MINING QUALIFICATIONS AUTHORITY

MINING QUALIFICATIONS AUTHORITY (MQA)

8 YEAR TRENDS ANALYSIS

WORKPLACE SKILLS PLAN AND ANNUAL TRAINING REPORTS FOR 2010-2017

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ACRONYMS

AET	Adult Education and Training
ATR	Annual Training Report
CETA	Construction Education and Training Authority
CLAS	Cement, Lime, Aggregates and Sand
CPHA	Contractors Plant Hire Association
DHET	Department of Higher Education and Training
DMR	Department of Mineral Resources
DoL	Department of Labour
IDZ	Industrial Development Zone
KPI	Key Performance Indicators
MERSETA	Manufacturing, Engineering and Related Services Sector Education and Training Authority
MMS	Mining and Minerals Sector
MQA	The Mining Qualifications Authority
NSDS	National Skills Development Strategy
OFO	Organising Framework for Occupations
PGM	Platinum Group Metals
QCTO	Quality Council for Trades and Occupations
SDA	Skills Development Act
SETA	Sector Education and Training Authority
SIC	Standard Industrial Classification
SSETA	Services Sector Education and Training Authority
WSP	Workplace Skills Plan

FOREWORD

The Mining Qualifications Authority (MQA) prides itself in ensuring that the Mining and Mineral Sector (MMS) remains at the cutting edge of skills development. In keeping up with this progression, the MQA commissioned a research study on the trends analysis of the Workplace Skills Plans (WSPs) and Annual Training Reports (ATRs) for the period 2010-2017. WSPs-ATRs are at the core to the SETAs mandate. Through the WSP-ATR, the SETA is able to outline current and future learning and qualifications needs of the sector and develop interventions that address the skills needs of the sector.

One of the MQA strategic objectives is to support objective decision-making for skills development through research in the sector. The MQA intends contributing to the body of skills development knowledge within the MMS by identifying the skills needs of the sector, plan, manage and report on appropriate responses to identified needs. The improvement of the skills of the mining and minerals sector workforce is imperative for the economic development of the sector, for the improvement of the health and safety record and for the growth and wellbeing of all employees.

The main purpose of this research report is to provide an updated trends and analysis of the sector in terms of the geographic location, size, and composition of the organisations that have submitted WSP-ATR to the MQA during the period 2010-2017. This report further profiles the MMS workforce as well as the trends in training offered during the period under review. It is the result of not only a thorough research process, but also of extensive data analysis of the WSP-ATR submissions as a primary data source.

Through research, the MQA continues to make informed strategic decisions that embrace its commitment to address the skills development priorities and to achieve the goals and objectives of the mining and minerals sector.

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Date: 11/03/2019

EXECUTIVE SUMMARY

Introduction

This report was commissioned by the Mining Qualifications Authority (MQA) and is a trends analysis of information that employers in the Mining and Minerals Sector (MMS) submitted as part of their mandatory grant applications during the period 2010 to 2017. The report provides the composition of organisations that made WSP-ATR submissions to the MQA during this period in terms of geographic location, subsector and size. Employment figures and patterns within the participating organisations are examined while scarce and critical skills in the sector are reviewed. In line with the MQA's skills development mandate, the report also provides details of training that was planned and undertaken during the period under review.

In terms of the methodological approach, this research was conducted through desktop research in which qualitative and quantitative data was collected from the MQA data sets of workplace plans and annual training reports of employers spanning from 2011 to 2017.

Key Findings

- The annual average of organisations that participated in mandatory grants applications over the 8 year period from 2010-2017 was 621, with about 9 out of every 10 of these submissions being approved. The majority of the submissions were consistently from Gauteng which accounted for an average of 45.4% over the period under review. This trend was in line with the fact that the majority of the participating employers were from the relatively smaller companies that fall under the Other Mining and the Services Incidental to Mining subsectors, the majority of which are located in Gauteng.
- The number of employees reported in the WSP-ATR submissions averaged 471 988 per year and 90.5% of them were employed on a permanent basis. The distribution of employees by gender shows that male employees outnumbered females by approximately 7 to 1.
- The racial distribution of employees remained virtually unchanged throughout the period, with Africans making up ±85% of the workforce and Whites following as a distant second at around 12%. The proportion of non-South Africans employed in the sector stood at 16.1% in 2011 but decreased consistently, even though marginally, over the following 6 years to reach 11.8% in 2017. In 2017 employment of foreign labor is skewed to the semi-skilled and unskilled occupational levels representing 92% from a sample of 63145 foreign nationals.

- Scarce and critical skills vacancies over the period averaged 3 123 per year. On average, the highest number of skills shortage in each of the years was experienced in relation to Plant and Machine Operators and Assemblers (30.6%) which constituted almost a third of all the reported scarce vacancies. Shortages of Skilled Agricultural, Forestry, Fishery, Craft and Related Trades Workers (25.2%) came second on the scarcity list and were followed by those relating to Technicians and Associate Professionals (16.5%). In addition to listing the number of scarce vacancies, the employers gave reasons for the reported skills scarcity and there was almost equal attribution of the skills shortage to both absolute scarcity (50.7%) and relative scarcity (45.3%) factors.

