Health and Welfare Sector
Education and Training Authority
HWSETA

Trend analysis of Hard-to-Fill-Vacancies

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ACCRONYMS AND ABBREVIATIONS

ATR	Annual Training Report
DHET	Department of Higher Education and Training
ERP	Enterprise Resource Planning
FET	Further Education and Training
HTFV	Hard to Fill Vacancies
HWSETA	Health and Welfare Sector Education and Training
IPAP	Industrial Policy Action Plan
NDP	National Development Plan
NGP	New Growth Path
NSDP	National Skills Development Plan
OIHD	Occupations in High Demand
OFO	Organizing Framework for Organizations
PIVOTAL	Professional, Vocational, Technical and Academic Learning
PSET	Post School Education and Training
PSETA	Public Service Sector Education and Training Authority
SDA	Skills Development Act
SDP	Skills Development Providers
SETA	Sector Education and Training
WSP	Work Skills Plan

EXECUTIVE SUMMARY

The HWSETA has been reporting priority occupations for the development of priority skills development in the Sector Skills Plan (SSP) according to the Skills Development Act (SDA) section 10 (1) (a). Up to the present moment, the HWSETA has been making use of a system called Enterprise Resource Planning (ERP) to collate and store WSP data since 2014. This data includes the Hard o Fill Vacancies (HTFVs) reported by employers on an annual basis. The data itself has only been reported annually within the SSP and has never been analysed in a trend context to answer some of the current challenges faced by the sector. This study aims to provide a more in-depth analysis of the trends in HTFV within the health, social and veterinary sector to check the transitions in HTFV from one year to another and as a collective of the three years (2018 to 2020).

The method used to analyze the population of HTFV is referred to as a trend analysis which covers a period of 3 years – 2018 to 2020, whereby the period 2018-2019 accounts for the period prior COVID-19 while 2020 accounts for the period during the pandemic. The study is also quantitative in nature and the unit of analysis is at occupational level being expressed as a quantum using HTFV as a proxy for occupational shortages. Although the data is collected at employer level, it is recorded at occupational level of the reported HTFV. The database used comes from the HWSETA (private sector) and the Public Service Sector Education and Training Authority (PSETA) (public sector). The former consists of all the private sector organizations that submitted their WSPs to the HWSETA over 2018 to 2020 while the latter comprise of all the public sector employers reporting to and submitting their WSPs to PSETA, while their line of SETA function falls within the health and social development sector.

The target population for the study was made up of a total of 2445 employers that submitted their WSPs for both private and public sector over the 3 years (2018-2020), which constitute only 7% of all the organizations registered with HWSETA (36375) as of 10 July 2021 from HWSETA ERP. As such, WSP submission data is not representative of all organizations registered with HWSETA. Consequently, the findings from the analysis of the HTFV over three years are indicative and not representative of the health and welfare sector occupational needs.

The key findings of the study showed that there was a noticeable decrease of HTFV from 2019 to 2020 which may imply that the health system responded drastically to meet the

occupational needs (the HTFV) during the COVID-19 crisis probably from special additional funds allocated for COVID-19 interventions. A decreasing trend on the share of Professionals was noted from 2018 to 2020 at 75% to 51% respectively. Technicians and Associate Professionals on the one hand indicated an increasing trend from 2018 to 2020 at 13% to 37% respectively. These trends predated the COVID-19 pandemic but were exacerbated by it. The overall (2018-2020) findings indicated that the three key reasons for HTFV were the required experience at 22%, followed by change in qualification (20%), and scarcity of required qualifications alone (16%). When disaggregated by sector (public vs private), change in qualification as the reason for HTFV was predominantly from the private sector while scarcity of people with experience and required qualifications was from public sector. In the main, the findings signal that occupational shortages stem from supply-side inadequacies.

The result suggests that there is general persistency in repeated occupational shortages overtime within the sector. Importantly, COVID-19 did not introduce new occupations within shortages. It can be concluded that the pandemic just worsened the shortages for some of the already existing occupational shortages.

CHAPTER 1: INTRODUCTION

This study considers the definition of specific terms used crucial to understand the context in which the words are being used in the entire document. The same words defined can be used in other studies differently hence it is important to establish clarity on how these terms are used in this work.

1.1 Definition of terms used in the study

Hard to fill vacancies (HTFV): A vacancy qualifies as hard to fill if an employer took 12 months or longer to find a suitably qualified and experienced candidate (*DHET, 2019*). However, in this study the HTFV is considered even if the employer has taken less than 12 months due to missing values from employer submissions.

Sectoral Priority occupation (PIVOTAL) List: This refers to a list of priority occupations identified by the sector through research as occupational shortages planned to be addressed by the sector through a variety of interventions in a specific year (DHET, 2019). PIVOTAL is an acronym which stands for professional, vocational, technical and academic learning programmes that result in qualifications or part qualifications that are registered on the NQF.

Occupations in High Demand (OIHD): Refer to those occupations that show relatively high employment growth based on past, present and future trends and that are currently in shortage. The concept of OIHD encompasses the idea of historical, current and anticipated occupational growth trends (including new and emerging occupations), occupational shortages and occupations associated with government strategic priorities (Gazette & Notice, 2020).

Scarce Skills: Refers to those occupations in which there is scarcity of qualified and experienced people, currently or anticipated in the future, either (a) because such skilled people are not available or (b) they are available but do not meet employment criteria (DHET, 2014).

Critical Skills: Refers to skills that are regarded, through labour market availability and analysis, to be critical for improvement in economic growth and within which certain projects and work could not be undertaken, as well as high-level skills that will enhance the skills pool in the economy which in turn will encourage and potentially accelerate in the economy (DHA, 2019).

1.2 Background

International trends suggest that skills shortage is a global phenomenon. Countries, employers and organisations worldwide continuously express their unhappiness regarding a shortage of skilled professionals in various sectors of their economic activities (Mateus, Allen-Ile, & Iwu, 2014). Understanding occupational dynamics and labour market requirements are vital to meeting the goals of the National Development Plan (NDP), the New Growth Path (NGP), and the Industrial Policy Action Plan (IPAP) (DNA Economics, 2020). Addressing scarce and critical skills through implementation of learning programmes is clearly referenced under the National Skills Development Plan (NSDP) as the role of Sector Education and Training Authorities (SETAs) on the supply side of skills development in South Africa (Ministry of Higher Education and Training, 2019). The White Paper for Post-School Education and Training (PSET) further emphasises that if the provision of education and training is to be better coordinated with the needs of the society and the economy, central information about skills needs is required.

The Department of Higher Education and Training (DHET) also has an important role to play in both identifying the key occupations that will support policy initiatives and improving the responsiveness of the PSET system to the skills needs of the economy. DHET therefore requires SETAs to identify sector priority occupations for the purpose of skills planning. SETAs engage in this process through the analysis of the hard to fill vacancies (HTFV) per specific sector which eventually yields a PIVOTAL list or Sectoral Priority Occupations list that provides a national indication of Occupations in High Demand.

The Health and Welfare SETA (HWSETA) follows a comprehensive methodology covering the health, social development and veterinary sub sectors across public and private institutions in producing its annual PIVOTAL list. The analysis is firstly based on the Work Skills Plans (WSPs) submitted to the HWSETA and the Public Service Sector Education and Training Authority (PSETA) database which provides a basic list of occupations in which HTFVs is experienced on each occupation. The HTFV may also arise due to several reasons amongst which include geographic factors, demographic factors, lack of funds and many others.

Although the methodology to identifying the PIVOTAL list is not entirely prescriptive, the next step involves ranking the HTFV according to the top 10 vacancies which become eligible for the Sectorial Priority Occupations and Intervention (SPOI) List (previously referred to as

PIVOTAL list) that the SETA can support. It is important to emphasize that the HWSETA prioritises more than the top ten vacancies under Sectorial Priority Occupations and Intervention (SPOI) List. The top ten vacancies in the SPOI list are for publication to DHET and the public for the purpose of accountability to the stakeholders showing that our interventions (resource allocations) are linked to the sectoral needs. The type and nature of the learning programmes support from the SETA depends on various considerations such as SETA funding available in a particular year and demand and uptake from employers and training institutions. Arriving at this list is also informed by stakeholders around the HTFV list take the form of interviews and engagements conducted with key respondents in the sector particularly providing clarification regarding the figures presented by employers in their WSP submissions (HWSETA SSP, 2020). This work is therefore meant to provide a holistic understanding of the hard to fill vacancies in South Africa for the health and social development sector over the period of 2019/20 to 2021/22.

1.3 Setting the scene and context of the study

The HWSETA has been reporting priority occupations for the development of priority skills development in the SSP according to the Skills Development Act (SDA) section 10 (1) (a). Up to the present moment, the HWSETA has been making use of a system called Enterprise Resource Planning (ERP) to collate and store WSP data since 2014. This data includes the HTFVs reported by employers on an annual basis. The data itself has therefore been reported annually within the SSP and has never been used in a trend context to answer some of the current challenges faced by the sector. It can also be easy to collect more data from employers in the form of surveys but the HWSETA has deemed it valuable to go through this historical data that already exists on the HTFV.

Just as an illustration, figure 1 below highlights the total number of HWSETA's HTFV reported between 2019/20 and 2021/22 WSP/ATR years accounting for years between 2018 and 2020 respectively. The latter refers to the actual years that the WSPs submitted accounts for through HTFV section that is reflective of the previous year. These figures analysed separately may not be enough to provide a clearer view regarding occupational shortages within the sector.

Figure 1: Total number of HWSETA's HTFV reported between 2018 and 2020 [1]

Source: HWSETA ERP

Nonetheless, what is clear from the above is that there was a drastic rise in the HTFV last year 2019 while 2020 experienced a decline. There could be different reasons towards the rise and fall in HTFV for these specific years but what's worth noting is that both years experienced an extension in WSP submissions with, 2019 given two months while 2020 was given a month's extension. Thus, the rise in HTFV seems to be directly influenced by the number of employers that submit the WSP in a particular financial year (see section data collection for more clarity).

1.4 Problem Statement

Given the dynamics within the South African labour market, and irrespective of the macro-economic conditions prevailing, most occupations have unfilled vacancies at any one point in time as a result of skills shortages (Mateus et al., 2014). This is also substantiated within the health and social sector where evidence is provided yearly on HTFV. We are not only interested in HTFV for their own sake but because the presence of hard to fill vacancies negatively impacts the performance and production of the workplace (Sutherland, 2010).

During these three years (2018-2020), South Africa has had increasing unemployment rates and jobless growth rates with the latest record high of unemployment of 32.6% in the first quarter of 2021. In the same quarter, the number of discouraged work-seekers increased by 6,9%, and the number of people who were not economically active for reasons other than discouragement decreased by 0,3% (STAST SA, 2021). This study problematizes the skills shortages as one of the key factors contributing towards the current state of increasing unemployment rates. This makes the analysis of sectoral skills shortages to inform planning and interventions from the supply-side crucial in addressing the unemployment, and lack of productivity in the economy.

[1] The actual years in which the WSPs were submitted for the HTFV is regarded as 2018, 2019 and 2020 which represent the WSP/ATR submission years as 2019/20, 2020/21 and 2021/22 respectively. For instance, 2019/20 accounts for the period of 2018 which begins from the 1st of April 2018 ending 31st of March 2019; 2020/21 accounts for the period of 2019 which begins from the 1st of April 2019 ending 31st of Marche 2020 while period 2021/22 accounts for the period 2020 which begins from the 1st of April 2020 ending 311st of March 2021. The entire report will therefore use 2018, 2019 and 2020 when referring to 2019/20, 2020/21 and 2021/22.

Although the SSP dedicates an analysis of the HTFV for each year of update, this is not done extensively exploring more variables associated with the existing HTFV overtime such as the level of skills requirements and occupational groups over time, the extent of skills shortages over time and locating employers that are being affected the most over time. It is from this regard that the HWSETA deems the trend analysis of the HTFV as imperative to have more in-depth directed interventions on skills shortages and their development. This will also allow an analysis of the HTFV trend as a transition from one year to another and as a collective for the three years.

1.5 Aims and Objectives

The aim of the study is to provide a more in-depth analysis of the HTFV within the health and social development as well as the veterinary sector for the Work Skills Plan (WSP) submissions and Annual Training Report (ATR) of the years 2019/20, 2020/21 and 2021/22. This will provide a more complete picture of what might be expected in the future given the trend, as opposed to only quantifying the annual HTFV for the purpose of sector skills interventions. This study will be guided by the following objectives:

Objectives

- To quantify the distribution of occupational shortages (HTFV) in the health and welfare sector
- To explore the skills levels associated with occupational shortages (HTFV) in the health and welfare sector
- To quantify the severity of occupational shortages in the health and welfare sector
- To ascertain the key reasons explaining the occupational shortages (HTFV) in the health and welfare sector
- To locate sub-sector, organizational type and size mostly affected by occupational shortages in the health and welfare sector

Research Questions

- What are the changes of occupational shortages (HTFV) in the health and welfare sector between 2018 and 2020?

- At what skills levels (NQF, NSDS skill level, occupational groups) are the occupational shortages taking place the most between 2018 and 2020?
- What is the extent (duration of months) of need for occupational shortages taking place between 2018 and 2020?
- What are the key reasons for the occupational shortages taking place between 2018 and 2020?
- At what sub-sector levels are the occupational shortages taking place the most between 2018 and 2020?
- Which organizations (type and size) are the occupational shortages taking place the most?

CHAPTER 2: LITERATURE REVIEW

2.1 Sectoral Profile

The HWSETA, established in terms of the skills development legislation of 1998, includes a range of economic activities from five sections of the Standard Industrial Classification of all Economic Activities (SIC) i.e. Manufacturing (C), Wholesale and retail trade (G); Professional, scientific and technical activities (M), Public administration and defence and compulsory social security (O) and Human health and social work activities (Q). The table below shows the applicable SIC Codes and their descriptions.

Table 1: SIC codes and description

Section	SIC Code	SIC Description
C	32500	Manufacture of medical & dental instruments & supplies
G	47620	Retail sale of pharmaceutical & medical goods, cosmetic & toilet articles in specialised stores
M	75000	Veterinary activities
O	84121	Regulation of the activities of providing health care, education, cultural services & other social services at National Government level
	84122	Regulation of the activities of providing health care, education, cultural services & other social services, at the Provincial Government level
	84123	Regulation of the activities of providing health care, education, cultural services & other social services, at the Local Government level
	84220	Administration, supervision & operation of health activities for military personnel in the field
Q	86100	Hospital activities
	86201	Medical practitioner & specialist activities
	86202	Dentist & specialist dentist activities
	86209	Other medical & dental practice activities
	86900	Other human health activities e.g. nurses, paramedical practitioners, medical laboratories, blood banks, ambulances
	87100	Residential nursing care facilities
	87200	Residential care activities for mental retardation, mental health & substance abuse

Section	SIC Code	SIC Description
	87300	Residential care activities for the elderly & disabled
	87900	Other residential care activities e.g. orphanages, temporary homeless shelters
	88100	Social work activities without accommodation for the elderly & disabled
	88900	Other social work activities without accommodation e.g. welfare, guidance, adoption.

Source: HWSETA SSP 2021

The sector served by the HWSETA is unique, extensive and spans the human- and animal health systems as well as the social development and social services systems. There is also considerable overlap with several other SETAs such as the national and provincial departments of health and social development that submit WSPs to the PSETA. Although not all employers of the Health and Welfare SETA submit their WSPs annually, the trend analysis of the HTFV represent all those employers that have made submissions for both the public and the private sector. The account of the SIC Code distribution is not evenly distributed with the health sector accounting for more of the distribution compared to the social and veterinary sector.

2.2 Purpose of Sector Skills Plan (SSP) in identifying the HTFV

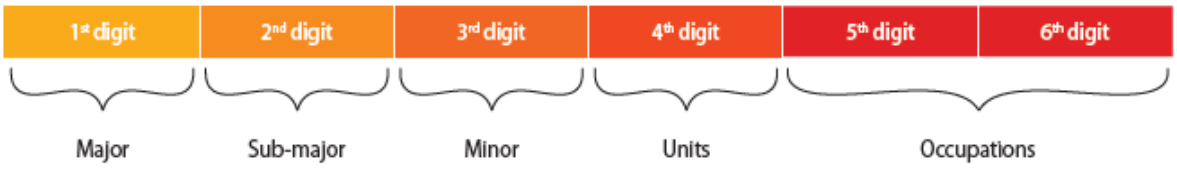
SETAs are required in terms of the Skills Development Act (SDA) section 10 (1)(a) to make submission of the 5 Year Sector Skills Plans (SSP) and Annual Updates since it was formally adopted in August 2005 (DHET, 2013). The SSP seeks to identify the skills priorities within the sector; provide an overview of the skills gaps and outline the interventions aimed at addressing these skills shortages. An equally important source of information to the development of the SSP is the Work Skills Plan (WSP), which provides SETAs with employee profiles, skills needs and development interventions. The SSP then uses this information to address the sector skills need through the development of PIVOTAL interventions. Specifically, the Occupational Shortages and Skills Gaps – Chapter 3 of the SSP – has enabled the analysis of employer VHTF to produce the PIVOTAL skills list. This list is further translated at a national level for the identification and annual publication by DHET, of a national Occupations in High Demand (OIHD). This means that although the WSP is developed at an organisation level to address in house skills development needs, the WSP has an important purpose in informing skills needs at a sector level – SSP and at a national level -OIHD.

