced have had a direct impact, especially on problem-solving and decision-making in the workplace. Furthermore, digital transformation has become a powerful democratising force, providing access to networks and markets for many more people and businesses around the world. Some companies have gone as far as capacitating software developers to meet with the demands of the 4IR and assisting consultants pertaining to addressing issues related to 4IR. The emergence of the 4IR has also contributed to the escalation of Hard-To-Fill-Vacancies (HTFVs). Previously the top requirement for a job in finance was the ability to crunch numbers, which is no longer the case as advances in technology have changed that. Technology related change drivers such as Artificial Intelligence (AI), ChatGPT etc. will be delved on.

The adoption of AI in finance and accounting departments has led to significant changes in the way businesses operate. AI has the potential to revolutionize corporate business operations by automating repetitive and time-consuming tasks, enabling companies to focus on fundamental aspects such as, strategic initiatives. AI technologies can provide insights which can come across as great tasks for humans leading to more informed decisions and improved efficiency.

There have been significant developments by AI in finance departments, particularly in fraud detection, finance analysis, and risk management (Ribeiro, 2023). Ribeiro (2023) further

argues that in fraud detection, AI is used to identify fraudulent transactions by analysing large amounts of data and identifying patterns that indicate potential fraud. Respondents further stated that this technology can identify fraudulent behaviour that may go unnoticed by humans leading to more accurate detection and prevention of fraudulent activity. AI is also used in financial analysis to analyse vast amounts of data and identify trends and patterns that may not be visible to humans (Ribeiro, 2023). It can further be said that this technology can provide valuable insights into market trends, consumer behaviour, and financial performance leading to more informed decision-making and improved business performance (ACPR, 2018).

AI is making significant changes in accounting departments, particularly in bookkeeping, financial reporting, and auditing. AI technologies can automate repetitive tasks, such as data entry, allowing accounting professionals to focus on more strategic initiatives. Several companies have expressed that there are more opportunities for accountants to create innovative new services and different organisational models, as well as serve entirely new markets and tap into fast-growing networks.

Importantly, while there are challenges to the accountancy profession as developments in AI empower and enable clients to obtain information and be more independent, the advantages offered by technology significantly outweigh the risks.

Stakeholders, especially those from big corporations, argued that intelligent systems assist accountants to provide more insight further along the value chain. More data, better predictions and more intelligent automation has enabled accountants to deliver more value, focus on forward-looking analysis and provide greater leadership to business. Some of the respondents stated that in a world of big data, these machine learning technologies will be vital to gaining insight from new and vast sources of data.

It is noteworthy that AI has made great strides in accounting departments, particularly in bookkeeping, financial reporting, and auditing. It could be argued that AI is a hinderance for the progression of professionals such as bookkeepers. However, it has assisted with automating repetitive tasks, such as data entry, allowing accounting professionals to focus on more strategic initiatives.

Companies have stated that Auditing has benefited from AI due to AI technologies having the capacity to analyse large amounts of data to identify potential errors or fraudulent activity which is a prerequisite for accurate and efficient audits. However, the implementation of AI systems favours the larger organizations compared to smaller organizations as more resources are required.

Table 4.2e: Sectoral Priority Occupations and Interventions list, 2023 Sector Skills Plan publication

SETA Name	Period	OFO Code	Occupation	Specialisation/Alternative Title	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
FASSET	2024/25	241104	External Auditor	· Forensic Auditor · Investigator	Bursaries towards Bachelor of Commerce in Accounting, National Diploma in Auditing and other	7 & 8	Y	282	250
					Learnerships	7 & 8	Y		300
					Bridging Programmes (articles towards Professional Designation)	7 & 8	Y		800
					HET Graduate Work Experience Programme	7 & 8	N		400
					Learner Employment Grant	7 & 8	N		400
					Professional Body Qualifications and Designations: Learnerships towards achievement of professional designation and learnership linked to specific occupation	7 & 8	Y		530
FASSET	2024/25	241106	Accountant in practice		Learnerships	6, 7 & 8	Y	98	90
					Professional Body Qualifications and Designations: Learnerships towards achievement of professional designation and learnership to specific occupation	6, 7 & 8	Y		160
FASSET	2024/25	242101	Management Consultant (To include 251101 ICT Systems Analyst)	· Business Analyst	Bridging programmes towards designation	6, 7 & 8	Y	119	480
				· Technology Development Coordinator					
				· Operations Analyst					
				· Commercial Analyst					
				· Ecommerce Programme Manager					
				· Efficiency Engineer					
				· ICT Systems Architect	Learnerships		Y		150