- The training implemented interventions average over the seven years, excluding induction, refresher and post leave training, was 625296 against an average employee total of 471 988 during the same period. This indicates that some of the employees tended to undergo more than one type of training in a year and could be seen as positive in terms of multiskilling.

Conclusions

The number of organisations taking part in the mandatory grants applications was consistently around 600 per year during the period under review and this figure is estimated to be about a third of all the organisations that are registered with the MQA. The MQA would do well to review this submission ratio and make an informed decision on whether or not additional efforts are required to increase the participation rate in view of the broader sector priorities and plans.

The incremental decrease in the proportion of non-South Africans employed in the sector can be seen as evidence of effective skills development to address skills shortages in the sector and, if sustained, should continue to reduce dependence on imported skills.

The dominant reason for the vacancies in the sector remained that of an absolute shortage of skilled personnel, especially amongst plant and machine operators and assemblers and other skilled trade workers. This highlights the importance of concerted and targeted skills development initiatives in the sector.

CHAPTER 1 - INTRODUCTION

1.1 Background

The Mining Qualifications Authority (MQA) is a public entity established in terms of Section 45 of the Mine Health and Safety Act 29 of 1996 (MHSA) and is regarded as a Sector Education and Training Authority (SETA) in terms of the Skills Development Act 97 of 1998 (SDA). A mandate given to the SETAs is to facilitate the delivery of sector specific skills interventions that help achieve the goals of the National Skills Development Strategy (NSDS) III. In this regard, Workplace Skills Plans (WSPs) and Annual Training Reports (ATRs) are at the core of the SETA as the authority is able to identify current and future learning and qualifications needs of the sector and, consequently, develop interventions that address the skills needs of the sector.

1.2 Objectives of the Analysis

This report is in furtherance of the MQA strategic objective to support evidence-based decision making in skills development in the sector. The report contributes to the body of knowledge within the mining and minerals sector through a trends analysis of information that employers in the sector submitted to the MQA as part of their mandatory grant applications in the period 2010-2017. The report covers the following specific areas:

- Examination of trends in the WSP-ATR submissions received by the MQA during the period 2010-2017 and profiling of the submissions by company size, location, and subsector.
- Profiling of the MMS in terms of employment and the distribution of employees according to subsector, province, company size, population group, age, gender, occupations, educational levels, disability, and citizenship as reported through WSP-ATR submissions during the period under review.
- Listing of scarce skills reported in the WSP-ATR submissions for the MMS during the period with a focus on an analysis of the reported scarce skills by subsector, province and occupation as well as providing reasons for the scarcity.
- Detailing of trends pertaining to skills and training needs reported in the WSP-ATR submissions over the period and providing a comparison of the training reported versus training planned for the period.

1.3 Data Preparation and Challenges

The trends analysis was based on information extracted from the MQA data system, particularly information submitted through the WSPs and ATRs. To facilitate the analysis, the

information was first prepared through a series of data editing and normalisation steps which included determining and filling in some missing key variables such as subsector and location details of some of the organisations. All this was done without changing the content or meaning of the data. However, some data challenges were still encountered and were mainly due to some changes in the format and content of the information captured in the reporting templates over the years. It is for this reason that the commencing year in the analysis (i.e. 2010) is only reported in the chapter relating to WSP-ATR submissions but omitted in the rest of the report. Where other data gaps or incompatibilities were encountered, this is highlighted accordingly in the relevant parts of the report.

1.4 Subsectors of the MMS

The Standard Industrial Classification (SIC) codes are critical to the identification of subsectors that fall under the MMS and there are 44 SIC codes directly linked to this sector. In addition, although the Department of Labour (DoL) defines the sectors to be served by the respective SETAs, some overlaps do occur and some organisations not strictly involved in mining activities, but closely associated with the sector (i.e. Services Incidental to Mining) are also registered with the MQA.

In order to facilitate analysis of data covering such a wide spectrum of SIC codes, organisations in the sector have been categorised into the following nine subsectors:

Throughout the report, the findings are presented according to these subsectors.

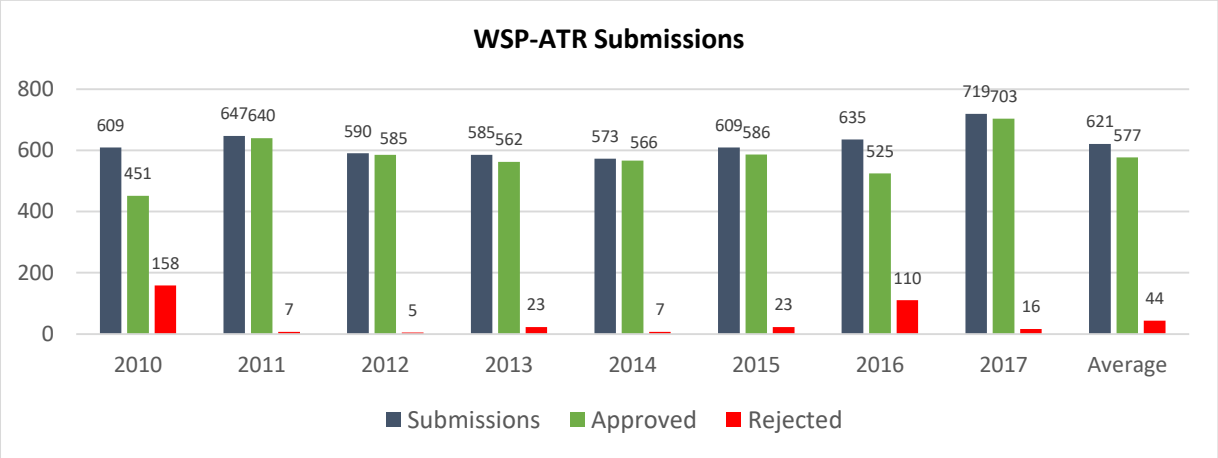
CHAPTER 2 – PARTICIPATION IN WSP-ATR SUBMISSIONS