The Occupations in high demand (OIHD) refer to those occupations that show relatively high employment growth based on past, present and future trends and that are currently in shortage. The concept of OIHD encompasses the idea of historical, current and anticipated occupational growth trends (including new and emerging occupations), occupational shortages and occupations associated with government strategic priorities. The List will be reviewed every 2 years, unless it is deemed necessary to do so earlier (Gazette & Notice, 2020). The Gazette highlights that this list has been compiled to support planning processes in the PSET system by:

- serving as a signpost for enrolment planning at universities, TVET Colleges and other education and training institutions
- signalling the need for the development of new qualifications, especially to respond to new and emerging occupations and skills needs
- guiding and informing resource allocation processes and
- informing career guidance for learners and work-seekers.

The presentation of the OIHD is done based on the OFO, which presents a significant enhancement to the HTFV for skills development planning and implementation in that it allows the monitoring of skills supply and demand according to classification of occupations into occupational groups. Specifically, the OFO sets the base to linking various occupations to specific skills and assists in identifying further training needs. Each occupation is given a six-digit code with each digit in the code referring to its respective grouping, which can be most easily understood using the figure 2 below:

Figure 2: Meaning of the six digits in the OFO

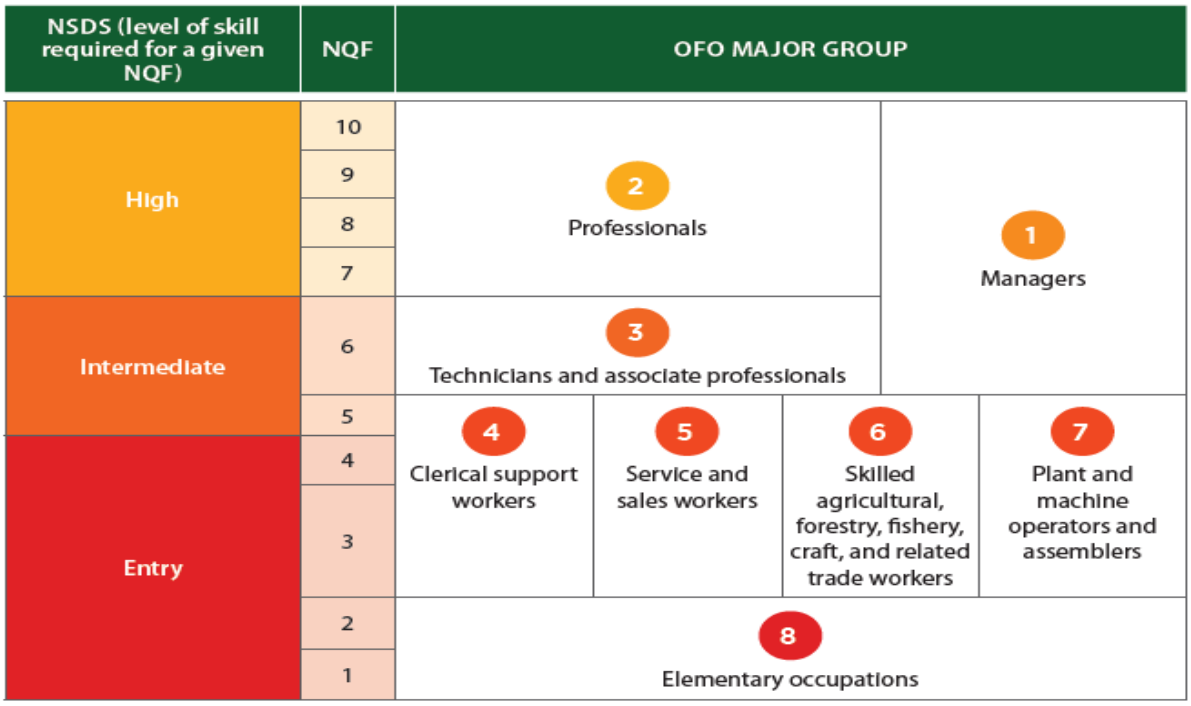


Source: (DNA Economics, 2020)

The major group indicates the skill level and the broad area of specialisation, while the sub-major group indicates the broadly stated skill specialization and the minor groups are on the basis of the less broadly stated skills specialisation (Guideline & Codes, 2014). The major groups can further be mapped with the National Qualifications Framework (NQF) levels as presented in Figure 3 below. Figure 3 illustrates that as the major groups move from 1 to 8, the NQF levels decrease. What this alignment means for the HWSETA is that the identified

HTFV can be grouped according to NSDS level of skill required for specific occupations. This further means that directed learning programmes must be according to the specific NQF level to ensure curbing of skills shortages.

Figure 3: Mapping the OFO Major group with NQF level



Source: (DNA Economics, 2020)

2.3 Reasons for the HTFV

There exists an underlying assumption that any existing labour market rigidities stem from supply-side inadequacies and are therefore independent of demand-side factors. Whilst it is probable that supply-side shortages account for a significant proportion of unfilled vacancies it is equally plausible that frictional mismatches deriving from demand-side factors such as employer practices and /or firm level characteristics also contribute to the incidence of vacancy problems. This chapter looks at all angles which may explain why employers continue to have unfilled vacancies irrespective of constant efforts of recruitment.

According to (Myers, 1966), the simultaneous existence of unfilled jobs and unemployed workers — coupled with increased duration of job vacancies refers to positions being “hard-to-fill” — as indicators of structural change and signs of a very real “maladjustment” in the labour market. Sutherland (2010) highlighted that hard to fill vacancies may arise due to several distinct reasons, which can be subdivided into two categories: the quantity of applicants and/or the quality of the applicants. Few individuals may apply for vacancies in

cases whereby the nature of the job (such as wages, conditions of employment, and/or location of the firm) does not suit the demands of the labour market. Hard to fill vacancies may arise for quality-related reasons; that is when the applicants have deficiencies in related experience and/or qualifications (Sutherland, 2010).

Sutherland (2010) further argues that conventionally, when the hard to fill vacancy has its origin in candidates lacking in experience, qualifications and/or skills, this is deemed to be a 'skills shortage'. 'Skills shortages', therefore, are a potential policy problem which has its origins in the external labour market. Myers conducted a survey in the United States (US) and found experience requirements and skills as a deficiency for job vacancies with 30 percent of employers requiring three or more years of experience. Nevertheless, the survey also found that some employers tend to inflate the number of unfilled positions not for present needs but rather in accordance with their experience of the length of time needed to hire workers, and the composition of vacancies by worker requirements distorted.

Another employment survey conducted by (Bonner, 2001) in Ireland confirm some of the above findings regarding the relevance of skills towards recruitment. Less than 40 per cent of relevant firms that participated in the survey expressed any difficulty in recruiting non-graduate technical support staff or new graduates thus providing a preliminary indication that educational supply is relatively adequate; however, the recruitment of graduate project leaders and project managers / strategic planners seems to pose the greatest problems with 45 per cent and 55 per cent of respondents respectively describing these types of workers with more skill as very difficult to recruit. The (OECD, 2014) concluded that in addition to an inadequate supply of qualified applicants hard to fill vacancies at the professional level were related to low relative wages and a preference amongst employers for candidates with a proven track record.

Pollard et al (2015) identified labour market competition within the sector and other economic sectors as a factor contributing towards unfilled vacancies. The argument is that the difficult economic climate has made it difficult for employers to afford the best employees with required skills. Research on *Market Labor and Youth Capacity Assessment* (2016) found that in Lebanon, 57 percent of 76 employers interviewed indicated that increasing starting wages was a coping strategy to attract more applicants. Coming to South Africa, Wörgötter & Nomdebevana (2020) report that the public sector wages have been declining as compared to the private sector and this has had a negative effect on employment and productivity in the sector. Dadam (2017) further adds that the high wages within the South African private sector creates an incentive for private sector applicants to demand higher salaries and it is more pronounced for more skilled workers than those unskilled. This is concerning considering the composition of skill level in South Africa which constitutes less of the skilled labour force

although the proportion seems to have improved between 1994 and 2014 as highlighted in table 2 below.

Table 2: Composition of employment by skill level

Skills level	Occupation	1994 (%of total)	2014 (% of total)	Change
Skilled	Manager, Professional	20.6%	25.2%	+4.6%
Semi-skilled	Clerk, Sales &Services	47%	46.6%	-0.8%
low-skilled	Elementary, Domestic worker	32.4%	28.5%	-3.9%

Source: Stats SA Quarterly Labour Force Survey (2014)

Concerns about the South African skills shortage have been associated with the apartheid system according to Akoojee and McGrath (2007), where skills were profoundly racialised and gendered, which left Blacks, particularly female blacks in complete denial of access to skills development. Later, Breier and Erasmus (2009) concurred by placing the blame on skills shortage on education system that still suffers from decades of neglect and disfunction from the Apartheid when black people were educationally underprivileged. Rasool and Botha (2011) specifically put emphasis on the low education standards, inadequate provision for early childhood development, declining grade 12 pass rates, declining enrolments at FET colleges, lack of resources, under-qualified teachers, weak management, and poor teacher morale that does not generate the necessary skills needed by the country.

According to Kraak (2004), another shortcoming in education and training towards skills is the inefficiency of the FET sector in South Africa. Students who have completed Grade 12 are expected to study courses that are on Grade 10 and Grade 11 levels. These qualifications are lower than their highest level of achievement and their levels of learning are regressing. In many ways, such a skills system mirrors the education system that prioritizes the 'paper chase' for qualifications while employers value both qualification and competence. Despite this additional vocational qualification, employment opportunities are still very low. Only 33.6% of FET graduates find employment (Kraak, 2004). These challenges further hamper the transition of learners to post-school education

Adding to the above problems, the Higher Education South Africa found that in 2011 only one third of total of academic staff members in South African higher education hold PHD. Fisher and Scott (2011) are of the view that these skilled academic staff is not is not evenly distributed across the higher education sector, indicating that the few PHD holders are concentrated in a few institutions within the South African higher education academy. This has then resulted in importing of skilled academic personnel from other countries, which according to Daniels (2007) presents a short-term solution to the problem of skills shortages in the country.

In other perspectives, there are concerns around the reliability and validity of labour market data in South Africa. As reported by McCord and Bhorat (2003), poor labour market information systems and outmoded occupational forecasting models may exacerbate skills shortages. The quality of labour force data in South Africa is said to be poor and those of occupational statistics are even poorer. Van Aardt (2009) concurs that, in many situations, these statistics are available only in highly aggregated forms and contain broad categories like senior officials, managers, professionals and technicians. Although the study will still explore these variables in understanding occupational shortages that in essence are a proxy to skills shortages within the health sector, this work will also cover a range of other possible levels that could be useful for skills development interventions such as the severity of occupational shortages, the extent of occupational shortages, the levels of education and the sub-sectoral classification with SIC codes.

Because of the skills shortages in South Africa, there is evidence that employers are finding it difficult to find appropriate candidates for different occupations. A study conducted by the Solidarity Research Institute (SRI) (2008) found that 81% of South African companies struggle to find appropriate staff, with 76% having difficulty finding employment equity candidates, in particular. According to SRI, the evidence lies in the shortage of chartered accountants, IT specialists, sales and marketing personnel, and scientists. Also, according to SRI (2008), both the South Africa Institute of Architects and the Institute of Draughting are also experiencing a shortage of skilled professionals. As SRI (2008) indicated, the Human Sciences Research Council found that there is a shortage of between 350 000 and 500 000 qualified people to fill managerial and technical positions (SRI, 2008). These findings and many other confirm the existence of occupational shortages across different sectors. Exploring these shortages using a trend analysis for the health, social and veterinary health sector is valuable in understanding the different levels of skills that are being affected the most.

CHAPTER 3: RESEARCH METHODODLOGY

This chapter is aimed at providing an understanding of how the HTFV trend will be analysed. A discussion of the research methodology used is firstly covered then follows the data collecting process, datasets used and what is entailed in the datasets. Next will be discussions on the target population and sampling method used followed data analysis.

3.1 Research Methodology and design

This study makes use of quantitative research methodology to answer the research questions. Apuke (2017) recognises quantitative research methodology as a method that deals with quantifying and analysis variables to get results. Quantitative research method is more precise for this study given that the data that will be analysed is numeric in nature. This method will be used to analyse the HTFV reported by employers over a period of 3 years and therefore this makes it a trend analysis. By definition, *"trend analysis summarizes patterns over time in the data to show direction of change and can be used to investigate uncertainties in different time points and associations with other factors"* (Chao et al. 2018, p.1). As such, trend analysis is able to estimate the quantities (magnitude) associated with change when comparing current to previous year data. According to the National Centre for Health Statisctics (2018), the time period to be included in a trend analysis must be chosen and a rationale for the choice provided. The period of 3 years is chosen because the public sector data available at the time of study was only for 3 years. Further, the period from 2018 to 2020 accounts for the pre-COVID-19 (2018-2019) and during COVID-19 pandemic year (2020). The unit of analysis for the study is at occupational level being expressed as a quantum through the use of HTFV as a proxy for occupational shortages. Although the data is collected at employer level, it is recorded at occupational level of the reported HTFV.

3.2 Data Collecting Process

Regardless of the field of study or preference for defining data as quantitative or (and) qualitative, accurate data collection is essential to maintaining the integrity of research. Both the selection of appropriate data collection instruments and clearly presented instructions for their correct use reduce the likelihood of errors occurring. A description on database used and how it was collected further leads the research to trustworthy and reliable conclusions.

The datasets used in this work consists of secondary database from 2019/20 to 2021/22 WSP/ATR year and is two-fold. The first dataset was obtained from the Public Service Sector

Education and Training Authority (PSETA) and this comprise of all the public sector employers reporting to and submitting their WSPs to PSETA, while their line of SETA function falls within the health and social development sector. This data is usually requested from PSETA annually through email communication.

The second dataset comes from the Health and Welfare SETA and consists of all the private sector organizations that submitted their WSPs to the HWSETA over the same period of analysis. Private sector organizations, in this context, refers to both levy paying and levy-exempt organizations such as NPOs/NGOs. This data was extracted from an electronic system called the ERP which has a record of all WSPs since 2014. While this data is in its original form as it comes directly from employers, not all employers report on HTFV. Different reasons may arise on why employers may choose not to fill in the HTFV section including lack of understanding of the term itself and completing the WSP in a rush for compliance which results in employers skipping questions. Importantly, the HWSETA's ERP does not make reporting on HTFV as a mandatory field. This may influence the credibility of this dataset given that it may not be a true reflection on the HTFV. Both public and private sector datasets however consist of similar variables which are valuable for the analysis of the study with exceptions for the number of months a position has been vacant in the public sector. Below is an understanding of these variables and what they represent.

- **Employer:** These are those organizations that submitted their WSPs on an annual basis. These organizations can be repeated for different years and there could also be new organizations submitting WSPs over the years. This variable is key in identifying which organizations have the occupational shortages taking place the most.
- **SDL Number:** This refers to the Skills Development Levy Registration Number which can also be used as a unique identifier for each employer. The SDL number is valuable in distinguishing employers that may have similar names but serving different provinces hence submitting WSPs separately. This number is therefore useful in ensuring traceability of employers and no duplicates.
- **Number of HTFV:** This refers to the number of vacancies that employers regard as hard to fill. This number is usually more than the number of employers because one employer can have more than one HTFV arising from one or more occupations.
- **Occupation Name:** The number of HTFV are reported by employers at occupational level, where each identified HTFV will have corresponding occupation. There may be more than one HTFV for each occupation.
- **OFO Occupation Code:** This is the unique code allocated to each individual occupation within the Organisation Framework of Occupations. This code also means

that there is less chances of errors and duplicates in counting occupations since similar occupations identified for different employers can easily be identified and added. Importantly, the OFO code is broken down to identify the major and the minor occupational groups which measures the level of skills requirements for the occupational shortages

- **Hard to fill reason:** These are reasons identified by employers for having a HTFV and differ as per occupation.
- **Number of Months the position has been vacant:** These are the number of months an employer has recorded a vacancy as being hard to fill for. This variable is used as a proxy to measure the extent of need of occupational shortages. This variable is only applicable to private sector as the public sector organizations did not have data on it.

3.3 Target Population

According to (David Onen, 2020), a study's target population refers to the entire group of people or objects to which the researcher wishes to generalize the study findings. A sample on the other hand refers to the selected elements procedurally chosen for participation in a study to represent the target or accessible population. Although the selection of participants for quantitative data usually relies on random sampling as generalization is key aspect, this work will not use any sampling method for the purpose of analysis. This is driven by the study's design which is a trend analysis looking at the entire population of HTFV from all WSPs submitted by employers over 3 years. Table 3 below provides a summary for the population breakdown for the 3 years.