SETA Name	Period	OFO Code	Occupation	Specialisation/Alternative Title	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
				· Systems Programmer		6, 7 & 8			
FASSET	2024/25	242211	Internal Auditor	· Audit Consultant	Bursaries toward National Diploma, Bachelor of Commerce Degree, and other.	7 & 8	Y	73	50
				- ICT Internal Auditor					
FASSET	2024/25	121101	Finance Manager (To include 241102 Management Accountant*)	· Chief Accountant	Bursaries toward Bachelor of Commerce	6, 7 & 8	Y	51	80
				· Chief Financial Officer	Professional Body Qualifications and Designations: Learnerships towards achievement of professional designation and learnership specific to the occupation	6, 7 & 8	Y		170
				· Budgeting Manager					
				· Account Systems Manager					
				· Cost Accountant					
				· Project Accountant					
				· Budget Accountant					
FASSET	2024/25	241103	Tax Professional	· Tax Analyst	Bursaries towards Bachelor of Commerce Degree, Post-graduate Diploma or Advance Diploma in Taxation and Accounting	6, 7 & 8	Y	47	20
					Learnerships	6, 7 & 8	Y		20
					Bridging Programmes	6, 7 & 8	Y		55
					HET Graduate Work Experience Programme	6, 7 & 8	N		20
					Learner Employment Grant	6, 7 & 8	N		50
FASSET	2024/25	241301	Financial Investment Advisor (To include	· Financial Agent	Bursaries toward Bachelor of Commerce	6, 7 & 8	Y	42	40
				· Listed Securities Analyst	Learnerships	6, 7 & 8	Y		50

SETA Name	Period	OFO Code	Occupation	Specialisation/Alternative Title	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
			241201 Investment Analyst)	· Investment Research Analyst	Bridging Programmes	6, 7 & 8	Y		125
					HET Graduate Work Experience Programme	6, 7 & 8	N		50
FASSET	2024/25	242207	Compliance Officer	· Financial Markets Compliance Officer	Bursaries towards Bachelor's degree in Accounting, Business Science, Postgraduate Diploma in Compliance Management, and other	6, 7	Y	19	10
					Learnerships	6, 7	Y		10
				· Compliance Officer (Financial Sector)	HET Work-Based Experience	6, 7	N		10
					Professional Body Qualifications and Designations: Learnerships towards achievement of professional designation and learnerships linked to specific occupation	6, 7	Y		15
FASSET	2024/25	251102	Data Scientist		Bursaries towards a Bachelors Degree in Information Technology, Bachelor of Science: Information Systems, Bachelor of Science: Information Technology	7	Y	22	20
FASSET	2024/25	241107	Financial Accountant (To include 241101 General Accountant*)	· Corporate Accountant	Bursaries toward National Diploma in Accounting Science or Bachelors Degree or Bachelor of Commerce Honours in Accounting or Accounting Science	6, 7 & 8	Y	19	50
				· Business Group Accountant	Bridging Programmes: Learnership and Internship programmes	6, 7 & 8	Y		100
				· Performance audit manager	HET Graduate Work Experience Programme	6, 7 & 8	N		30
				· Debtors Manager	Professional Body Qualifications and Designations: Learnerships towards achievement of professional designation and any specific to the occupation	5, 6, 7 & 8	Y		70

SETA Name	Period	OFO Code	Occupation	Specialisation/Alternative Title	Intervention Planned by the SETA	NQF Level	NQF Aligned Y/N	Quantity Needed	Quantity to be supported by SETA
				· Bank Accountant	Learnerships	6, 7 & 8	Y		40

Source: (FASSET 2023)

SECTION FIVE: ANALYSIS OF SECTOR SKILLS PLANS TECHNOLOCAL CHANGE DRIVERS AND CONCLUSION

5.1. Introduction

This section presents the analysis of the SSPs findings of the 2019, 2020, 2021, 2022, and 2023. The key focus of the analysis is emerging 4IR trends as articulated in the SSPs and their implications for skills planning at FASSET. In addition, the section delves into the analysis of sectoral occupations trends hypothetical analysis of potential gas in filling of the sectoral occupations.

5.2. Evidence of Emerging Skills Trends due to 4IR as articulated on FASSET SSPs

Over the past 4 FASSET Sector Skills Plans, it is notable that technology-based occupations have appeared across these publications. One year that had more occupations which speak to advancements in technology in the sector is 2019. For example, on the 2019 SSP publications, of the 10 sectoral occupations listed, more than 4 occupations related to ICT while 7 were fragmented across hard core accounting, risk and management consultant. These numbers have slightly change over the publications of SSP post 2019. It seems though, the change in number of ICT based occupations within FAS sector is subject to various sectoral dynamics.