2.1 Introduction

This chapter provides trends in relation to WSP-ATR submissions to the MQA during the period 2010-2017. The purpose is to review and show the nature and patterns of the submissions in terms of geographic location, size, subsector and composition of the MMS organisations that took part over the eight-year period.

2.2 WSP-ATR Submissions

The number of organisations that participated in WSP-ATR submissions during the period under review is shown in Figure 1. Following a minor decline in 2012 up to and including 2014, the number of submissions inclined above the 600 mark in 2015 and 2016 peaking at 719 total submissions in 2017 of which 703 were approved.



Year	2010	2011	2012	2013	2014	2015	2016	2017	Average
Submissions	609	647	590	585	573	609	635	719	621
% change	-	+6.2%	-8.8%	-0.8%	-2.1%	+6.3%	+4.3%	+13.2	-

Figure 1 - WSP-ATR submissions (approvals and rejections): 2010-2017

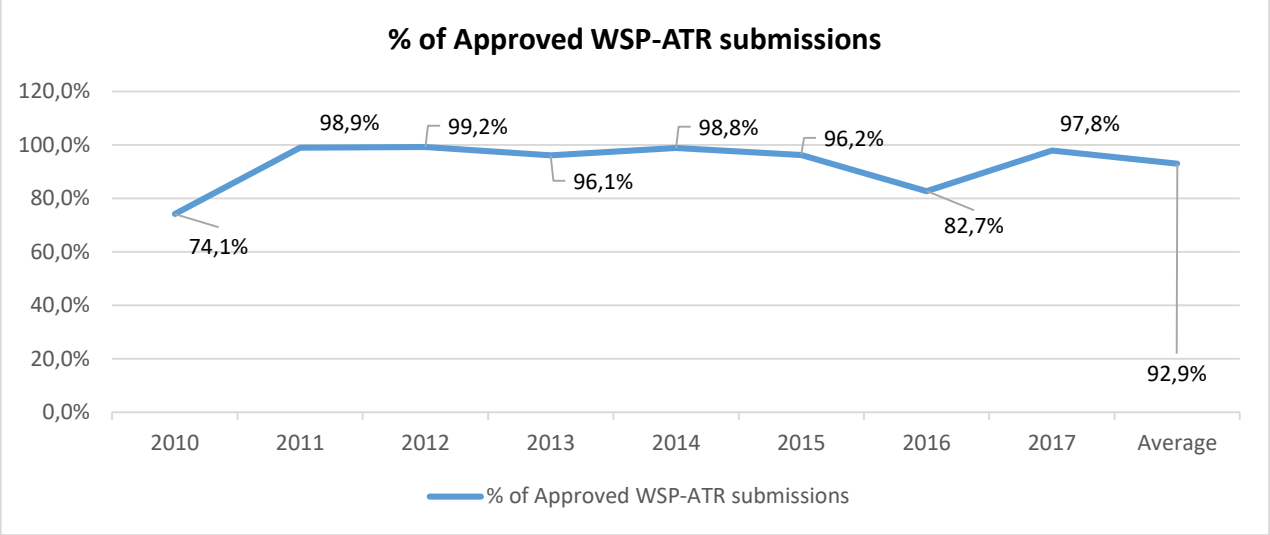


Figure 2 - WSP-ATR submissions (percentage of submission approvals): 2010-2017

On average, 92.9% of the submissions received during the 8 years were approved. From 2010 till 2017 the percentage of approved submissions has been above 90 percent with the exception of 2010 and 2016 which was 74.1% and 82.7% respectively.

The 2017 reasons for non-approval of WSP and ATR for companies and their respected size is tabled below.

Table 1 - WSP-ATR rejected submissions reasons: 2017

Reasons	Company Sizes	No. of Companies
Source Data Query	Small	3
	Medium	2
Missing All Signatures	Medium	3
	Small	1
Missing Union Signature	Large	2
	Medium	1
Missing Employee Rep Signature	Medium	1
Missing CEO Signature	Medium	1
Missing CFO Signature	Small	1
Incomplete Verification Document	Small	1

2.3 WSP-ATR Submissions by Subsector

As shown in Table 2 below, Other Mining and Services Incidental to Mining had the largest count of organisations participating in the WSP-ATR submissions process across the 8 years. On average, these two subsectors accounted for half (51.1%) of the submissions during this period.