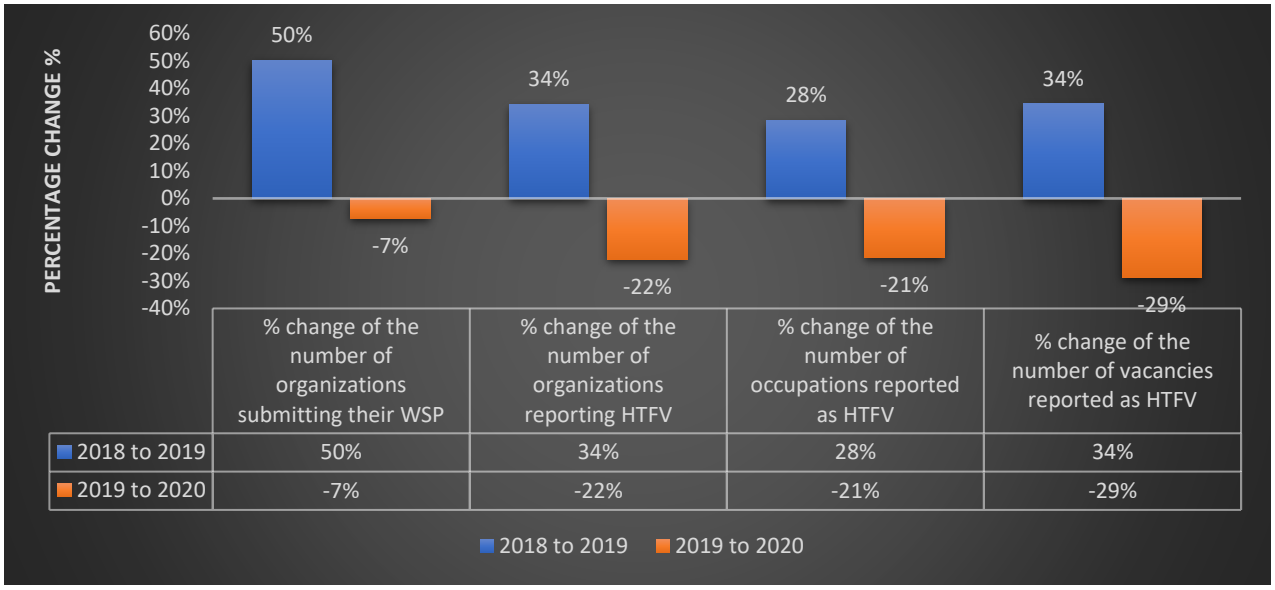
Table 3: Target population

Year	Population of Employers submitting their WSPs	Population of Employers submitting reporting on **HTFVs [Frequency, (%)]**	Population of occupations reported by Employers as **HTFVs**	Population of Vacancies reported by Employers as **HTFVs**
2018	1308	314 (24%)	230	7786
2019	1965	421 (21%)	295	10461
2020	1824	328 (18%)	232	7470
2018-2020	**2485**	**681 (27%)**	**524**	**25717**

Table 3 indicates that the population of employers that submitted their WSPs between the 3 years (2018-2020) was 2485 which constitute 7% of all the organizations registered with HWSETA (36375) as of 10 July 2021 from HWSETA ERP. This number (2485) is broken down over the 3 years, with most employers (1965) submitting their WSPs in 2019, while a slight decline to 1824 employers made submissions in 2020 and the least employers (1308) WSP submissions were made in 2018. Not all employers who submitted WSPs reported on HTFV. Only 681 (27%) of employers reported on HTFV out of 2485 employers who had submitted their WSPs over the 3-year period (Table 3). This total, broken down accounts for 314 employers in 2018, 421 employers in 2019 and 328 employers in 2020. The population of occupations reported by employers as the HTFV over the 3 years gave a total of 524 occupations. These occupations are also distributed over 2018, 2019 and 2020 with totals of 314, 421 and 328 respectively. Lastly the table presents the population of vacancies reported by employers as HTFV over the 3 years as 25717. There were 7786 vacancies reported as HTFVs in 2018 and a sharp increase to 10461 HTFV in 2019 while 2020 decreased to 7470. The HTFV is the unit of analysis for the study. In essence, Table three illustrates that WSP submission data is not representative of all organizations registered with HWSETA. Consequently, the findings from the analysis of the HTFV over three years are indicative not representative of the health and welfare sector occupational needs.

The same results in table 3 can also be presented according to year-on-year percentage change to compare and account for all sorts of variations and percentage changes for 2018 to 2019 and 2019 to 2020 (see Figure 4 below).

Figure 4: Year-on-year percentage changes



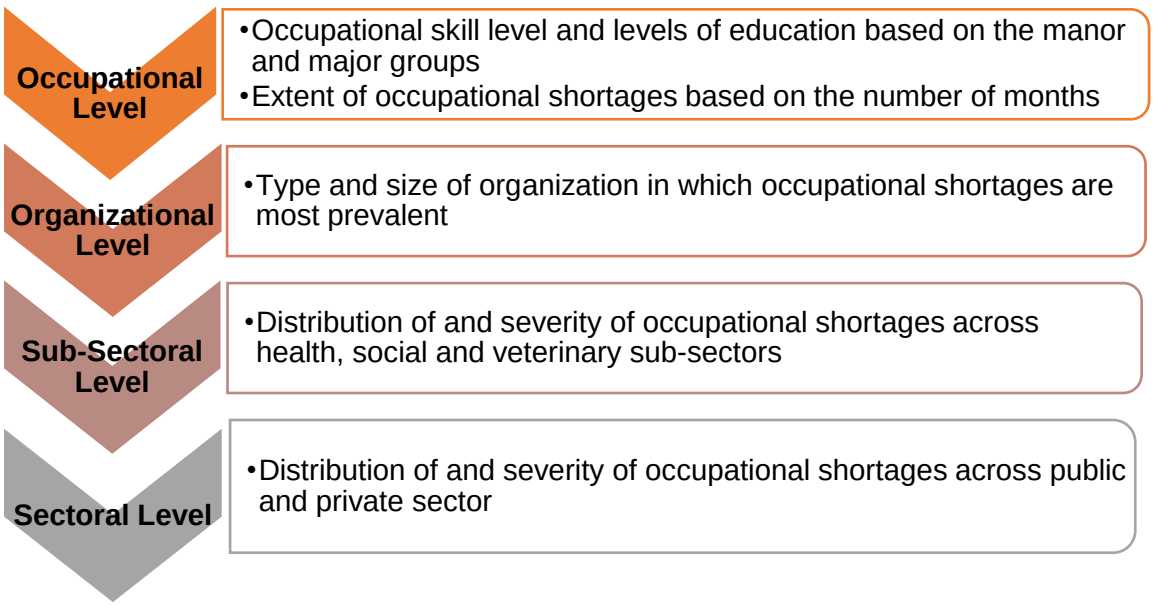
Source: Author's Calculation

Figure 4 shows a 50% increase in the number of organizations who submitted their WSPs from 2018 to 2019 while 2019 to 2020 experienced a 7% decline in submissions. There was a 34% change increase in number of organizations reporting HTFV from 2018 to 2019 while 2019 to 2020 change declined by 22%. The change of the number of occupations reported as HTFV increased by 28% between 2018 to 2019 and declined between 2019 to 2020 by 21%. Lastly, the change in number of HTFV reported increased by 34% in 2018 to 2019 and declined by 29% in between 2019 to 2020. The observed pattern from figure 4 indicates that a slight decrease of 7% from 2019 to 2020 has resulted in bigger percentage declines in the number of organizations in the number of organizations reporting the HTFV, the number of occupations reported as HTFV as well as the number of vacancies reported as HTFV. More to this, although employer's submissions went down which automatically reduces the number of HTFV, this could be due to economic shrink regarding the appetite for hiring.

3.4 Data Analysis

A trend analysis is applied throughout for the analysis of data collected in this work. Data analysis will be guided by figure 5 below – which provides a summary on how the HTFV will be analysed as a unit of analysis in relation to different occupational levels.

Figure 5: Guide to data analysis



Although the HTFV are reported to each SETA in the form of WSP which is at organizational level, the data analysis will be at occupational level as already discussed that the interventions at the end come in the form of occupations and not directed to specific organizations. Hence forth, to understand the trends analysis, there will be analysis of skill levels and levels of education for each occupation with HTFV. More to this, an analysis of the extent of the

identified occupational shortages is key to direct interventions towards where the need is the most. Further analysis will be conducted to explore associations of the HTFV with organizational type and size, severity of occupational shortages, and sub-sector classification with SIC codes.

3.5 Ethical Considerations

The research used administrative data collected for a lawful purpose of generating the Sector Skills Plan while complying to POPI Act principles. This data was collected under the compliance of the SDA which mandates all SETAs to have a skills sector. As such, presentation of findings remains anonymous as it conceals the identity of organizations concerned but shares common features of organizations for purposes of understanding the patterns and formulating practical recommendations.

3.6 Limitation of the study

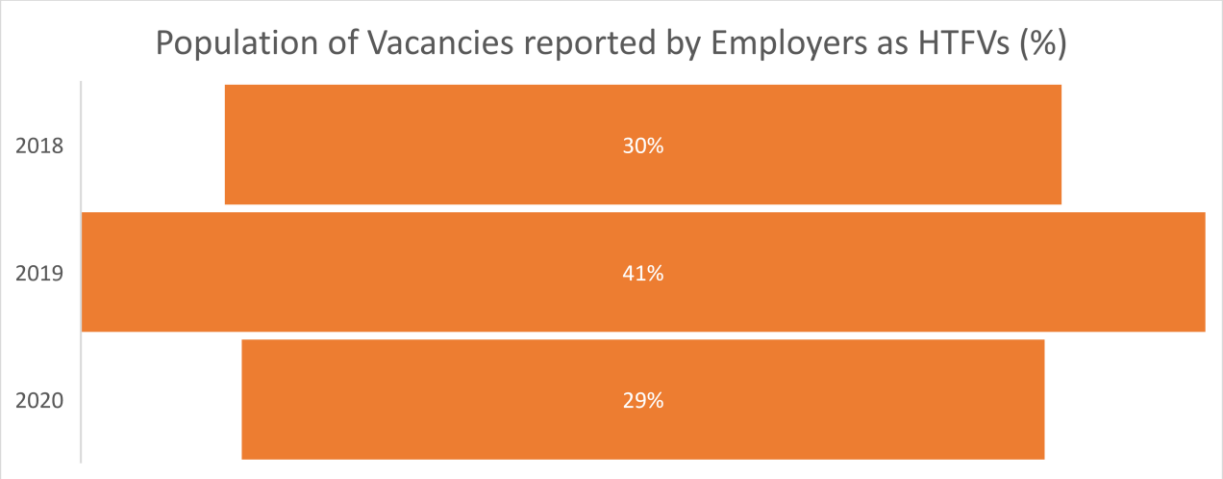
In the opinion of Ross & Zaidi (2019), a meaningful presentation of study limitations should describe the potential limitation, explain the implication of the limitation, provide possible alternative approaches, and describe steps taken to mitigate the limitation. The main limitation for the study is positioned on data collection from both PSETA and HWSETA. Firstly, the data collected from PSETA did not have information on the number of months that a position was vacant for. This implies that the analysis on the extent of need for occupational shortages will only be analysed for private sector and not the entire sector. Steps were taken to make a request to PSETA on this variable even though it was after they had provided data on their WSPs for the 3 years. It means that the request might have been done too late to account for this variable.

Secondly, not all employers who submitted their WSPs to the HWSETA fill in the HTFV section. Although this could genuinely be because of lack of HTFV it can also be argued given that the system does not have any section on the definition of terms which could result in lack of understanding. Further, the HWSETA ERP does not make reporting on HTFV as a mandatory field. This means that the data collected for private sector may not be a true reflection on the HTFV provided. It also means that there might be a huge need to include a section on definitions of terms for the purpose of clarity during WSP submissions. This will reduce the likelihood of getting incorrect information from employers.

CHAPTER 4: PRESENTATION OF DATA ANALYSIS

This chapter will provide an analysis of the HTFV data collected from PSETA and HWSETA for the years 2018, 2019 and 2020. The data analysis is presented in tabulation and graphical analysis with the aim of identifying any patterns that provide the best interpretation of the questions in the study. Figure 6 indicates that there has been a decline in reported HTFV from 2018 to 2020 with the actual numbers reported as 7786 for 2018, 10461 for 2019 and 7470 for 2020. The rest of the presentation of the analysis for the study will be addressed to specific objectives.

Figure 6: % Distribution of vacancies reported by employers as HTFV between 2018 and 2020



(a) Objective 1: Changes of occupational shortages (HTFV) between 2018 and 2020

The data analysis is at occupational level, where the objective is to quantify the distribution of occupational shortages within the health and social sector over 2018 and 2020. Table 4 presents a list of occupational shortages (HTFV) together with their ranking from largest to smallest number of HTFV for the duration between 2018 to 2020. This list only covers 50 occupations whilst the rest of the occupations are combined into one occupation referred to as ‘others’. A complete list with all the occupations is presented in Annexure A which covers the rest of the occupations with the HTFV. Although this list is not included because of its length, it can be used for further reference on what makes the ‘others’ category of occupations in table 4. Firstly, the results in table 4 show that there is no consistency with the concentration of occupational shortages over the years where one occupation consistently takes a similar position in ranking throughout the years.

However, what seems consistent irrespective of a few outliers is that taking cumulative top 10 occupations in need over 2018 and 2020 fall within their respective top 10 rank for 2018, 2019 and 2020 indicating consistency in demand throughout the 3 years. Exceptions are with the following occupations Registered Nurse (Disability and Rehabilitation) – not in top 10 for 2019 and 2020; Nursing Support Worker – not in top 10 for 2019; Data Management Manager – not in top 10 for 2018 and 2020; Registered Nurse (Operation Theatre) – not in top 10 for 2018 and 2020 and lastly Hospital Pharmacists – not in top 10 for only 2020. On the contrary, there are occupations that do not fall within the top 10 occupations needed by employers when looking at a cumulative period of 2018 to 2020 yet representing top 10 occupational needs only in 2020. These occupations are namely the Ambulance Paramedic; Retail Pharmacist; Registered Nurse (Community Health) and Registered Nurse (Child and Family Health). Given that these occupations mainly appear the most for the latest year of 2020, it can imply that these are occupations that experienced increased demand for the sector as a result of COVID-19. It is not surprising that Ambulance Paramedic and Retail Pharmacist form part of this list given that these occupations formed part of essential services required to serve the sector the most during this time.

Table 4: Distribution of occupational shortages (HTFV) between 2018 and 2020

Number	Occupation Name	2018-2020 HTFV	2018-2020 Ranking	2018 HTFV	2018 Ranking	2019 HTFV	2019 Ranking	2020 HTFV	2020 Ranking
1	322101 ENROLLED NURSE	4806	1	483	5	1959	1	2364	1
2	222108 REGISTERED NURSE (MEDICAL)	4030	2	1247	2	867	5	1916	2
3	221101 GENERAL MEDICAL PRACTITIONER	2210	3	846	3	1087	2	277	4
4	222105 REGISTERED NURSE (CRITICAL CARE AND EMERGENCY)	1316	4	301	6	938	4	77	10
5	222107 REGISTERED NURSE (DISABILITY AND REHABILITATION)	1298	5	1275	1	23	51		306
6	532903 NURSING SUPPORT WORKER	1069	6	717	4		284	352	3
7	133103 DATA MANAGEMENT MANAGER	1048	7		349	1042	3	6	81
8	222101 CLINICAL NURSE PRACTITIONER	750	8	164	9	347	7	239	5
9	222111 REGISTERED NURSE (OPERATING THEATRE)	534	9	63	19	429	6	42	16
10	226201 HOSPITAL PHARMACIST	489	10	240	7	184	10	65	15
11	222103 REGISTERED NURSE (CHILD AND FAMILY HEALTH)	422	11	137	10	199	9	86	8
12	222104 REGISTERED NURSE (COMMUNITY HEALTH)	402	12	34	27	170	11	198	6
13	221210 GENERAL MEDICINE SPECIALIST PHYSICIAN	335	13	103	13	155	13	77	12
14	321101 MEDICAL DIAGNOSTIC RADIOGRAPHER	291	14	113	11	108	16	70	13
15	226203 RETAIL PHARMACIST	261	15	107	12	71	20	83	9
16	222117 MIDWIFE	246	16		253	212	8	34	21
17	222112 REGISTERED NURSE (SURGICAL)	229	17	17	43	143	14	69	14
18	334102 OFFICE ADMINISTRATOR	171	18	4	97	161	12	6	79
19	325801 AMBULANCE OFFICER	170	19	170	8		327		357
20	226902 OCCUPATIONAL THERAPIST	151	20	87	16	27	39	37	17
21	226401 PHYSIOTHERAPIST	150	21	99	14	24	49	27	28
22	263401 CLINICAL PSYCHOLOGIST	146	22	67	18	42	25	37	18
23	134201 MEDICAL SUPERINTENDENT	144	23	32	28	35	28	77	11
24	325301 HEALTH PROMOTION PRACTITIONER	136	24	1	186	125	15	10	62
25	325802 INTENSIVE CARE AMBULANCE PARAMEDIC / AMBULANCE PARAMEDIC	123	25	7	72	4	124	112	7