The following are emerging trends at institutional and employee level that are driving force and have implication for skills development:

- Seamless organisational structures are required.
- Increased internet connectivity is also essential.
- These are to ensure business continuity in the 4IR era.
- Different subsectors struggle to adapt to remote work.
- Personnel are not tech savvy and lack communication skills.
- This is more evident on virtual/online platforms.
- Businesses should train personnel to be flexible and adaptable.

Some of the proposed approaches based on findings of SSPs to deal with rising demands of the 4IR includes the following:

- Adoption of digital communication strategies.
- Upskilling and reskilling of personnel.

- Frequent use of online platforms (e.g., Microsoft Teams, Zoom, etc.) is needed.
- Equipping of management with crisis management skills.
- Data security measures need to be intensified as a result.
- Auditors need to grow ICT competency.
- Accountants need education in digital technology (e.g., cloud computing, etc.)

Occupations that have either emerged or whose demand has risen as a result of penetration of 4IR include:

- Software Developer.
- Programmer Analyst.
- Database Designer and Administrator.
- ICT Security Specialist.
- ICT Systems Analyst.
- Data Management Manager

5.3. Relevance of face-to-face work approach in the era of 4IR

There are times when digital communication just is not appropriate and as the Human Resources (HR) leader, it is your job to lead the way in helping employees understand this. When addressing a performance issue, letting someone go, giving a promotion, or seeking expert advice to solve a problem, face-to-face trumps digital communication.

At the end of the day, it is the people that make an organization successful and if communications are so bogged down by technology that human interaction is left behind, businesses will suffer long-term consequences. A balance between digital and personal communications is key.

Workfront CEO Alex Shootman believes in using multiple communication tools to lead a business while maintaining personal relationships. “If you want to be heard and understood — and lead modern work — you need to show genuine interest in others and share your messages generously rather than sparingly,” he said. To truly be successful in this modern age of constant, digital communication, HR leaders need to find ways they can use tools to their advantage and make sure their companies maintain a people-first culture.

Digital communications have made it possible for people to work more efficiently, increased employment opportunities, and allowed employees to transcend time and distance to collaborate across the world. Unfortunately, with these benefits comes the risk of diminishing the human touch that organizations desperately need to maintain employee morale, attract talent, safeguard privacy, and retain employees.

A few of the digital communications issues that diminish the human touch include:

- Distracting notifications.
- Increased room for misinterpretation.
- Making employees feel isolated and unfulfilled in their work.
- Increased risk of workplace contention as people say things digitally they wouldn't say in person.
- Lack of privacy in communications with clients, colleagues, and managers.
- Virtual barriers that inhibit relationship building.

Information overload leading to overwhelmed employees who miss important information. When the idea of automation was new, people worried "the robots would take over." That obviously has not happened and in fact, the opposite is true. Due to what is called "job polarization," technology has taken over mundane tasks that could be automated, making room for more high-value jobs that require human creativity, cognitive skills, and reasoning.

The biggest example of this is in the banking industry. With the invention of ATMs, we have not lost tellers as some feared, but these jobs developed into positions that are high-value and require human skills, like consulting with customers or selling products.

As digital communications make it easier to send quick messages, update project statuses, and even send automated responses and notifications, workers' time is freed up to interact where it counts — on a human level. Collaboration, brainstorming, customer service, and employee relations are all areas that can be enhanced as more time is available for human-first interactions.

You can maintain the human touch at your business by making digital tools work for you, not in place of you. Approaching digital communications as a support system, rather than the only system of communications, will keep it in check so that you can put people first.

When digital communications are happening 24/7, employees have the information they need exactly when they need it, and live status updates are available, in-person communications

will be enhanced because they can focus on what is important, leaving administrative communications to digital tools.