Table 2 - WSP-ATR submissions by subsector: 2010-2017

Subsectors (in order of highest submissions average)	2010		2011		2012		2013		2014		2015		2016		2017		Average	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Other Mining	189	31.0	128	19.8	135	22.9	160	27.4	181	31.6	207	34.0	220	34.6	219	30.5	180	28.9
Services Incidental to Mining	110	18.1	158	24.4	137	23.2	139	23.8	122	21.3	133	21.8	147	23.1	148	20.6	137	22
Coal Mining	71	11.7	91	14.1	91	15.4	88	15.0	87	15.1	83	13.6	87	13.7	122	17	90	14.4
CLAS	62	10.2	87	13.4	76	12.9	67	11.5	69	12.0	64	10.5	70	11.0	76	10.6	71	11.5
PGM Mining	21	3.4	23	3.6	24	4.1	24	4.1	22	3.8	29	4.8	24	3.8	51	7.1	27	4.4
Jewellery Manufacturing	69	11.3	68	10.5	47	8.0	35	6.0	30	5.2	33	5.4	27	4.3	34	4.7	43	6.9
Diamond Mining	24	3.9	35	5.4	30	5.1	28	4.8	18	3.1	16	2.6	21	3.3	31	4.3	28	4.5
Gold Mining	46	7.6	38	5.9	36	6.1	29	5.0	31	5.4	31	5.1	27	4.3	23	3.2	33	5.2
Diamond Processing	17	2.8	19	2.9	14	2.4	15	2.6	13	2.3	13	2.1	12	1.9	15	2.1	15	2.4
Total	609	100	647	100	590	100	585	100	573	100	609	100	635	100	719	100	623	100

Figure 2 - WSP-ATR submissions percentage by subsector: 2010-2017

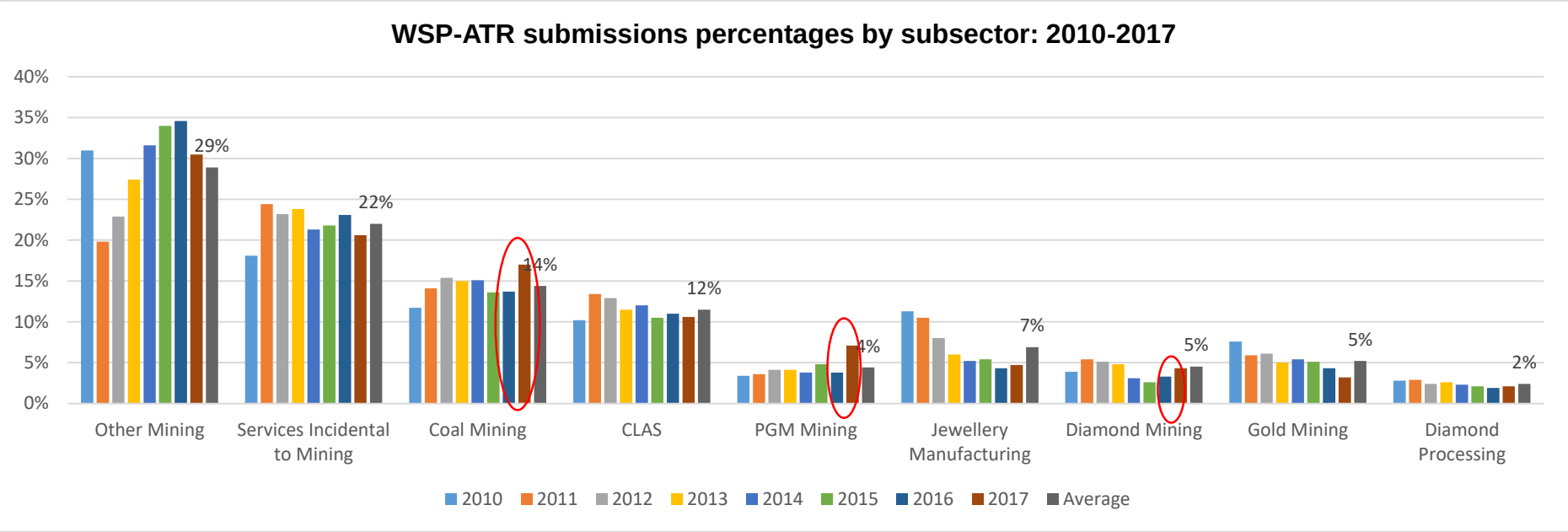


Figure 2 above highlights that since the 2016 analysis there has been a notable increase in Coal Mining, PGM Mining and Diamond Mining submissions. This is encouraging and should be applauded at the relevant stakeholder engagement sessions.