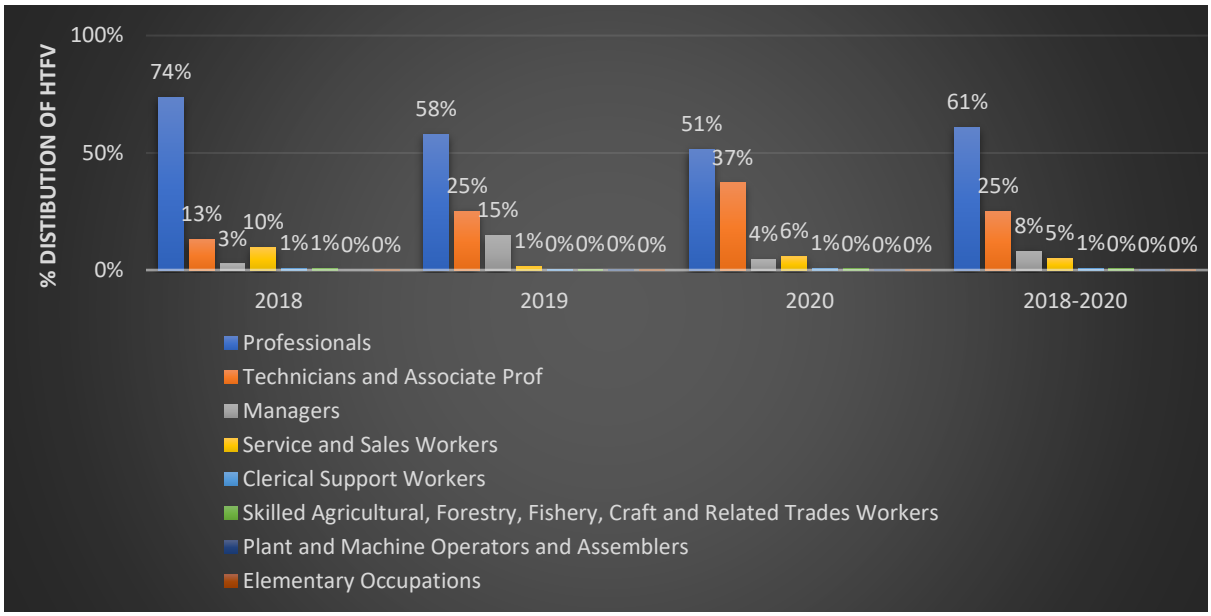
26	226501 DIETICIAN	119	26	83	17	17	61	19	36
27	221208 PSYCHIATRIST	117	27	23	34	81	19	13	45
28	225101 VETERINARIAN	109	28	3	115	103	17	3	122
29	222201 MIDWIFE	106	29	92	15	6	106	8	72
30	332208 PHARMACY SALES ASSISTANT	104	30	58	20	25	44	21	32
31	222116 NURSE MANAGER	100	33	41	24	26	41	33	22
32	213301 CONSERVATION SCIENTIST	100	32		279	100	18		257
33	222110 REGISTERED NURSE (MENTAL HEALTH)	100	31	45	21	29	36	26	29
34	222113 PAEDIATRICS NURSE	98	34	30	31	31	32	37	19
35	221204 OBSTETRICIAN AND GYNAECOLOGIST	88	35	22	35	47	23	19	35
36	213110 MEDICAL SCIENTIST	79	36	38	25	27	40	14	42
37	263501 SOCIAL COUNSELLING WORKER	78	37	5	88	38	27	35	20
38	321104 SONOGRAPHER	76	38	20	39	27	38	29	24
39	121101 FINANCE MANAGER	74	39	19	40	28	37	27	27
40	263507 ADOPTION SOCIAL WORKER	68	40	34	26	24	48	10	56
41	221203 EMERGENCY MEDICINE SPECIALIST	67	41	29	32	17	62	21	33
42	221206 PAEDIATRICIAN	65	42	21	37	31	29	13	46
43	226302 SAFETY, HEALTH, ENVIRONMENT AND QUALITY (SHE&Q) PRACTITIONER	61	43	6	74	47	24	8	69
44	532901 FIRST AID ATTENDANT	60	44		358	30	33	30	23
45	134101 CHILD CARE CENTRE MANAGER	60	45	1	192	49	22	10	57
46	221209 RADIOLOGIST	60	46	22	36	20	56	18	37
47	541902 EMERGENCY SERVICE AND RESCUE OFFICIAL	57	47	1	225	55	21	1	212
48	221212 FORENSIC PATHOLOGIST	55	48	10	58	25	45	20	34
49	121905 PROGRAMME OR PROJECT MANAGER	53	49	7	70	40	26	6	80
50	226603 SPEECH THERAPIST AND AUDIOLOGIST	51	50	41	23	10	83		323
51	Others	2785		821		1176		788	
52	**Grand Total**	**25717**		**7786**		**10461**		**7470**	

(b) Objective 2: Skills Level associated with occupational shortages (HTFV) between 2018 and 2020

A much wider set of information is needed to understand the real nature of occupational shortages within the health and social development sector. That said, this section adds another level of analysis which is aimed at understanding the concentration of skills levels associated with the identified occupations with the HTFV. This is made possible through the disaggregation of the occupational shortages (HTFV) by the OFO Occupational Major group as presented in figure 7. This disaggregation reveals the following results:

- The distribution of HTFV is predominant (61%) within the Professional OFO occupational major group throughout the years even though it shows a decreasing trend from 2018 to 2020 at 75% to 51% respectively.
- On the contrary, the distribution shows an increasing trend within the Technicians and associate professionals group from 2018 to 2020 at 13% to 37% respectively. Notably, its distribution of 37% in 2020 is above its distribution over the three years at 25%. This arguably makes the case for a unique phenomenon that must have taken place in 2020.

Figure 7: Distribution of (HTFV) Occupational Shortages by OFO Occupational Major Group between 2018 and 2020

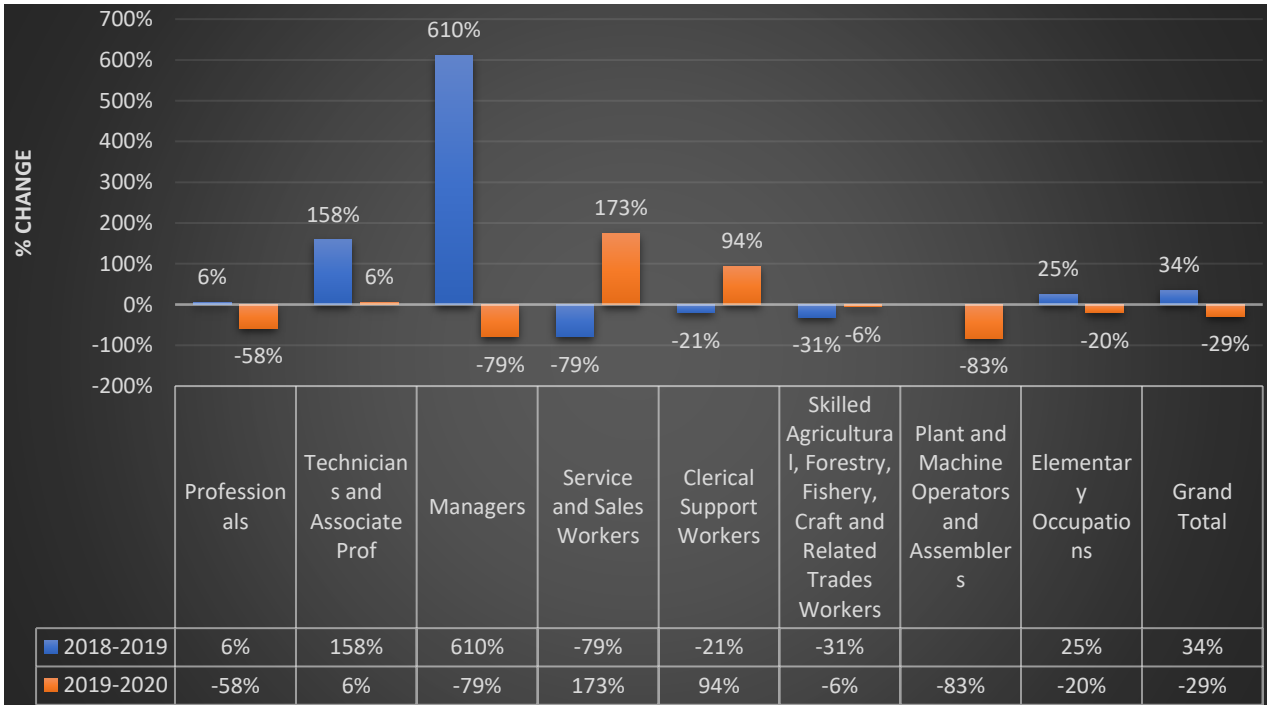


When using percentage change (see Figure 8 below), findings illustrated in figure below show that Pre-COVID-19 (2018-2019) managers, technicians and associate

professionals, and professionals major categories were on the rise in their sequential order. At the same period (2018-2019), services and sales workers, and clerical support workers groups were on the decline in their sequential order. However, during COVID-19 (2019-2020) there was a change in the trajectory of the following major group categories.

- Managers and professionals decreased as opposed to their rising trend pre-COVID-19 in being reported as the HTFV while technicians and associate professionals continued to increase but at a much slower rate than the pre-COVID period. On the latter, findings signal that the source of demand for the technicians and associate professionals predates the COVID-19 period.
- Services and sales workers, and clerical support workers increased (doubled on average) as the HTFV. These two categories experienced the most rate of increases as the HTFV during the COVID-19 in 2020. However, the number of HTFV from services and sales workers, and clerical support workers as a proportion to the overall health and welfare sector remains low when compared to other categories.

Figure 8: Annual changes in Occupational Shortages by OFO Occupational Shortages by OFO Occupational Shortages



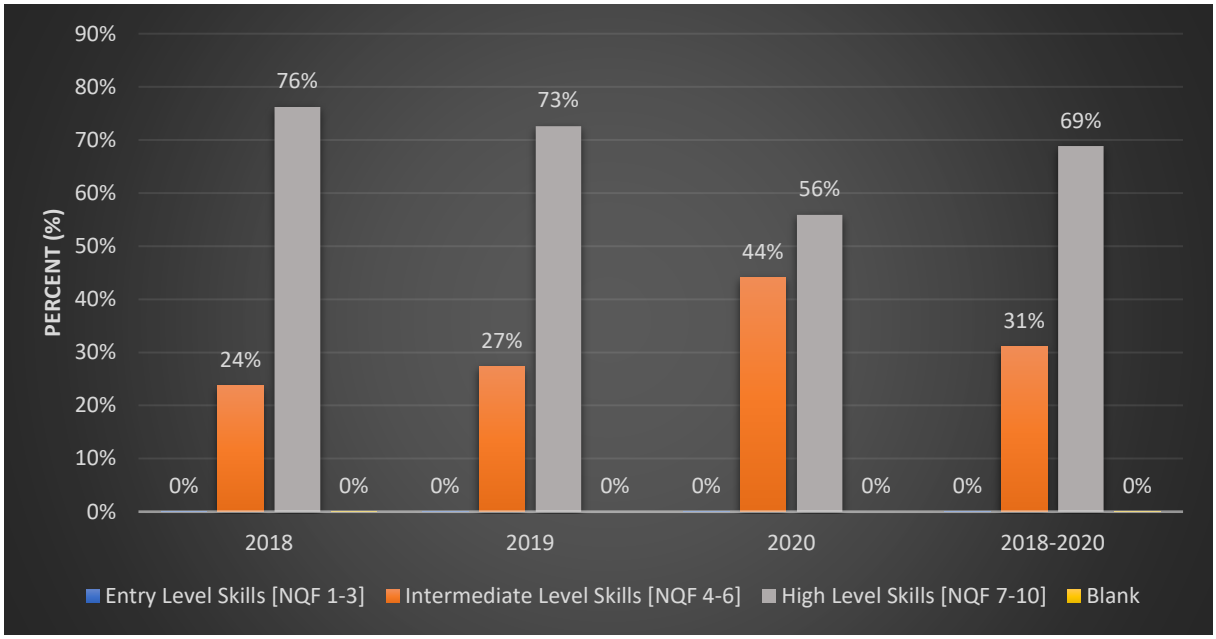
These findings are also presented in table 5 and Figure 9 to indicate the NQF level and the NSDS Skill level that these occupational shortages take place the most. Table 5 shows that most of the occupational shortages are linked with high NSDS level of skills. Almost 69% of the occupational shortages which is represented by Professionals (61%) and Managers (8%), (assuming all the identified managers do not fall under the intermediate skill level) represent

the high skill level as well as NQF level ranging from 10 to 7. Some of the occupational shortages within managers (8%) may fall under the NQF level 6 together with the Technicians and Associate Professionals which account for 25%. The composition of skills shortages is not largely made up of the entry skills level as evidence shows an approximation of only 6%.

Table 5: Linking the NSDS skill level and NQF level with the OFO Occupational Major Group for the period 2018-2020

<table>
<tr><th>NSDS Level of Skill</th><th>NQF Level</th><th colspan="4">OFO Major Group</th></tr>
<tr><td rowspan="4">High</td><td>10</td><td rowspan="4">Professionals (61%)</td><td colspan="3" rowspan="4">Managers (8%)</td></tr>
<tr><td>9</td></tr>
<tr><td>8</td></tr>
<tr><td>7</td></tr>
<tr><td rowspan="2">Intermediate</td><td>6</td><td>Technicians and associate professionals (25%)</td></tr>
<tr><td>5</td><td rowspan="3">Clerical support workers (1%)</td><td rowspan="3">Services and sales workers (5%)</td><td rowspan="3">Skilled agricultural, forestry, fishery, craft, and related trade workers (0%)</td><td rowspan="3">Plant and machine operators and assemblers (0%)</td></tr>
<tr><td rowspan="3">Entry</td><td>4</td></tr>
<tr><td>3</td></tr>
<tr><td>2</td><td colspan="4" rowspan="2">Elementary occupations (0%)</td></tr>
<tr><td>1</td></tr>
</table>

Figure 9: Distribution of (HTFV) Occupational Shortages by NSDS Skills Levels as aligned to NQF levels for the period 2018 to 2020



2

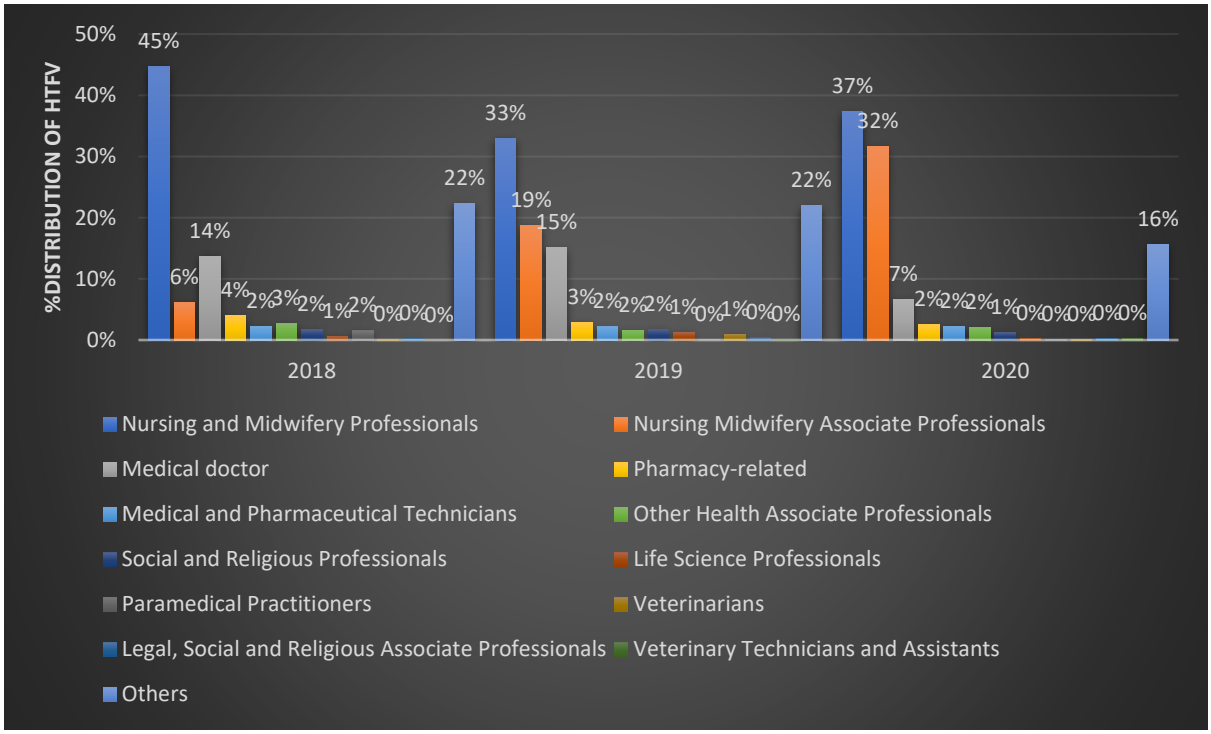
This graph shows that the distribution of HTFV is predominant (69%) within the High skills level over the three-year period even though it shows a decreasing trend from 2018 to 2020 at 76% to 56% respectively. On the contrary, the graph shows an increasing trend of the Intermediate skills level from 2018 to 2020 at 24% to 44% respectively. Again, its distribution of 44% in year 2020 is above its overall three-year (2018-2020) distribution at 31%.

The OFO Occupational Minor group goes one step more specific towards more discipline specific and context related to the occupational grouping. Figure 10 shows the HTFV percentage distribution according to the OFO Occupational Minor Group. For instance, under the Professionals Major Group identified previously, there may be Nursing and Midwifery Professionals, Medical Doctors and Social and Religious Professionals. In Figure 10, whereas there is a slight decrease in percentage distribution for the Nursing and Midwifery Professionals occupational shortages, this occupational shortage has been dominating for 2018, 2019 and 2020. The Nursing and Midwifery Associate Professionals shows an increasing trend in occupational shortages with 6% in 2018 and 32% in 2020. The latter distribution in 2020 (32%) is above the overall three-year (2018-2020) distribution at 19%

[2] Using the Table 5, the graph classified the following categories to intermediate skills levels even though some may have certain occupations at the entry level skills; Clerical support workers, services and sales workers, skilled agricultural, forestry, fishery, craft, and related trade workers, and Plant and machine operators and assemblers. This decision is premised on the fact that primarily most of the occupations in these categories are at NQF level 4 or 5.

showing a unique pattern taking place in 2020. However, Medical doctors present a decreasing trend in occupational shortages while the Social and Religious Professionals only account for 1% of the occupational shortages for all the years. The Veterinarian professionals account for an unnoticeable share of the occupational shortages for all the years.