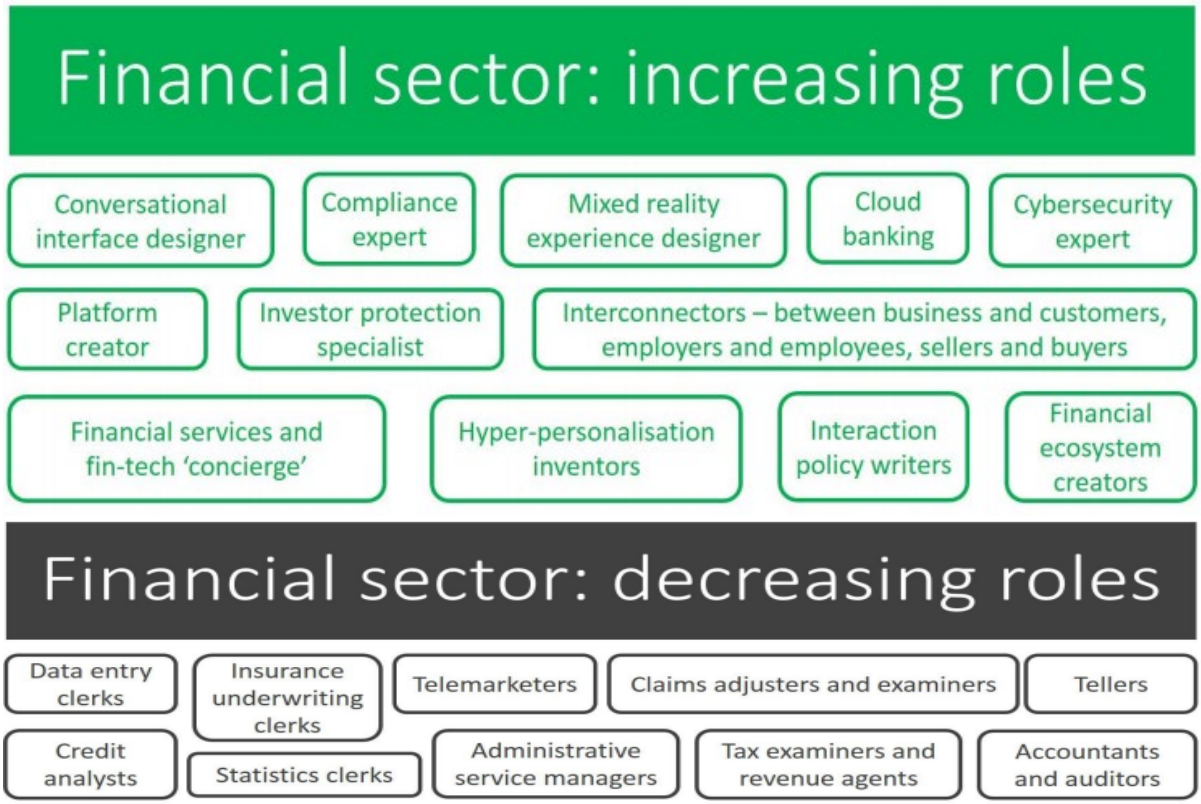
5.4. Skills Development Implication – Lessons from Five reviewed FASSET SSPs

During the past five of conducting focus group interviews for FASSET SSPs, it has been evidence that the sector is driven by a lot of data analysis, business analysis and ICT based occupations. We further investigated and probe this matter and found there was evidence else, for example, at JSE more than 60% of employees are ICT professionals and there were many other organisations where we could tell that there is more emphasis on big data, AI and other technologies. This is not to suggest that traditional accounting roles have lost value, yes some have particularly the clerical ones. But professional level Accountants who specialise in high end tax advisory, auditing and other specialisations are still required.

There is greater emphasis on ICT it is a proxy for understanding AI, big data and other technologies. Our stakeholders have emphasised over and over that FASSET needs to invest in early mathematics and science development. In addition, greater emphasise has been paced on communication skills including amongst other business level communication acumen. We have noted greatly, the call for focus on STEM field at school level in order to build pipeline for the university level FAS programmes. This requires massive scale intervention through programmes such as English, Maths, and Accounting of which FASSET is already funding it.

SECTION SEX: RECOMMENDATION

In the previous year, the beneficiaries funded under the Digital Skills Training Programme were 934 which was an overachievement from the set target of 500. Such shows that FASSET is responding accordingly to the changes which are taking place. Furthermore, ICT Hubs were developed by FASSET at TVET Colleges as a sign of their commitment to ensuring that a capacitated workforce is in the pipeline. Digitisation and digitalisation have led to the introduction of new occupations in the sector which are sought after. Some of these occupations are namely:



One of the recommendations drawn from the findings of these analysis is that significant investment on STEM fields subjects needs to be made. Early professional development is also a key important undertaken that has been driven by life-long learning programmes particularly designed around business communication. In addition, investment on ICT based programmes should remain core of bursary funding and FASSET need to conduct monitoring to ascertain how much of the bursary funding funds programmes such as computer science and information technologies.

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