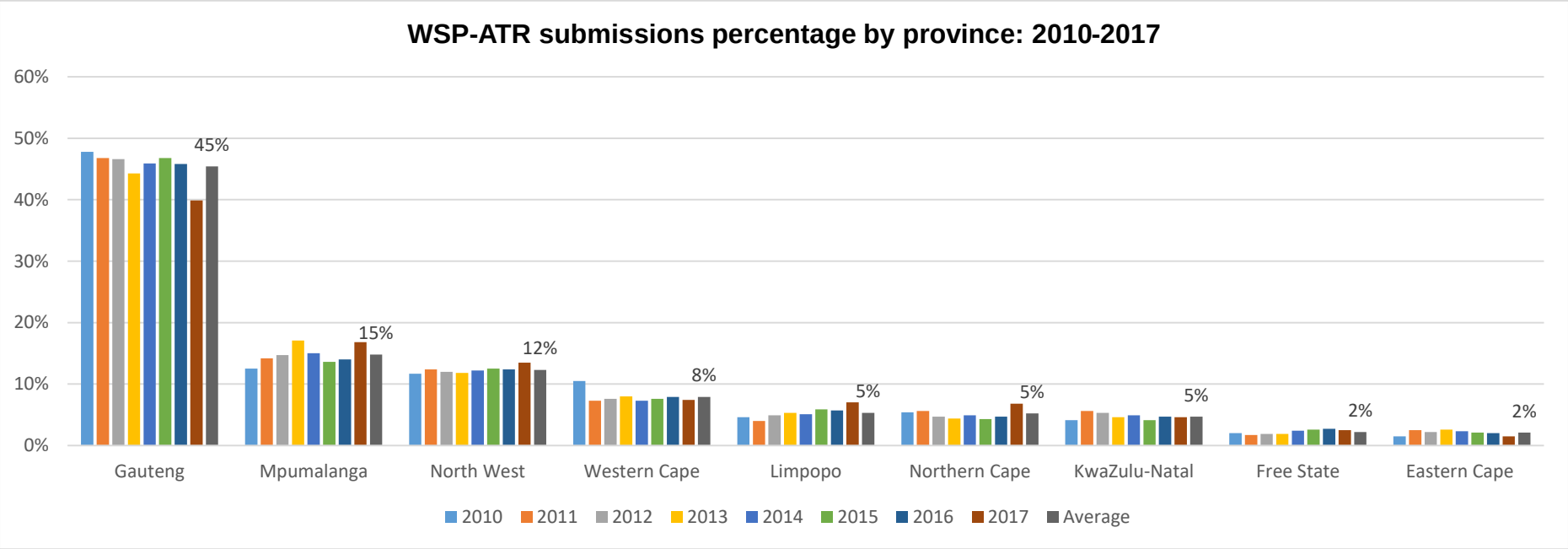
2.4 Submissions by Province

The provincial breakdown of the WSP-ATR submissions for the period 2010-2017 is presented in Table 3 below. Employers based in Gauteng constituted the highest number of WSP-ATR submissions with an average of 45.4% over the period of review. At the other end, the Free State and the Eastern Cape provinces provided the least number of participating organisations at a combined average of 4.3%.

Table 3 - WSP-ATR submissions by province: 2010-2017

Provinces (in order of highest submissions average)	2010		2011		2012		2013		2014		2015		2016		2017		Average	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Gauteng	291	47.8	303	46.8	275	46.6	259	44.3	263	45.9	285	46.8	291	45.8	287	39.9	282	45.4
Mpumalanga	76	12.5	92	14.2	87	14.7	100	17.1	86	15.0	83	13.6	89	14.0	121	16.8	97	14.8
North West	71	11.7	80	12.4	71	12.0	69	11.8	70	12.2	76	12.5	79	12.4	97	13.5	77	12.3
Western Cape	64	10.5	47	7.3	45	7.6	47	8.0	42	7.3	46	7.6	50	7.9	53	7.4	49	7.9
Limpopo	28	4.6	26	4,0	29	4.9	31	5.3	29	5.1	36	5.9	36	5.7	50	7	33	5.3
Northern Cape	33	5.4	36	5.6	28	4.7	26	4.4	28	4.9	26	4.3	30	4.7	49	6.8	32	5.2
KwaZulu-Natal	25	4.1	36	5.6	31	5.3	27	4.6	28	4.9	25	4.1	30	4.7	33	4.6	29	4.7
Free State	12	2.0	11	1.7	11	1.9	11	1.9	14	2.4	16	2.6	17	2.7	18	2.5	14	2.2
Eastern Cape	9	1.5	16	2.5	13	2.2	15	2.6	13	2.3	13	2.1	13	2.0	11	1.5	13	2.1
Total	609	100	647	100	590	100	585	100	573	100	609	100	635	100	719	100	621	100