Figure 10: Distribution of (HTFV) Occupational Shortages by OFO Occupational Minor Group between 2018 and 2020



(c) Objective 3: Severity of the occupational shortages (HTFV) in the Health and Social Sector between 2018 and 2020

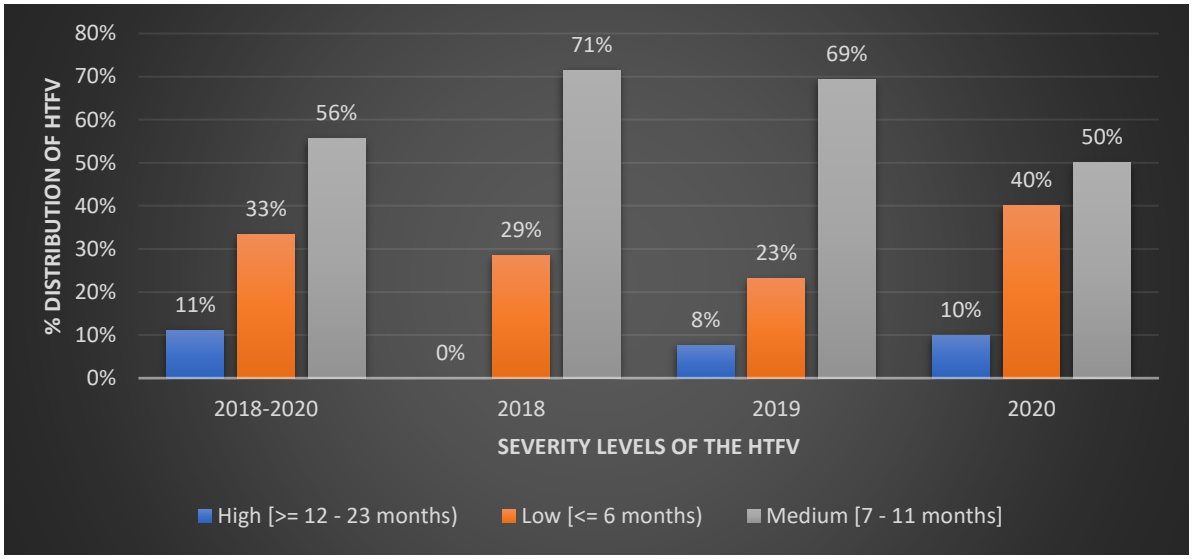
It is also important to determine the severity of occupational shortages over the 3 years of analysis in the sector. This work assumes that the longer the number of months it takes for an occupation as a HTFV, the more severe is the problem of occupational shortage. This section therefore presents the average number of months it took for occupations with the highest HTFV to check the severity of these existing occupational shortages. This however accounts only the private sector organizations only which recorded a total of 345 occupations with HTFVs. The severity of skills shortages is rated according to the following scales from low to extreme level of skills shortages in table 6 below.

Table 6: Severity rating of occupational shortages

Severity	Rating	DHET official and strict classification/definition
Low	6 months ≤	Not considered a HTFV
Medium	7 months ≥ 11 months	
High	12 months ≥ 23 months	Considered a HTFV
Extreme	24 months ≥	

Out of the 345 occupations accounting for all the HTFV between 2018 to 2020, only 36 (10%) occupations had fifteen or more vacancies over three years were considered for analysis to ensure reliability on the average months a position had been vacant (see Figure 11).

Figure 11: Severity Levels of the occupations reported as HTFV with vacancies above 12 over 2018 to 2020



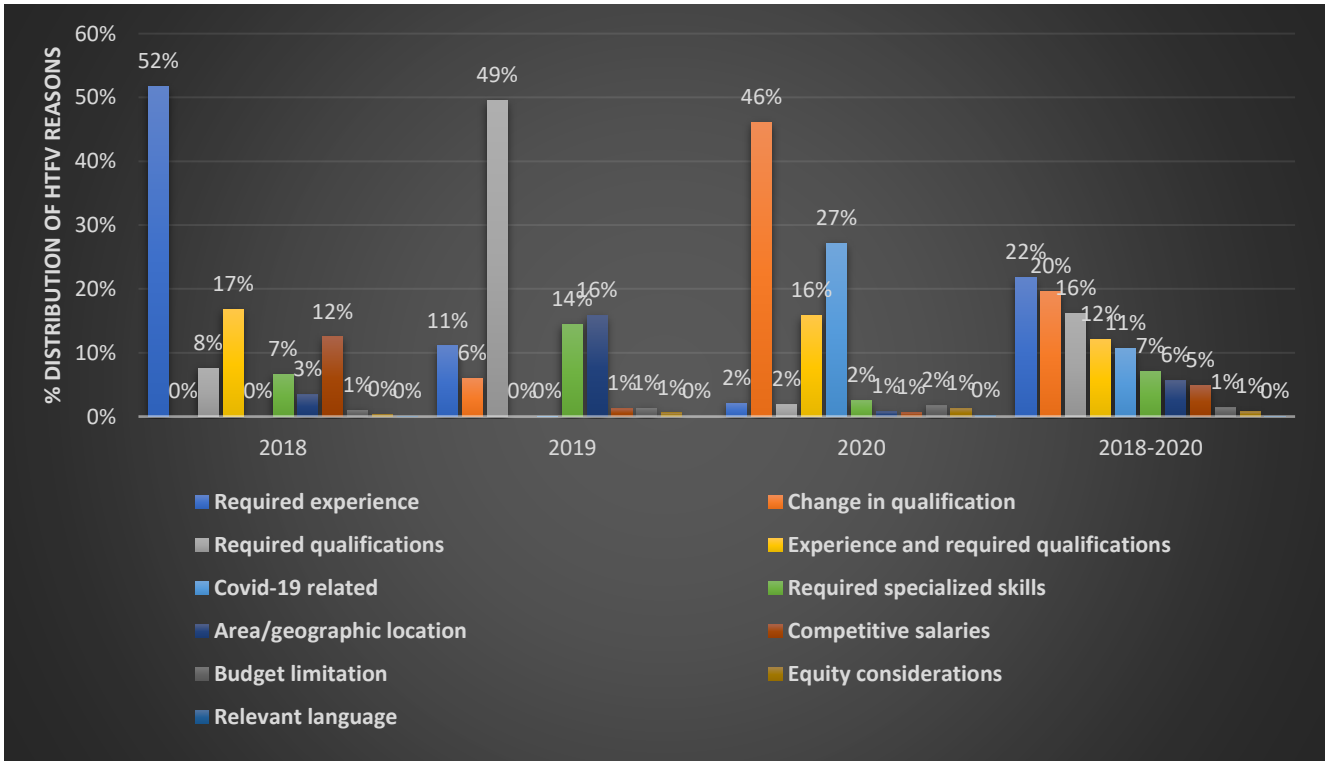
Of these 36 occupations reported as HTFV with fifteen or more vacancies for the period (2018-2020), only 11% of the had severity at high levels [>=12 - 23 months]. As such, 89% of all the HTFV are at medium and low severity levels. The low and medium severity levels [1-11 months], according to the official strict classification /definition of DHET, are not considered a HTFV on the premise of its severity being less than 12 months. In view of DHET's definition, only 11% of the HTFV at high severity levels [12-23 months] are considered genuine HTFV on the premise of their severity being 12 months or more. Getting into the individual years also shows a similar trend of the overall 3-year picture where most of the HTFV experienced each year fall within the low and medium severity levels compared to the high levels of severity. The above figure further indicates that there is no presence of the extreme severity levels of

occupational shortages (HTFV which took more than 24 months to fill) according to the classification of only including those occupations with 15 or more HTFV. What this means is that although the existing occupational shortages have not been long standing problems given that most of the occupational shortages throughout all the years represent low to medium severity levels.

(d) Objective 4: Key reasons explaining the occupational shortages

To investigate the problems of occupational shortages identified further, there is good reason to quantify the reasons for these existing occupational shortages. The main reasons are grouped according to different reasons for the HTFV across the three-years as indicated in Figure 12. The overall findings (2018-2020) show the lack of candidates with required experience at 22% as the major reason for the HTFV followed by change in qualification (20%), scarcity of required qualifications alone (16%), scarcity of both required experience and qualifications (12%) and required specialised skills at 7%. These reasons form part of supply related reasons that make it difficult for employers to fill in vacant occupations. The demand related reasons such as competitive salaries in the market (5%) and budget limitations (1%) form the least according to reasons for the HTFV implying that employers do not find it too difficult to fill vacancies as their result.

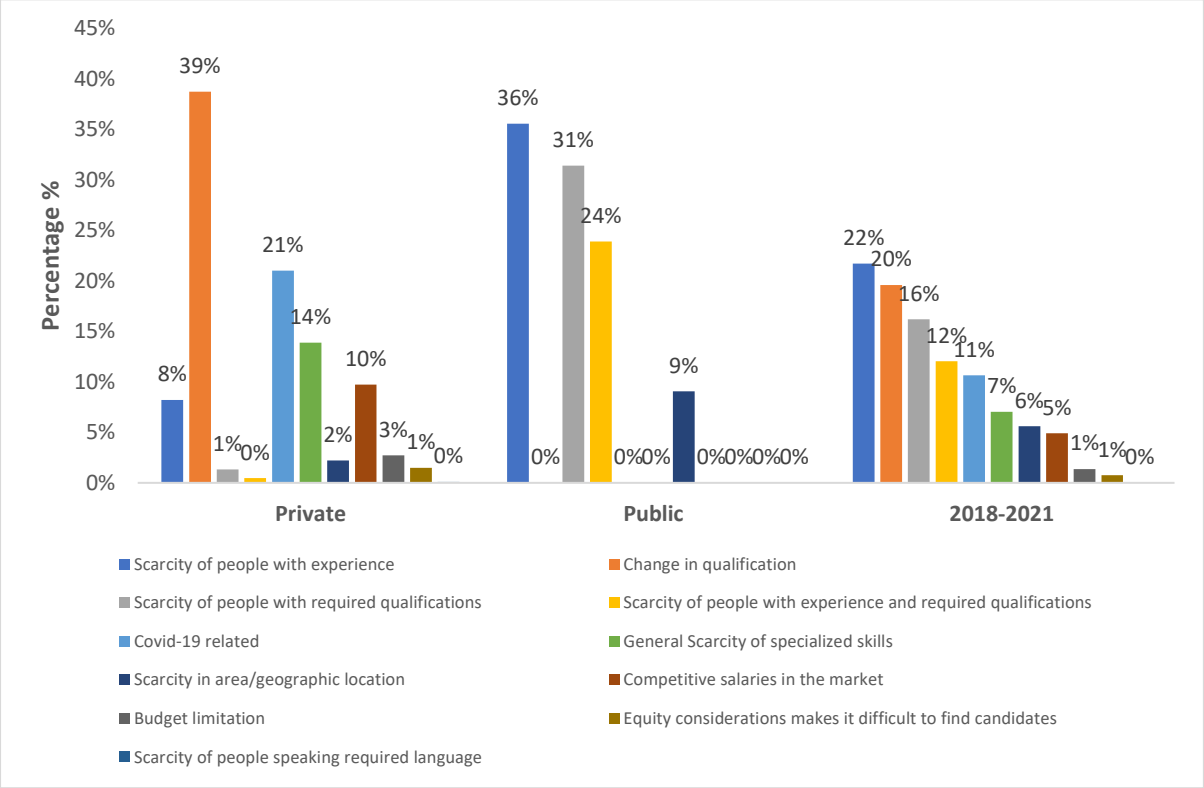
Figure 12: Percentage Distribution of key reasons explaining the HTFV between 2018 and 2020



Reasons such as scarcity of individuals with both experience and required qualifications have been a long-standing issue since 2018 although the percentage distribution declined drastically in 2019. This cuts across several occupations including General Medical Practitioner, Nursing Support Worker, Registered Nurse (Community Health) and Hospital Pharmacists. Some reasons towards the HTFV emerged only in specific years such as the change in qualification which emerged mainly in 2020 particularly for the enrolled nurse qualification; competitive salaries only in 2018 at 12%; scarcity of individual with required qualification in 2019 at 49%; Covid-19 in 2020 at 27%. The Registered Nurse (Medical) occupation was mainly unfilled as a result of Covid-19. This was explained by two factors. First there was lack of staff pipeline (limited numbers trained) in this field to fill in positions during COVID-19 pandemic. Lastly, the latter triggered high demand in this occupation which saw high turnover rates. This displays how different reasons (factors) influence each other.

It was important for the study to explore the distribution of reasons by sector (Public versus private). Figure 13 shows that there were reasons explaining HTFV unique to each sector such as change in qualification, COVID-19 related, general scarcity of specialized skills, and competitive salaries in the market were specific to the private sector alone. In contrast, scarcity of people with experience, scarcity of people with required qualifications, scarcity of people with experience and required qualifications, and scarcity in area/geographic location was predominantly reasons from the public sector. It can thus be deduced from this finding that, in the main, the change in qualifications is the primary reason (factor) explaining HTFV in the private sector while the public sector is mainly affected by the scarcity of experience and required qualifications. The COVID-19 related reason was uniquely from private sector in 2020. This may be associated with the fact that most of the COVID-19 infections and hospitalizations were taking place in the urban areas where private hospitals are dominant than public sector. Similarly, the scarcity in area/geographic location is specific to public sector given challenges of in-migration of health professionals or specialist to either urban areas or private sector.

Figure 13: Percentage Distribution of key reasons explaining the HTFV between 2018 and 2020 by sector

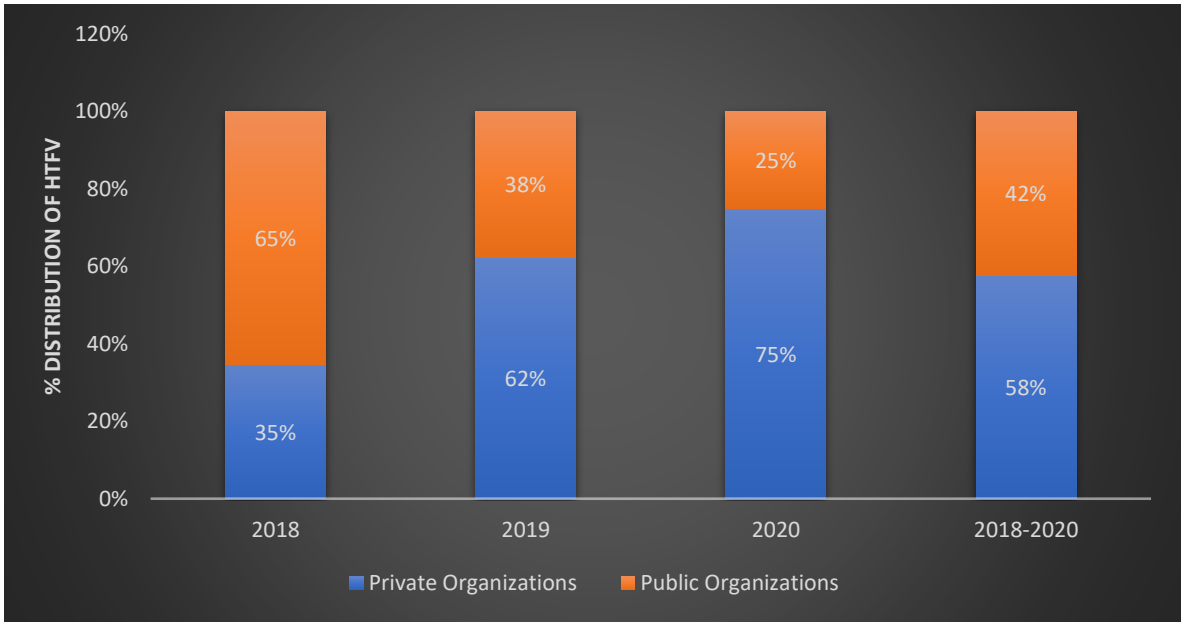


(e) Objective 5: Locating sub-sector, organization type and size mostly affected by occupational shortages in the health and welfare sector

Skills development interventions are distributed across different employers as well as different institution types being it public and private sector institutions. It then becomes paramount to provide the distribution of occupational shortages according to sectoral level and employer profile. Figure 14 presents the distribution of occupational shortages (HTFV) across the public and private sector organizations over the 3 years of analysis.

Figure 14 indicates that the public sector organizations signalled a strong decline in percentage share of yearly occupational shortages (HTFV) moving from 65% in 2018 to 38% in 2019 then to 25% in 2020. Private sector organisations however show a strong increase in occupational shortages which amounts to 35% in 2018, 65% in 2019 and 75% in 2020. The pandemic period-2020 seems to have affected the public sector positively whereas the private sector has been affected negatively. The 2018-2020 period presents the overall sectoral distribution of occupational shortages and shows that although when looking at the 3 years individually there is a huge gap between the occupational shortages across the public and private sector, the 3-year time period bridges the gap.

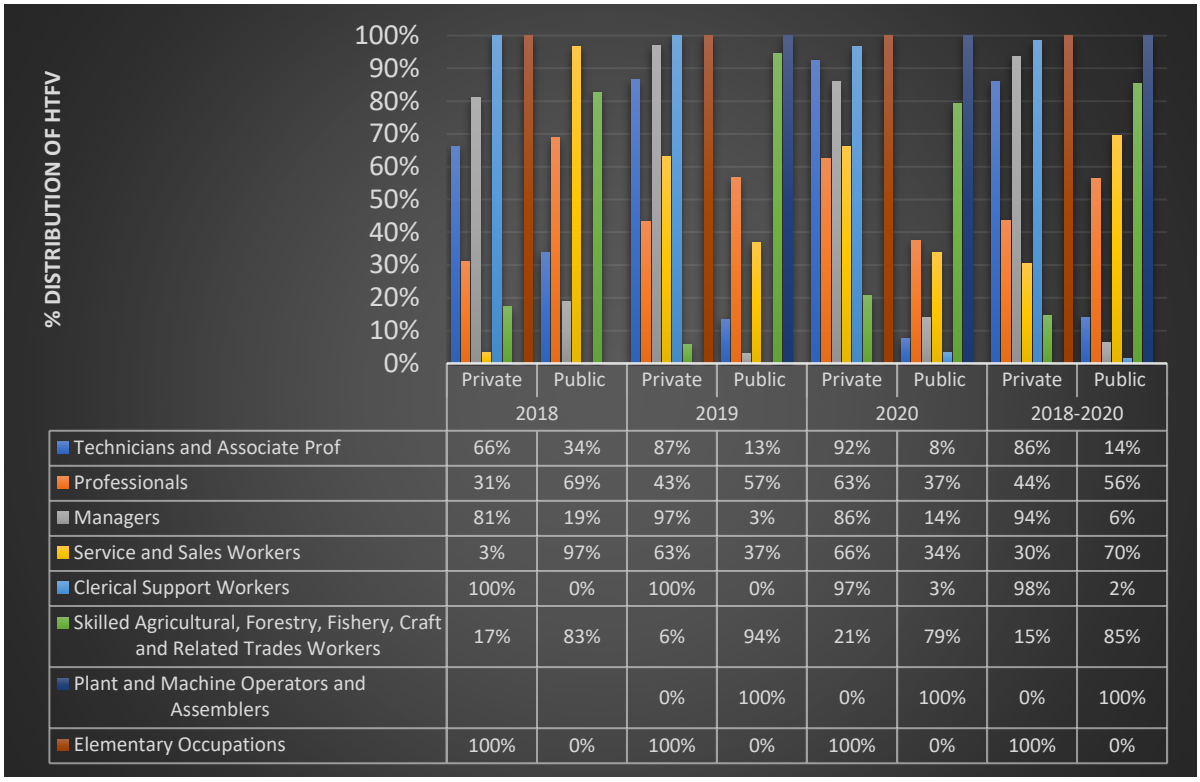
Figure 14: Distribution of HTFV across sectoral type



From a perspective of demand for specific skills, different sectors require skill levels, and the next figure provides an indication on the different skills sets associated with the occupational shortages by sector. Findings from Figure 15 below confirm the differences in skills level per sector for the different years of analysis. Firstly, the proportion of Technicians and Associate Professionals; and Managers account for most of the HTFV within the private sector, while more Professionals account for most of the HTFV for the Public sector throughout all the years. These differences may explain different business delivery models adopted by the private and public sector particularly within the hospital sector. However, it is important to note the change that had started from 2018 to 2020 in the Professionals occupational groups within the private sector which led to its share being more than halve (63%) compared to public sector in 2020.