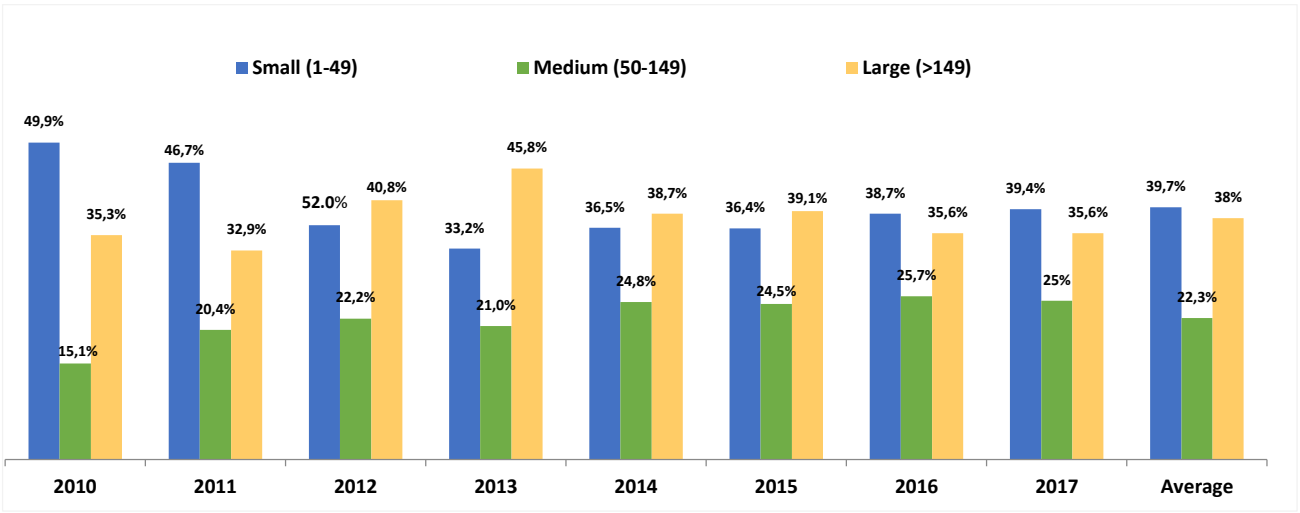
Figure 3 - WSP-ATR submissions percentage by province: 2010-2017



According to Figure 3 above, Gauteng has always held the lion's share of submissions with an average of 45%. The Mpumalanga province averaged 15% over the 8 year period of analysis followed closely by North West province with 12%. The remaining 6 provinces each had less than a 10% contribution to submissions.

2.5 Submissions by Company Size

The WSP-ATR submissions made during the period under review are presented by company size in Figure 2 below. Although the actual percentages tended to vary slightly from year to year, the general trend was that of almost equal participation by small (1-49) sized companies and large (>149) companies, as can be seen in the period averages of 39.7% and 38% respectively.



Year	2010	2011	2012	2013	2014	2015	2016	2017	Average
Small (1-49)	302	302	218	194	209	222	246	283	247
Medium (50-149)	92	132	131	123	142	149	163	180	139
Large (>149)	215	213	241	268	222	238	226	256	235
Total	609	647	590	585	573	609	635	719	621

Figure 4 - WSP-ATR submissions by company size: 2010-2017

2.6 Conclusions

The number of organisations taking part in the WSP-ATR submissions is consistently around 600 per year during 2010-2016 and has now surpassed 700 submissions in 2017. The logical assumption associated with this increase is that WSP workshops have facilitated learning and contributed to increased submissions.

This figure is estimated to be about a third of all the organisations that are registered with the MQA. The MQA will continuously review this submission ratio and make informed decisions on additional efforts that are required to increase the participation rate in view of the broader sector priorities and plans.

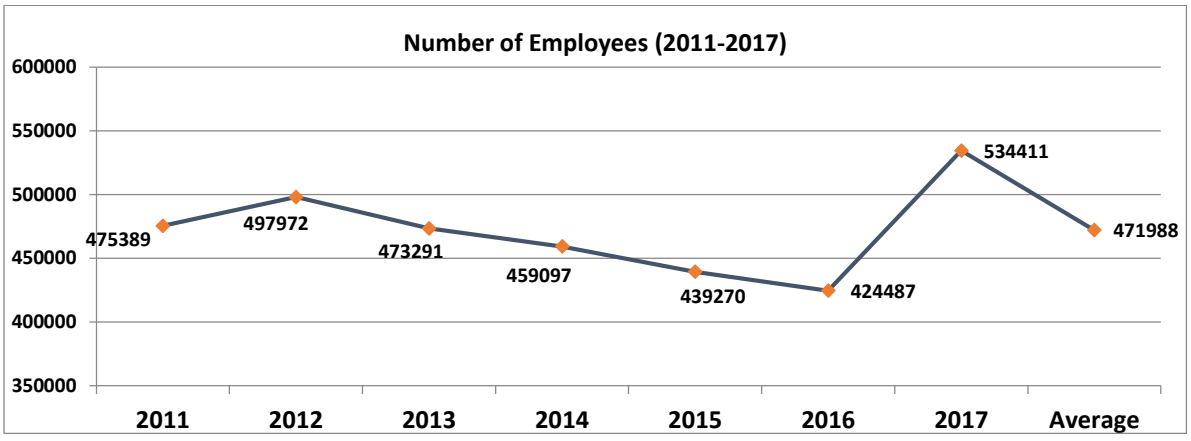
CHAPTER 3 – PROFILE OF THE MINING AND MINERALS SECTOR

3.1 Introduction

The focus of this chapter is the analysis of employment trends within the MMS as reflected in information submitted by the employers during the period 2011-2017. This includes reviewing the employment figures and distributions by subsector, province and organisation size. The analysis further profiles the workforce in terms of occupation, population group, age group, gender, nationality and disability status. Due to unavailability of comparable data for the year 2010, analysis pertaining to this chapter is limited to the period 2011-2017.