This means that the private sector demands more Managers and Technicians and Associate professionals while Professionals are slightly skewed towards the public sector. The more demand required by the public sector confirms the unequal distribution of healthcare professionals between the public and private sector in South Africa. Another key reason could be that the private sector employs medical practitioners, who were originally trained at the public expense. As a result, the public sector loses its investment in training health professionals hence the need for professionals.

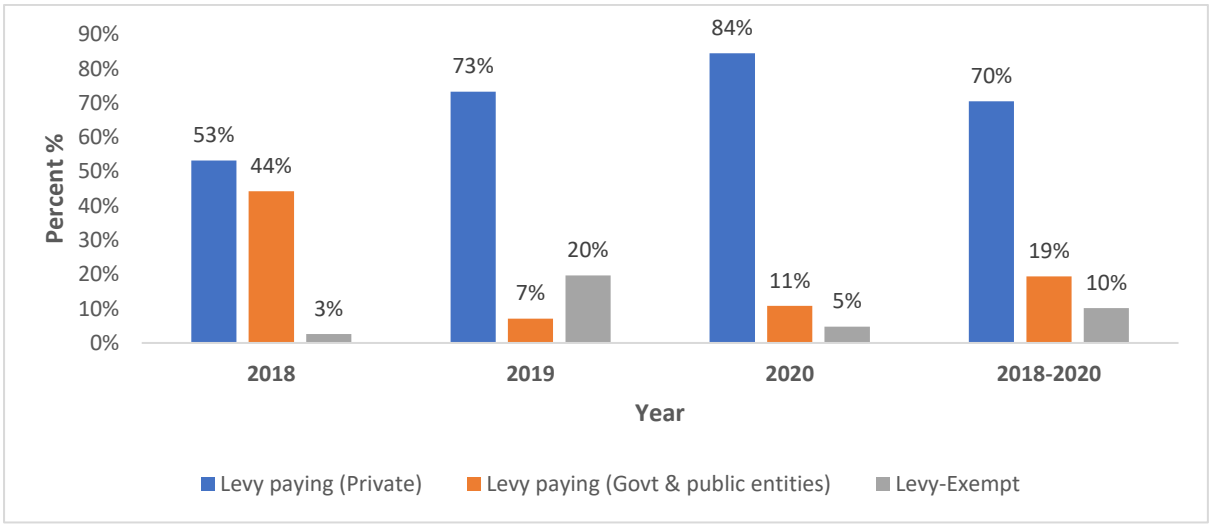
Figure 15: Distribution of Occupational shortages by specific sector skill level



	Private 2018	Public 2018	Private 2019	Public 2019	Private 2020	Public 2020	Private 2018-2020	Public 2018-2020
Technicians and Associate Prof	66%	34%	87%	13%	92%	8%	86%	14%
Professionals	31%	69%	43%	57%	63%	37%	44%	56%
Managers	81%	19%	97%	3%	86%	14%	94%	6%
Service and Sales Workers	3%	97%	63%	37%	66%	34%	30%	70%
Clerical Support Workers	100%	0%	100%	0%	97%	3%	98%	2%
Skilled Agricultural, Forestry, Fishery, Craft and Related Trades Workers	17%	83%	6%	94%	21%	79%	15%	85%
Plant and Machine Operators and Assemblers			0%	100%	0%	100%	0%	100%
Elementary Occupations	100%	0%	100%	0%	100%	0%	100%	0%

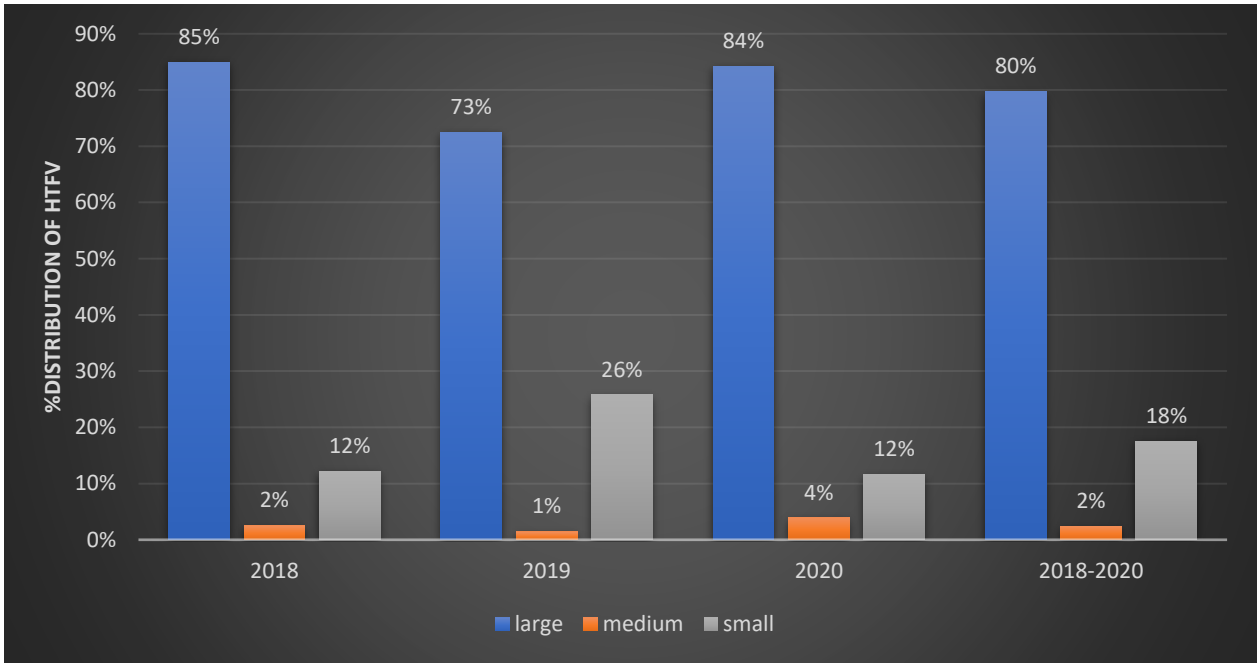
Figure 16 below shows the strong public sector (levy-paying government departments and public entities) decline in HTFV was due to a decrease in the number of HTFV reported from 44% to 11% in 2018 and 2020 and an increase in the number of levy-exempt organizations reporting WSP and HTFV.

Figure 16: Distribution of HTFV by organization type



The size of an organization is another element that matter for skills development. Throughout the 3 years, large organizations have reported more occupational shortages (80%) followed by the medium (18%) and small organizations (2%). This may be because large employers generally have more vacancies advertised than the small organizations which if unfilled are automatically translated to occupational shortages (see Figure 17 below).

Figure 17: Distribution of HTFV across employer size



CHAPTER 5: INTERPRETATION AND DISCUSSION OF FINDINGS

This study was meant to provide an in-depth trend analysis for the health and social sector HTFV over 2018 to 2020. This was done through an analysis of three-year datasets on HTFV from public and private institutions. The results detail insightful findings based on each objective and will be explained in this section. But first, what is clear is that the reported HTFV for the sector declined particularly during 2020-pandemic year. The rest of the interpretation of findings are presented to correspond with each objective and its findings in the previous chapter.

Objective 1: To quantify the distribution of occupational shortages (HTFV) in the health and welfare sector

Findings based on this objective show a trend in repeated occupational shortages within the 3 years of analysis, where there was prevalence in occupational shortages within the same occupations over the 3 years. Some of the occupational shortages that persists as the top 10 include Registered Nurse; Enrolled Nurse; Registered Nurse (Medical); General Medical Practitioner and Clinical Nurse Practitioner. These persistent occupational shortages may imply that skills development interventions are not making desired impact on these pressing occupational needs given that they persist yearly in high quantities of HTFVs. It also means that given that HWSETA's interventions towards HTFV are annual based without reflecting on past HTFV and achievements then the interventions may be short-sighted. Of the six occupational shortages that persist as the top ten, only two (Enrolled Nurse; Registered Nurse (Medical) had their HTFV from 2019 to 2020 (COVID-19 pandemic) increase by a percentage change of 21% and 121% respectively. This change of trajectory was more evident for the Registered Nurse (Medical) which had a -30% change from 2018 to 2019 compared to its 21% change increase from 2019 to 2020. This shows that these occupational shortages were exacerbated by the COVID-19 related factors in 2020. All the other four occupational shortages that persist as the top ten over the 3-year period had a decrease in their percentage change from 2019 to 2020 between -31% to -92%. This may imply that the health system responded drastically to meet the occupational needs (the HTFV) during the COVID-19 crisis probably from special additional funds allocated for COVID-19 interventions. As such, more research is needed to understand the tactics that were employed as part of the response strategy to COVID-19 so that they are entrenched going forward. Lastly, there were some occupational shortages that their demand increased due to the pandemic such as Ambulance

Paramedic, Retail Pharmacist, registered Nurse (Community Health) and Registered Nurse (Child and Family Care).

Objective 2: To explore skills level associated with occupational shortages (HTFV) in the health and welfare sector

The greatest volume of skill levels associated with the identified occupational shortages occurred within Professionals followed by Managers and Technicians and Associate Professionals which together represent the high and intermediate NSDS skills level. For the overall period (2018-2020), more than half (61%) of all the occupational shortages belonged to Professionals which signals very strong demand for Professional skill level in the sector. This, when observed annually declined drastically during the pandemic period (2020). The subsequent minor occupational groups (Nursing and midwifery professionals; medical doctors and pharmacy-related professionals) that fall under Professionals also followed the same decreasing trend in occupational shortages. This is consistent with the general expectation for increased demand for healthcare professionals which in this case was filled and hence decreased occupational shortages.

This finding confirms the existence and persistence of occupational shortages at high skills level (professionals) in the health and welfare sector. In view of labour demand in high skills from health and welfare sector being established in literature, the findings of this study concur with Myers (1996) notion of HTFV as indicators of structural change and signs of a very real 'maladjustment' in the labour market. For example, the earlier findings of Bhorat et al. (2014, p.7) when analysing occupational changes between 2001 and 2012 stated *"a large proportion of growth in high-skilled occupations was due to increased community service employment during the period".*

Technicians and Associate Professionals on the one hand indicated an increasing trend which is above average (37%) in 2020 implying that there was a shortage in this major group to fill in occupational needs. This means that although this major group was strongly demanded, there was no capacity to fill in these occupational shortages. This major group was made up of the Nursing and Midwifery Associate Professionals and Pharmacy-related minor occupational groups which also follow an increasing and decreasing trend respectively. Enrolled Nurse occupation form part of the occupation under this minor group and contributed towards the increased shortages. This, among other factors, is explained by reforms in the

nursing qualifications in South Africa, where the so-called legacy qualifications inherited in 1994 for the training of enrolled nurses with 2 years of training were replaced by a staff nurse with a 3-year college diploma or degree-qualified professional nurses with 4 years of training. This in essence reduced the supply of enrolled nurses to meet up with the high demands.

Objective 3: Severity of the occupational shortages (HTFV) in the Health and Social Sector between 2018 and 2020

Although this objective was addressed only to the private sector organizations, valuable information that can be used for the sector emerged. This implies that most of the HTFVs need medium to long periods of time to fill which can imply a medium to long-term standing problems within the sector. When using the OFO minor group averages, analysis shows that there were six Minor groups that were either equivalent or more than the average of 8 months [medium severity] a position is filled in the health and welfare sector. However, only the Nursing Midwifery Associate Professionals characterised by Enrolled nurse had 10 months average which was above the overall overage.

Objective 4: Key reasons explaining the occupational shortages between 2018 and 2020

The overall (2018-2020) findings from this objective have indicated that supply-reasons such as lack of candidates with required experience at 22% as the major reason for the HTFV followed by change in qualification (20%), scarcity of required qualifications alone (16%), scarcity of both required experience and qualifications (12%) and required specialised skills at 7% mostly contribute to the HTFV. On the one hand, demand related reasons such as competitive salaries in the market at 5% and budget limitations at only 1% form the least according to reasons for the HTFV implying that employers do not find it too difficult to fill vacancies as their result. Scarcity of individuals with both experience and required qualifications have been a long-standing issue for 2018 and 2020 which presents a long-standing problem within the sector. This means that both experience and qualifications best explain the occupational shortages in health and social sector. At the same time, changes in reform such as change in qualifications have serious negative effects on occupational changes as it increased the severity of the Enrolled Nursing occupation above overall average months to fill in the vacant positions. The Registered Nurse (Medical) occupation was mainly unfilled as a result of Covid-19 and this indicates that the health sector may have been under capacitated with these professionals during this time. As such, the latter further exposes the

already limited number of supply in the sector. In the main, the findings confirm that occupational shortages stem from supply-side inadequacies that are primarily independent of demand-side factors but can be characterized as a 'policy problem' in the language of Sutherland (2010).

Objective 5: Locating sub-sector, organization type and size mostly affected by occupational shortages in the health and welfare sector

The overall sectoral distribution of HTFV indicate that occupational shortages are slightly skewed towards the private sector which accounts for 58%. This can signal where the sectoral need is regarding HWSETA's skills development interventions. Figure 16 showed the strong public sector (levy-paying government departments and public entities) decline in HTFV reported from 44% to 11% in 2018 and 2020. This decline is unclear and may require further research to validate whether the decline is indeed due to effective interventions adopted especially that the decline preceded 2020 (COVID-19 pandemic).

The sectoral disaggregation of HTFV according to different skills levels further indicated that the private sector demands more Technicians and Associate Professionals, Managers, Clerical Support Workers and Elementary Occupations while the public sector demands more of Service and Sales Workers Plan and Machine Operators and assemblers as well as Skilled Agricultural, Forestry, Fishery and Craft Related. Although the overall results show that Professionals are mainly required by the public sector (56%), the distribution is also shared with the private sector (44%). The private sector however required more of professionals during Covid which implies increased demand for professionals to deal with the pandemic.

Lastly, this study showed that in overall (2018-2020), the HTFV are predominant mainly for the large organizations followed by the medium and small organizations. The similar trend also holds when looking at individual years. This may be because large employers generally have more vacancies advertised than the small organizations which if unfilled are automatically translated to occupational shortages. Although this does not prescribe skills interventions directed towards the large organizations only, it means an impact directed skills development towards the large employers can make a huge difference.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS OF THE STUDY

The focus of this study was to provide an in-depth analysis of the HTFV for the health and social sector over a period of 3 years. The sector experienced a considerable decline in reporting for the HTFV during the pandemic period that the other years. It can be concluded that there is general persistency in repeated occupational shortages overtime within the sector. Importantly, COVID-19 did not bring up anything new in terms of occupational shortages given that they were already existing in the previous year, it can then be concluded that the pandemic just worsened the shortages for some of the already existing occupational shortages.

Furthermore, there is evidence that the level of skills associated with these occupational shortages are made up of high to intermediate skills levels. There is also evidence that most occupational shortages are mainly characterised with low to medium severity- where the former represents occupations that have been vacant for less than 6 months and the latter refers to those that have been vacant for 7 to 11 months. It can also be concluded that supply-related reasons such as lack of candidates with required experience, scarcity of required qualifications alone, scarcity of both required experience and qualifications and required specialised skills are a major concern for the existing HTFV while demand-related reasons such as competitive salaries in the market and budget limitations are not a major concern towards the HTFV (occupational shortages).

The main recommendations of the study are:

a) Focused interventions by HWSETA on the high-skills level occupations (Nursing professionals) both public and private sector should be targeted during the COVID-19 pandemic.
b) Upskill the employed health workers to transit the workforce towards the high-skill demand opportunities using a long-term approach through bursaries and learnerships
c) Continuation of COVID-19 interventions in the public sector given the evident reduction of HTFV
d) Prioritise partnerships with large employer organizations for both skilling (unemployed) and upskilling of the employed towards professional and managerial occupations given its capacity for demand.
e) Conduct a separate regular survey conducted after a year from reporting HTFV to probe progress on the HTFV. The particular emphasis of this survey should be on

ensuring that HWSETA's interventions indeed close the occupational shortages identified for a specific year.

f) Establish improved modules on the HWSETA ERP where reporting on the HTFV is mandatory and provide a dropdown on definition for all variables on the system to ensure clarity.

g) Promote and Encourage submission of WSP by all HWSETA registered organisations as reported in the ERP through Expression of Interests (EOIs) for Discretionary grant.

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Annexures

Annexure A: Distribution of occupational shortages (All Occupational Shortages)

Number	Occupation Name	2018-2020 HTFV	2018-2020 Ranking	2018 HTFV	2018 Ranking	2019 HTFV	2019 Ranking	2020 HTFV	2020 Ranking
1	322101 ENROLLED NURSE	4806	1	483	5	1959	1	2364	1
2	222108 REGISTERED NURSE (MEDICAL)	4030	2	1247	2	867	5	1916	2
3	221101 GENERAL MEDICAL PRACTITIONER	2210	3	846	3	1087	2	277	4
4	222105 REGISTERED NURSE (CRITICAL CARE AND EMERGENCY)	1316	4	301	6	938	4	77	10
5	222107 REGISTERED NURSE (DISABILITY AND REHABILITATION)	1298	5	1275	1	23	51		306
6	532903 NURSING SUPPORT WORKER	1069	6	717	4		284	352	3
7	133103 DATA MANAGEMENT MANAGER	1048	7		349	1042	3	6	81
8	222101 CLINICAL NURSE PRACTITIONER	750	8	164	9	347	7	239	5
9	222111 REGISTERED NURSE (OPERATING THEATRE)	534	9	63	19	429	6	42	16
10	226201 HOSPITAL PHARMACIST	489	10	240	7	184	10	65	15
11	222103 REGISTERED NURSE (CHILD AND FAMILY HEALTH)	422	11	137	10	199	9	86	8
12	222104 REGISTERED NURSE (COMMUNITY HEALTH)	402	12	34	27	170	11	198	6
13	221210 GENERAL MEDICINE SPECIALIST PHYSICIAN	335	13	103	13	155	13	77	12
14	321101 MEDICAL DIAGNOSTIC RADIOGRAPHER	291	14	113	11	108	16	70	13
15	226203 RETAIL PHARMACIST	261	15	107	12	71	20	83	9
16	222117 MIDWIFE	246	16		253	212	8	34	21
17	222112 REGISTERED NURSE (SURGICAL)	229	17	17	43	143	14	69	14
18	334102 OFFICE ADMINISTRATOR	171	18	4	97	161	12	6	79
19	325801 AMBULANCE OFFICER	170	19	170	8		327		357
20	226902 OCCUPATIONAL THERAPIST	151	20	87	16	27	39	37	17
21	226401 PHYSIOTHERAPIST	150	21	99	14	24	49	27	28
22	263401 CLINICAL PSYCHOLOGIST	146	22	67	18	42	25	37	18

23	134201 MEDICAL SUPERINTENDENT	144	23	32	28	35	28	77	11
24	325301 HEALTH PROMOTION PRACTITIONER	136	24	1	186	125	15	10	62
25	325802 INTENSIVE CARE AMBULANCE PARAMEDIC / AMBULANCE PARAMEDIC	123	25	7	72	4	124	112	7
26	226501 DIETICIAN	119	26	83	17	17	61	19	36
27	221208 PSYCHIATRIST	117	27	23	34	81	19	13	45
28	225101 VETERINARIAN	109	28	3	115	103	17	3	122
29	222201 MIDWIFE	106	29	92	15	6	106	8	72
30	332208 PHARMACY SALES ASSISTANT	104	30	58	20	25	44	21	32
31	222116 NURSE MANAGER	100	33	41	24	26	41	33	22
32	213301 CONSERVATION SCIENTIST	100	32		279	100	18		257
33	222110 REGISTERED NURSE (MENTAL HEALTH)	100	31	45	21	29	36	26	29
34	222113 PAEDIATRICS NURSE	98	34	30	31	31	32	37	19
35	221204 OBSTETRICIAN AND GYNAECOLOGIST	88	35	22	35	47	23	19	35
36	213110 MEDICAL SCIENTIST	79	36	38	25	27	40	14	42
37	263501 SOCIAL COUNSELLING WORKER	78	37	5	88	38	27	35	20
38	321104 SONOGRAPHER	76	38	20	39	27	38	29	24
39	121101 FINANCE MANAGER	74	39	19	40	28	37	27	27
40	263507 ADOPTION SOCIAL WORKER	68	40	34	26	24	48	10	56
41	221203 EMERGENCY MEDICINE SPECIALIST	67	41	29	32	17	62	21	33
42	221206 PAEDIATRICIAN	65	42	21	37	31	29	13	46
43	226302 SAFETY, HEALTH, ENVIRONMENT AND QUALITY (SHE&Q) PRACTITIONER	61	43	6	74	47	24	8	69
44	532901 FIRST AID ATTENDANT	60	44		358	30	33	30	23
45	134101 CHILD CARE CENTRE MANAGER	60	45	1	192	49	22	10	57
46	221209 RADIOLOGIST	60	46	22	36	20	56	18	37
47	541902 EMERGENCY SERVICE AND RESCUE OFFICIAL	57	47	1	225	55	21	1	212
48	221212 FORENSIC PATHOLOGIST	55	48	10	58	25	45	20	34
49	121905 PROGRAMME OR PROJECT MANAGER	53	49	7	70	40	26	6	80
50	226603 SPEECH THERAPIST AND AUDIOLOGIST	51	50	41	23	10	83		323
51	226602 SPEECH PATHOLOGIST	47	51	17	41	16	63	14	43

52	234201 EARLY CHILDHOOD DEVELOPMENT PRACTITIONER	47	52	24	33	13	73	10	64
53	226301 ENVIRONMENTAL HEALTH OFFICER	46	53	42	22	4	136		285
54	221211 SURGEON	44	54	31	30	13	75		328
55	134402 COMMUNITY DEVELOPMENT MANAGER	43	56		344	15	66	28	25
56	142103 RETAIL GENERAL MANAGER	43	55		276	20	54	23	31
57	131101 AGRICULTURAL FARM MANAGER	41	57	10	54	31	30		262
58	226102 DENTIST	40	58	13	50	20	55	7	75
59	122101 SALES AND MARKETING MANAGER	39	60	6	82	30	34	3	124
60	671101 ELECTRICIAN	39	59	20	38	8	92	11	55
61	321206 MEDICAL TECHNOLOGIST	38	61	17	42	5	110	16	40
62	263508 CHILD AND YOUTH CARE WORKER	37	62	11	52	22	52	4	105
63	221201 ANAESTHETIST	36	63	8	66	15	68	13	44
64	325701 ENVIRONMENTAL AND OCCUPATIONAL HEALTH INSPECTOR	36	64		343	26	42	10	63
65	226601 AUDIOLOGIST	35	65	10	57	13	76	12	50
66	111203 LOCAL AUTHORITY MANAGER	33	67	2	143	30	35	1	216
67	121201 HUMAN RESOURCE MANAGER	33	66	2	157	21	53	10	58
68	226101 DENTAL SPECIALIST	32	69	32	29		325		269
69	532203 COMMUNITY HEALTH WORKER	32	68	1	183	25	46	6	87
70	242401 TRAINING AND DEVELOPMENT PROFESSIONAL	31	71	2	155	1	199	28	26
71	111102 PARLIAMENTARIAN	31	70		302	31	31		282
72	226701 OPTOMETRIST	31	72	10	59	8	94	13	48
73	243302 MEDICAL AND PHARMACEUTICAL PRODUCTS SALES REPRESENTATIVE	30	73	5	92	16	64	9	66
74	121206 HEALTH AND SAFETY MANAGER	29	74	4	99	15	67	10	59
75	221224 ORTHOPAEDIC SURGEON	28	75	1	182	26	43	1	209
76	321201 MEDICAL TECHNICIAN	27	77	5	85	7	95	15	41
77	222114 NURSE EDUCATOR	27	76	10	56	5	115	12	49
78	522301 SALES ASSISTANT (GENERAL)	27	79	2	165	13	74	12	52
79	224101 PARAMEDICAL PRACTITIONER	27	78	3	125	16	65	8	73
80	134401 SOCIAL SERVICES MANAGER	27	80	13	49	9	86	5	100

81	341203 SOCIAL AUXILIARY WORKER	26	81	2	141	19	57	5	94
82	243201 COMMUNICATION COORDINATOR	26	82	6	76	14	71	6	89
83	214901 BIOMEDICAL ENGINEER	25	83	15	44	5	116	5	96
84	321114 HEALTH TECHNICICAL SUPPORT WORKER	24	84		287	24	47		297
85	441301 CODING CLERK	23	87		338		338	23	30
86	325201 HEALTH INFORMATION MANAGER	23	89	2	171	5	118	16	38
87	221213 RADIATION ONCOLOGIST	23	85		340	23	50		242
88	222106 REGISTERED NURSE (DEVELOPMENTAL DISABILITY)	23	86	3	118	19	58	1	174
89	242101 MANAGEMENT CONSULTANT	23	88	3	110	18	60	2	135
90	311401 ELECTRONIC ENGINEERING TECHNICIAN	22	90	12	51	6	103	4	101
91	321403 DENTAL THERAPIST	22	91	2	162	14	72	6	88
92	122301 RESEARCH AND DEVELOPMENT MANAGER	21	93	3	111	2	185	16	39
93	221205 OPHTHALMOLOGIST	21	92	3	119	12	78	6	82
94	321121 CARDIOTHORACIC PERFUSION CLINICAL TECHNOLOGIST	20	95		293	10	84	10	61
95	121901 CORPORATE GENERAL MANAGER	20	94	7	71	4	134	9	67
96	321301 PHARMACY TECHNICIAN	19	96	3	122	4	133	12	51
97	251203 DEVELOPER PROGRAMMER	19	99	5	84	5	109	9	68
98	642601 PLUMBER	19	97	6	79	6	105	7	78
99	221103 PUBLIC HEALTH PHYSICIAN	19	100	4	102	10	82	5	92
100	121202 BUSINESS TRAINING MANAGER	19	101	3	113	12	77	4	111
101	213108 MICROBIOLOGIST	19	98	9	63	9	90	1	177
102	432101 STOCK CLERK / OFFICER	18	104	4	104	1	212	13	47
103	718201 BOILER OR ENGINE OPERATOR	18	103		384	18	59		384
104	341201 AUXILIARY COMMUNITY DEVELOPMENT PRACTITIONER	18	102	2	127	10	80	6	85
105	411101 GENERAL CLERK	18	105	9	62	6	102	3	118
106	532202 AGED OR DISABLED CARER	17	107	5	89	5	114	7	77
107	422901 ADMISSIONS CLERK	17	106	9	61	6	101	2	150
108	332301 RETAIL BUYER	16	108	15	45	1	229		365
109	212103 STATISTICIAN	16	109	6	75	3	146	7	76

110	263503 MARRIAGE AND FAMILY COUNSELLOR	16	110	5	90	11	79		253
111	121104 INTERNAL AUDIT MANAGER	15	112	1	198	5	119	9	65
112	133105 INFORMATION TECHNOLOGY MANAGER	15	111	1	227	6	104	8	71
113	222109 REGISTERED NURSE (MEDICAL PRACTICE)	15	113	11	53		277	4	103
114	325301 HEALTH PROMOTION OFFICER	14	116	14	46		313		343
115	Others	1060		350		409		301	
116	522201 RETAIL SUPERVISOR	14	115		294	14	69		244
117	134403 CHILD AND YOUTH CARE MANAGER	14	118	10	55	1	245	3	121
118	111201 DEFENCE FORCE SENIOR OFFICER	14	114		295	14	70		392
119	133102 ICT PROJECT MANAGER	14	117	8	67	1	238	5	91
120	251201 SOFTWARE DEVELOPER	13	122	1	232	2	170	10	60
121	351201 ICT COMMUNICATIONS ASSISTANT	13	125		280	5	117	8	70
122	142103 RETAIL MANAGER (GENERAL)	13	119	13	47		375		300
123	222102 REGISTERED NURSE (AGED CARE)	13	120	13	48		306		364
124	323102 ANCILLARY HEALTH CARE WORKER	13	123	2	164	7	97	4	108
125	263408 COMMUNITY PSYCHOLOGIST	13	124	3	116	7	98	3	117
126	641502 CARPENTER	13	121	6	78	5	111	2	160
127	121205 EMPLOYEE WELLNESS MANAGER	12	126	8	65	1	226	3	120
128	643101 PAINTER	12	128	6	80	3	155	3	113
129	321114 HEALTH TECHNICAL SUPPORT OFFICER	12	127	4	94	8	93		295
130	324102 VETERINARY TECHNICIAN	11	133		321		301	11	53
131	226302 SAFETY	11	132		285		377	11	54
132	111202 GENERAL MANAGER PUBLIC SERVICE	11	134	1	184	2	172	8	74
133	243103 MARKETING PRACTITIONER	11	131	1	189	5	108	5	93
134	341110 ASSOCIATE LEGAL PROFESSIONAL	11	130	1	218	10	81		270
135	263506 PROBATION SOCIAL WORKER	11	135		247	9	89	2	165
136	122103 DIRECTOR OF MARKETING	11	129	5	83	4	130	2	129
137	141201 CAFÉ (LICENSED) OR RESTAURANT MANAGER	10	139		304	10	85		292
138	235601 ICT TRAINER	10	137	1	229	9	87		377

139	263512 COMMUNITY DEVELOPMENT PRACTITIONER	10	138		255	9	88	1	223
140	251101 ICT SYSTEMS ANALYST	10	136	6	81	1	215	3	116
141	532905 THERAPY AIDE	9	145	1	197	2	183	6	90
142	341201 COMMUNITY WORKER	9	144	9	60		369		250
143	422602 MEDICAL RECEPTIONIST	9	140	2	133	2	184	5	97
144	431101 ACCOUNTS CLERK	9	146	1	205	4	139	4	102
145	121201 PERSONNEL / HUMAN RESOURCE MANAGER	9	142	9	64		267		325
146	324101 VETERINARY NURSE	9	147	3	126	2	181	4	110
147	263502 ADDICTIONS COUNSELLOR	9	141	2	140	7	96		251
148	321103 NUCLEAR MEDICINE TECHNOLOGIST	9	143	3	120	4	123	2	128
149	263407 COUNSELLING PSYCHOLOGIST	9	148	2	136	5	112	2	130
150	221225 NEUROSURGEON	8	160		348	2	167	6	84
151	321111 RENAL TECHNICIAN	8	150	2	150		384	6	86
152	134902 LABORATORY MANAGER	8	157		296	3	154	5	99
153	222102 AGED CARE REGISTERED NURSE	8	149	1	212	3	141	4	106
154	134203 PRIMARY HEALTH CARE MANAGER	8	151		318	4	127	4	112
155	321301 PHARMACEUTICAL TECHNICIAN	8	152	8	68		281		311
156	243302 SALES REPRESENTATIVE (MEDICAL AND PHARMACEUTICAL PRODUCTS)	8	155	8	69		353		362
157	242209 ACCOUNTING OFFICER	8	158	1	238	4	131	3	115
158	321401 CLINICAL DENTAL TECHNICIAN	8	156		305	8	91		315
159	112101 DIRECTOR (ENTERPRISE / ORGANISATION)	8	153	1	220	4	125	3	123
160	263405 RESEARCH PSYCHOLOGIST	8	154	4	96	4	121		243
161	214501 CHEMICAL ENGINEER	8	159	4	100	4	132		275
162	221207 PATHOLOGIST	7	166		377	7	99		389
163	134202 NURSING CLINICAL DIRECTOR	7	167		389	6	100	1	167
164	652302 FITTER AND TURNER	7	163	1	233	6	107		372
165	122105 CUSTOMER SERVICE MANAGER	7	168	4	95	1	256	2	137
166	111207 SENIOR GOVERNMENT MANAGER	7	164	2	144	5	113		387
167	221210 SPECIALIST PHYSICIAN (GENERAL MEDICINE)	7	162	5	87	2	191		278

168	325601 CLINICAL ASSOCIATE	7	165	4	103	1	219	2	149
169	641201 BRICKLAYER	7	161	3	123	3	145	1	188
170	214905 AGRICULTURAL ENGINEER	6	169		311		279	6	83
171	321102 MEDICAL RADIATION THERAPIST	6	175	1	194		266	5	98
172	252101 DATABASE DESIGNER AND ADMINISTRATOR	6	171	2	132		387	4	109
173	241101 ACCOUNTANT (GENERAL)	6	181	6	73		272		379
174	143901 FACILITIES MANAGER	6	177	6	77		276		248
175	321109 DIALYSIS TECHNICIAN	6	178	2	148	2	178	2	131
176	263402 EDUCATIONAL PSYCHOLOGIST	6	179		272	5	120	1	197
177	214904 QUANTITY SURVEYOR	6	173	2	151	4	126		281
178	121909 SUSTAINABILITY MANAGER	6	176	2	158	2	187	2	159
179	441903 PROGRAM OR PROJECT ADMINISTRATORS	6	174	2	129	4	129		342
180	111204 SENIOR GOVERNMENT OFFICIAL	6	180	2	134	4	137		235
181	121908 QUALITY SYSTEMS MANAGER	6	170	2	156	3	144	1	181
182	241107 FINANCIAL ACCOUNTANT	6	172	2	142	3	158	1	205
183	221102 RESIDENT MEDICAL OFFICER	5	195		335		303	5	95
184	134904 OFFICE MANAGER	5	183		356	1	200	4	104
185	122201 ADVERTISING AND PUBLIC RELATIONS MANAGER	5	188	1	230		373	4	107
186	134301 SPECIAL CARE ACCOMMODATION MANAGER	5	182		262	2	180	3	125
187	121102 PAYROLL MANAGER	5	192		369	3	148	2	126
188	531101 CHILD CARE WORKER	5	190	1	219	2	179	2	138
189	121902 CORPORATE SERVICES MANAGER	5	187	5	86		295		287
190	325102 ORAL HYGIENIST	5	189	1	178	2	163	2	145
191	333910 BUSINESS SUPPORT COORDINATOR	5	193	5	91		351		381
192	333908 MARKETING COORDINATOR	5	194	2	131	1	235	2	157
193	441601 HUMAN RESOURCES CLERK	5	191	2	163	2	190	1	172
194	651203 FITTER	5	196	3	109	1	194	1	218
195	321402 DENTAL TECHNICIAN	5	186	2	160	3	151		319
196	242202 POLICY ANALYST	5	185	2	170	3	156		276