3.2 Overview of Employment Trends

The number of employees reported in the WSP-ATR submissions for each of the years in the analysis is presented in Figure 5 below. As the trend line shows, there is a consistent decrease in the number of employees at an average annual drop of about 3.9% from 2013 to 2016, however, 2017 has shown some promise with a 25.9% increase in number of employees which is informed by the increase in the number of submissions for 2017.



Year	2011	2012	2013	2014	2015	2016	2017
Total	475389	497972	473291	459097	439270	424487	534411
% change	-	+4.8%	-4.9%	-3.0%	-4.3%	-3.4%	+25.9%

Figure 5 - Number of employees (2011-2017)

3.3 Number of Employees by Employment Status

Table 4 below provides a breakdown of the employee numbers according to their employment status. Throughout the period under review, the overwhelming majority (90.5%) of the workers were employed on a permanent basis.

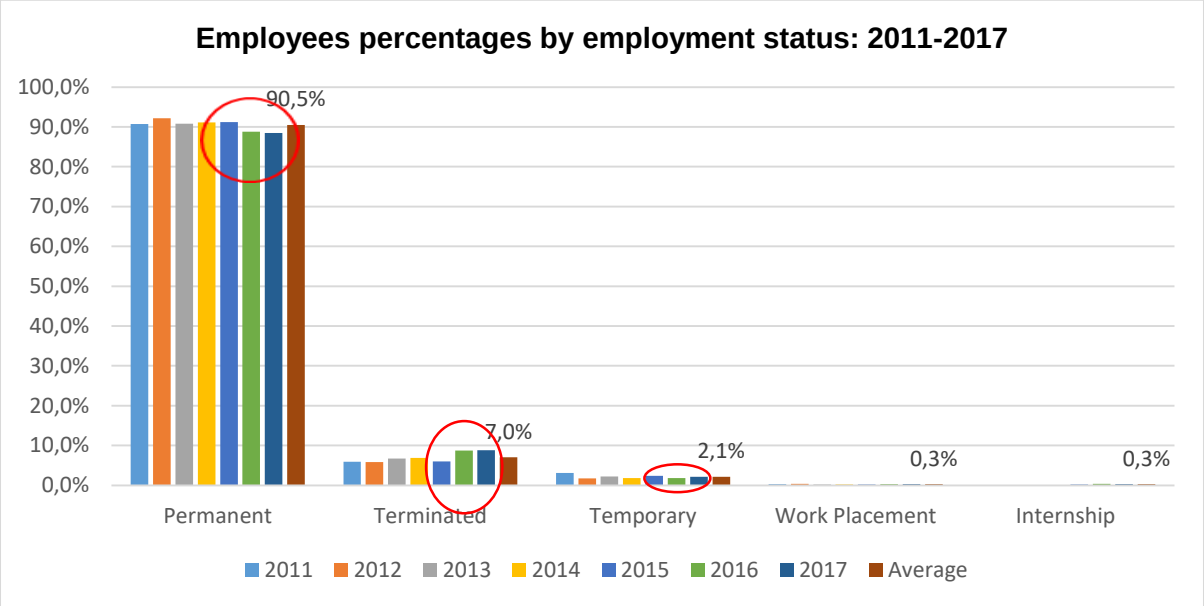
Table 4 - Number of employees by employment status: 2011-2017

Employment status (in order of highest number of employees)		2011	2012	2013	2014	2015	2016	2017	Average
Permanent	**N**	**431150**	**459178**	**429926**	**418180**	**400716**	**377072**	**473091**	**427045**
	%	90.7	92.2	90.8	91.1	91.2	88.8	88.5	90.5
Terminated	**N**	**28252**	**28701**	**31801**	**31979**	**26345**	**37016**	**46829**	**32989**
	%	5.9	5.8	6.7	6.9	6.0	8.7	8.8	7.0
Temporary	**N**	**14555**	**8341**	**10599**	**8283**	**10653**	**7441**	**10974**	**10121**
	%	3.1	1.7	2.2	1.8	2.4	1.8	2.1	2.1
Work Placement	**N**	**1432**	**1752**	**965**	**655**	**648**	**1449**	**1850**	**1250**
	%	0.3	0.4	0.2	0.2	0.2	0.3	0.3	0.3
Internship[1]	**N**	**-**	**-**	**-**	**-**	**908**	**1509**	**1667**	**1361**
	%	-	-	-	-	0.2	0.4	0.3	0.3
Total	**N**	**475389**	**497972**	**473291**	**459097**	**439270**	**424487**	**534411**	**471988**
	%	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

The spike in 2016 to 2017 for terminated employees requires investigation which will be done through the Ex-miners Project. Insight from this project will provide details on which occupational groups were affected most by terminations through retrenchments and reasons related to it.

[1] Not reported prior to 2015

Figure 6 - Percentage of employees by employment status (2011-2017)



As depicted on Figure 6 above, from 2015 to date, permanent employment has decreased (from 91.2% to 88.5%) whilst the terminated status has increased (from 6% to 8.7%) and temporary employment has decreased (from 2.4% to 2.1%).

This is to an extent representative of the MMS shrinking as the access to natural resources become increasingly difficult to explore and demand (international and domestic) for commodities decrease. Cost of labour seems to be a growing concern as well as the nationality of the employable labor force.