197	523101 CHECKOUT OPERATOR	5	184	2	145	3	157		290
198	441602 SKILLS DEVELOPMENT ADMINISTRATOR	4	215	1	175		300	3	114
199	232131 ADULT EDUCATION TEACHER	4	207		323	2	193	2	142
200	515103 COMMERCIAL HOUSEKEEPER	4	218		292	4	122		258
201	432103 ORDER CLERK / OFFICER	4	197	4	93		298		256
202	221202 CARDIOLOGIST	4	209	2	161		321	2	156
203	226702 ORTHOPTIST	4	219	1	223	1	196	2	158
204	221223 PAEDIATRIC SURGEON	4	202		252	4	128		346
205	342301 FITNESS INSTRUCTOR	4	213	4	98		381		274
206	132104 ENGINEERING MANAGER	4	214		303	2	189	2	164
207	214401 MECHANICAL ENGINEER	4	208	4	101		364		265
208	111204 SOCIAL AUXILIARY WORKER	4	198		339	4	135		279
209	211101 PHYSICIST	4	204	1	190	2	175	1	166
210	214101 INDUSTRIAL ENGINEER	4	210		283	4	138		259
211	432102 DISPATCHING AND RECEIVING CLERK / OFFICER	4	201	4	105		336		336
212	242402 OCCUPATIONAL INSTRUCTOR / TRAINER	4	212	4	106		311		344
213	234201 CHILD CARE CENTRE MANAGER	4	203		329	4	140		361
214	121301 POLICY AND PLANNING MANAGER	4	211	1	237	3	143		249
215	243402 ICT BUSINESS DEVELOPMENT MANAGER	4	199	3	112	1	213		264
216	335501 DETECTIVE	4	216	3	117	1	241		391
217	516401 ANIMAL ATTENDANT / GROOMER	4	206	1	215	3	152		348
218	122102 SALES MANAGER	4	217	2	172	1	248	1	194
219	312201 PRODUCTION / OPERATIONS SUPERVISOR (MANUFACTURING)	4	205	2	146	2	168		277
220	343401 CHEF	4	200	2	159	2	174		320
221	718905 ENGINEERING PRODUCTION SYSTEMS WORKER	3	238		312		322	3	119
222	226903 PODIATRIST	3	229	1	185		344	2	132
223	226202 INDUSTRIAL PHARMACIST	3	226		277	1	205	2	141
224	134207 COMMUNITY HEALTH MANAGER	3	235	1	191		264	2	144
225	121207 PERSONNEL MANAGER	3	232		365	1	198	2	146

226	132404 WAREHOUSE MANAGER	3	239		333	1	202	2	147
227	333401 PROPERTY MANAGER	3	240	1	204		343	2	155
228	132107 QUALITY MANAGER	3	236		307	2	182	1	171
229	512101 COOK	3	225	3	107		280		286
230	215101 ELECTRICAL ENGINEER	3	223	3	108		283		289
231	811204 CARETAKER / CLEANER	3	245		314	3	142		234
232	514201 SKIN CARE THERAPIST	3	227	1	213	1	214	1	182
233	413201 DATA ENTRY OPERATOR	3	220		326	3	147		326
234	252301 COMPUTER NETWORK AND SYSTEMS ENGINEER	3	228	3	114		390		382
235	242210 BUSINESS ADMINISTRATOR	3	221		381	3	149		254
236	134501 SCHOOL PRINCIPAL	3	231		352	3	150		272
237	531105 CHILD OR YOUTH RESIDENTIAL CARE ASSISTANT	3	241	3	121		354		354
238	352105 MEDICAL AND PHARMACEUTICAL PRODUCTS SALES REPRESENTATIVE	3	224		324	3	153		324
239	325103 DENTAL THERAPIST	3	237	3	124		309		339
240	334101 OFFICE SUPERVISOR	3	230		373	2	164	1	199
241	121204 RECRUITMENT MANAGER	3	244		289	2	161	1	208
242	221215 FAMILY PHYSICIAN	3	243		290	2	186	1	210
243	325101 DENTAL ASSISTANT	3	233	1	240	2	169		333
244	422201 INBOUND CONTACT CENTRE CONSULTANT	3	234	1	236	1	228	1	219
245	311201 CIVIL ENGINEERING TECHNICIAN	3	222	1	180	1	204	1	227
246	811201 COMMERCIAL CLEANER	3	242	2	166		262	1	229
247	422501 ENQUIRY CLERK	2	263		328		328	2	127
248	811101 DOMESTIC CLEANER	2	256		386		386	2	133
249	672102 RADAR MECHANIC	2	292		382		382	2	134
250	121207 PERSONNEL / HUMAN RESOURCE MANAGER	2	297		355		342	2	136
251	242302 SKILLS DEVELOPMENT PRACTITIONER	2	298		391		293	2	139
252	121205 PROGRAMME OR PROJECT MANAGER	2	272		313		268	2	140
253	242403 ASSESSMENT PRACTITIONER	2	267		250		315	2	143
254	422601 RECEPTIONIST (GENERAL)	2	265		284		294	2	148

255	222103 REGISTERED NURSE (COMMUNITY HEALTH)	2	261		360		362	2	151
256	221227 DERMATOLOGIST	2	258		350		348	2	152
257	243202 COMMUNICATION STRATEGIST	2	277		336		329	2	153
258	532201 RESIDENTIAL CARE OFFICER	2	274		268		263	2	154
259	334401 MEDICAL SECRETARY	2	286		379		359	2	161
260	234101 FOUNDATIONAL PHASE SCHOOL TEACHER	2	269		327		282	2	162
261	341103 PARALEGAL	2	288		383		363	2	163
262	221220 UROLOGIST	2	291		342	1	222	1	173
263	242303 HUMAN RESOURCE ADVISOR	2	299		393	1	197	1	184
264	252901 ICT SECURITY SPECIALIST	2	262	1	188		292	1	185
265	331301 BOOKKEEPER	2	250	1	196		331	1	187
266	262202 INFORMATION SERVICES MANAGER	2	294		368	1	243	1	189
267	333301 RECRUITMENT CONSULTANT / OFFICER	2	276		361	1	233	1	191
268	314102 ENVIRONMENTAL SCIENCE TECHNICIAN	2	270		269	1	246	1	200
269	325401 DISPENSING OPTICIAN	2	287		337	2	159		347
270	263404 PSYCHOTHERAPIST	2	253		256	1	257	1	201
271	325501 MASSAGE THERAPIST	2	289	2	128		319		349
272	515301 CARETAKER	2	293	1	181		346	1	202
273	132111 QUALITY TRAINING MANAGER	2	260		309	2	160		241
274	334302 PERSONAL ASSISTANT	2	248	1	214		357	1	203
275	333201 EVENTS MANAGER	2	246		359	2	162		369
276	251302 WEB DEVELOPER	2	278	2	130		379		376
277	143904 SECURITY SERVICES MANAGER	2	273		251	2	165		310
278	242207 COMPLIANCE OFFICER	2	252		375	1	206	1	211
279	121910 WATER ASSET MANAGER	2	280		249	2	166		359
280	641403 CIVIL ENGINEERING CONSTRUCTOR	2	282		270	2	171		296
281	243203 CORPORATE COMMUNICATION MANAGER	2	283	2	135		339		294
282	263510 EMPLOYEE WELLNESS PRACTITIONER	2	281	1	176		308	1	221
283	265403 FILM AND VIDEO EDITOR	2	285		257	2	173		267

284	FALSE	2	300	2	137		393		393
285	261107 LEGAL MANAGER	2	254		364	2	176		268
286	263504 REHABILITATION COUNSELLOR	2	271		245	2	177		255
287	111205 SENIOR POLICE OFFICER	2	295	2	138		365		331
288	216101 ARCHITECT	2	249	2	139		289		307
289	642101 ROOF TILER	2	264	2	147		366		366
290	121904 CONTRACT MANAGER	2	251		362	2	188		313
291	662315 COATING MACHINE OPERATOR	2	290	2	149		318		266
292	226204 AUTHORISED PHARMACIST PRESCRIBER	2	259		281	2	192		283
293	321115 MEDICAL ELECTRONIC EQUIPMENT OPERATOR	2	266	2	152		269		299
294	641901 DEMOLITION TECHNICIAN	2	284	2	169		312		246
295	242307 RECREATION OFFICER	2	257	2	153		299		338
296	321201 MEDICAL LABORATORY TECHNICIAN	2	268	2	154		275		305
297	243202 MARKETING / COMMUNICATION STRATEGIST	2	279	2	167		335		358
298	325102 DENTAL HYGIENIST	2	275	2	168		305		335
299	841201 KITCHENHAND	2	255	1	234	1	224		390
300	261901 ADJUDICATOR	2	247	1	210	1	237		386
301	342204 SPORTS COACH OR INSTRUCTOR	2	296	1	228	1	253		318
302	516305 MORTUARY TECHNICIAN / ASSISTANT	1	347		266		270	1	168
303	243303 EDUCATIONAL PRODUCTS AND SERVICES SALES REPRESENTATIVE	1	301		346		355	1	169
304	653101 AUTOMOTIVE MOTOR MECHANIC	1	373		306		316	1	170
305	122104 DIRECTOR OF MARKETING	1	393		271		349	1	175
306	141201 PROGRAMME OR PROJECT MANAGER	1	346		378		367	1	176
307	671202 MILLWRIGHT	1	379		274		274	1	178
308	251401 APPLICATIONS PROGRAMMER	1	335		298		383	1	179
309	215102 ELECTRICAL ENGINEERING TECHNOLOGIST	1	309		315		285	1	180
310	213111 PHARMACEUTICAL PHYSICIAN	1	351		275		340	1	183
311	243104 MARKET CAMPAIGN ANALYST	1	311		332		323	1	186
312	643202 VEHICLE PAINTER	1	307		370		370	1	190

313	661502 OPTICAL MECHANIC	1	337		376		376	1	192
314	241106 ACCOUNTANT IN PRACTICE	1	340		353		314	1	193
315	333907 PROPERTY PORTFOLIO AND ASSET MANAGER	1	308		367		347	1	195
316	431102 COST CLERK	1	370		286		296	1	196
317	216302 INDUSTRIAL DESIGNER	1	314		331		291	1	198
318	121202 PROGRAMME OR PROJECT MANAGER	1	378		263		330	1	204
319	111402 TRADE UNION REPRESENTATIVE	1	333		316		372	1	206
320	241201 INVESTMENT ANALYST	1	344		357		378	1	207
321	133102 RESEARCH AND DEVELOPMENT MANAGER	1	358		341		273	1	213
322	134906 PRACTICE MANAGER	1	316		300		307	1	214
323	351302 GEOGRAPHIC INFORMATION SYSTEMS TECHNICIANS	1	350		260		389	1	215
324	861202 SALES MANAGER	1	391		258		391	1	217
325	653303 MECHANICAL FITTER	1	317		374		374	1	220
326	121204 INTERACTIVE AND DIRECT MARKETING STRATEGIST	1	349		273		380	1	222
327	671206 ELECTRICAL EQUIPMENT MECHANIC	1	381		310		320	1	224
328	311101 CHEMISTRY TECHNICIAN	1	352		259		310	1	225
329	684305 QUALITY CONTROLLER (MANUFACTURING)	1	383		248		290	1	226
330	121909 PROGRAMME OR PROJECT MANAGER	1	319		390		278	1	228
331	241104 EXTERNAL AUDITOR	1	334		351		368	1	230
332	242211 INTERNAL AUDITOR	1	374		387		392	1	231
333	243202 CUSTOMER SERVICE MANAGER	1	355		288	1	209		232
334	242204 CORPORATE TREASURER	1	360		371	1	250		233
335	242402 FACILITATOR	1	392		320	1	201		236
336	212102 MATHEMATICIAN	1	388	1	208		332		237
337	143107 FITNESS CENTRE MANAGER	1	364	1	217		385		238
338	263403 ORGANISATIONAL PSYCHOLOGIST	1	312		372	1	255		239
339	341301 RELIGIOUS ASSOCIATE PROFESSIONAL	1	338		278	1	251		240
340	132301 CONSTRUCTION PROJECT MANAGER	1	341	1	207		304		245
341	233108 JUNIOR SECONDARY SCHOOL TEACHER (GRADES 8 - 9)	1	310		325	1	195		353

342	132401 SUPPLY AND DISTRIBUTION MANAGER	1	385		317	1	210		247
343	242102 ORGANISATION AND METHODS ANALYST	1	356	1	209		265		252
344	243102 MARKET RESEARCH ANALYST	1	323		330	1	203		288
345	134204 SECONDARY HEALTH SERVICES MANAGER	1	305		244	1	207		351
346	134916 OPERATIONS FOREMAN (NON MANUFACTURING)	1	324	1	222		333		260
347	862202 HANDYPERSON	1	376		392	1	208		332
348	214103 PRODUCTION ENGINEER	1	357	1	179		350		261
349	214201 CIVIL ENGINEER	1	361	1	195		356		263
350	121202 REGISTERED NURSE (COMMUNITY HEALTH)	1	386		265	1	211		337
351	111203 LOCAL OR PROVINCIAL GOVERNMENT LEGISLATOR	1	362		388	1	216		340
352	311102 WATER QUALITY ANALYST	1	354		261	1	242		271
353	121903 BUSINESSES SERVICES AND ADMINISTRATION MANAGERS NOT ELSEWHERE CLASSIFIED	1	327		246	1	217		303
354	214402 MECHANICAL ENGINEERING TECHNOLOGIST	1	315		301	1	254		273
355	241101 GENERAL ACCOUNTANT	1	328		347	1	218		383
356	661501 GLASS MAKER	1	375	1	173		288		302
357	524903 SALES CLERK / OFFICER	1	325	1	174		352		352
358	121103 CREDIT MANAGER	1	331		282	1	220		370
359	121203 PROGRAMME OR PROJECT MANAGER	1	302		267	1	221		363
360	121205 MPLOYEE WELLNESS MANAGER	1	371		297	1	240		280
361	325705 SAFETY INSPECTOR	1	303		345	1	223		355
362	243301 SALES REPRESENTATIVE / SALESMAN (INDUSTRIAL PRODUCTS)	1	359	1	177		341		360
363	441601 HUMAN RESOURCE CLERK	1	382		264	1	234		284
364	251301 MULTIMEDIA SPECIALIST	1	369		354	1	225		374
365	251901 INFORMATION AND COMMUNICATIONS TECHNOLOGY SERVICE MANAGER	1	377		254	1	227		304
366	141201 DATA MANAGEMENT MANAGER	1	342		308	1	230		356
367	226304 FOOD INSPECTOR	1	329		291	1	231		291
368	321112 INTENSIVE CARE TECHNICIAN	1	380	1	216		324		293
369	431203 STATISTICAL CLERK	1	372		334	1	232		334

370	134915 OPERATIONS MANAGER (NON MANUFACTURING)	1	318	1	187		317		350
371	642302 PLASTERER	1	367		242	1	252		298
372	231101 UNIVERSITY LECTURER	1	345		319	1	236		345
373	321118 ORTHOTIST OR PROSTHETIST	1	390	1	226		271		301
374	262201 LIBRARIAN	1	321		366	1	239		308
375	243303 SALES REPRESENTATIVE (EDUCATIONAL PRODUCTS AND SERVICES)	1	363	1	193		361		368
376	226502 NUTRITIONIST	1	365		299	1	260		309
377	133106 INFORMATION SYSTEMS DIRECTOR	1	384		363	1	244		321
378	323102 SOCIAL WORKER	1	313	1	199		297		327
379	111101 LOCAL OR PROVINCIAL GOVERNMENT LEGISLATOR	1	326		243	1	247		312
380	235102 EDUCATION OR TRAINING REVIEWER	1	322	1	200		360		373
381	341202 DISABILITIES SERVICES OFFICER	1	332	1	224		371		314
382	111205 PROGRAMME OR PROJECT MANAGER	1	304	1	201		334		329
383	341204 HEALTH AND SAFETY MANAGER	1	336		394	1	249		316
384	332302 PURCHASING OFFICER	1	389	1	202		337		367
385	321401 DENTAL PROSTHETIST	1	353	1	211		287		317
386	241102 MANAGEMENT ACCOUNTANT	1	330	1	203		286		385
387	351301 COMPUTER NETWORK TECHNICIAN	1	348		322	1	259		322
388	333903 SALES REPRESENTATIVE (BUSINESS SERVICES)	1	306	1	206		345		375
389	242211 INTERNAL AUDIT MANAGER	1	368		385	1	261		330
390	671202 OFFICE SUPERVISOR	1	339		380	1	258		380
391	226905 BIOKINETICIST	1	387	1	231		302		341
392	143109 CLUB MEMBERSHIP MANAGER	1	366	1	221		326		378
393	811202 HEALTHCARE CLEANER	1	343	1	235		388		388
394	235101 EDUCATION OR TRAINING ADVISOR	1	320	1	239		358		371
395	242302 SKILLS DEVELOPMENT FACILITATOR / PRACTITIONER	1	394	1	241		394		394
396	**Grand Total**	**25717**	**395**	**7786**	**395**	**10461**	**395**	**7470**	**395**