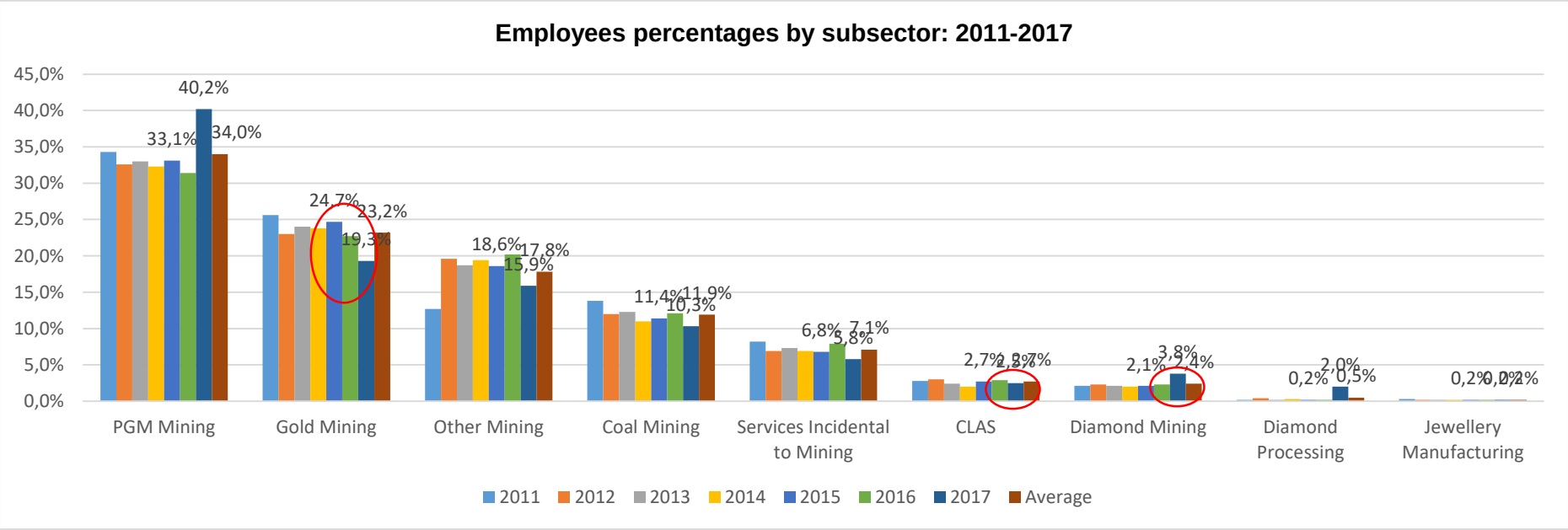
3.4 Employment by Subsector

The breakdown of employment by subsector is presented in Table 5 below where the yearly average over the 7 years was 471 988. The PGM Mining subsector is leading with 40.2% in 2017 and an average of 34% of the reported employment figures and was followed by Gold Mining with about 19.3% in 2017 and 23.2% on average of all the employees.

Table 5 - Number of employees by subsector: 2011-2017

Subsector (in order of highest number of employees)	2011		2012		2013		2014		2015		2016		2017		Average	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
PGM Mining	163058	34,3	162339	32,6	156186	33,0	148288	32,3	145549	33,1	133490	31,4	214684	40.2	160513	34,0
Gold Mining	121700	25,6	114534	23,0	113590	24,0	109265	23,8	108667	24,7	96536	22,7	102988	19,3	109611	23,2
Other Mining	60374	12,7	97603	19,6	88505	18,7	89065	19,4	81622	18,6	85948	20,2	84824	15,9	83992	17,8
Coal Mining	65604	13,8	59757	12,0	58215	12,3	54173	11,0	50265	11,4	51392	12,1	55230	10,3	56377	11,9
Services Incidental to Mining	38982	8,2	34360	6,9	33604	7,3	33514	6,9	30059	6,8	33388	7,9	30957	5,8	33552	7,1
CLAS	13311	2,8	14939	3,0	11359	2,4	12855	2,0	11795	2,7	12286	2,9	13197	2,5	12820	2,7
Diamond Mining	9983	2,1	11453	2,3	9939	2,1	9641	2,0	9368	2,1	9677	2,3	20519	3,8	11511	2,4
Diamond Processing	951	0,2	1992	0,4	947	0,2	1377	0,3	1028	0,2	948	0,2	10867	2,0	2587	0,5
Jewellery Manufacturing	1426	0,3	996	0,2	947	0,2	918	0,2	917	0,2	822	0,2	1145	0,2	1024	0,2
Total	**475389**	**100**	**497972**	**100**	**473291**	**100**	**459097**	**100**	**439270**	**100**	**424487**	**100**	**534411**	**100**	**471988**	**100**

Figure 7 - Percentage of employees by subsector (2011-2017)



According to Figure 7 above, Gold mining showed a decline in employees from 2015 to date.

The Diamond Mining subsector overtook CLAS subsector in 2017 with 3.8% of employees as opposed 2.5% respectively, however on average the CLAS subsector (2.7%) employs marginally more than the Diamond Mining subsector (2.4%).

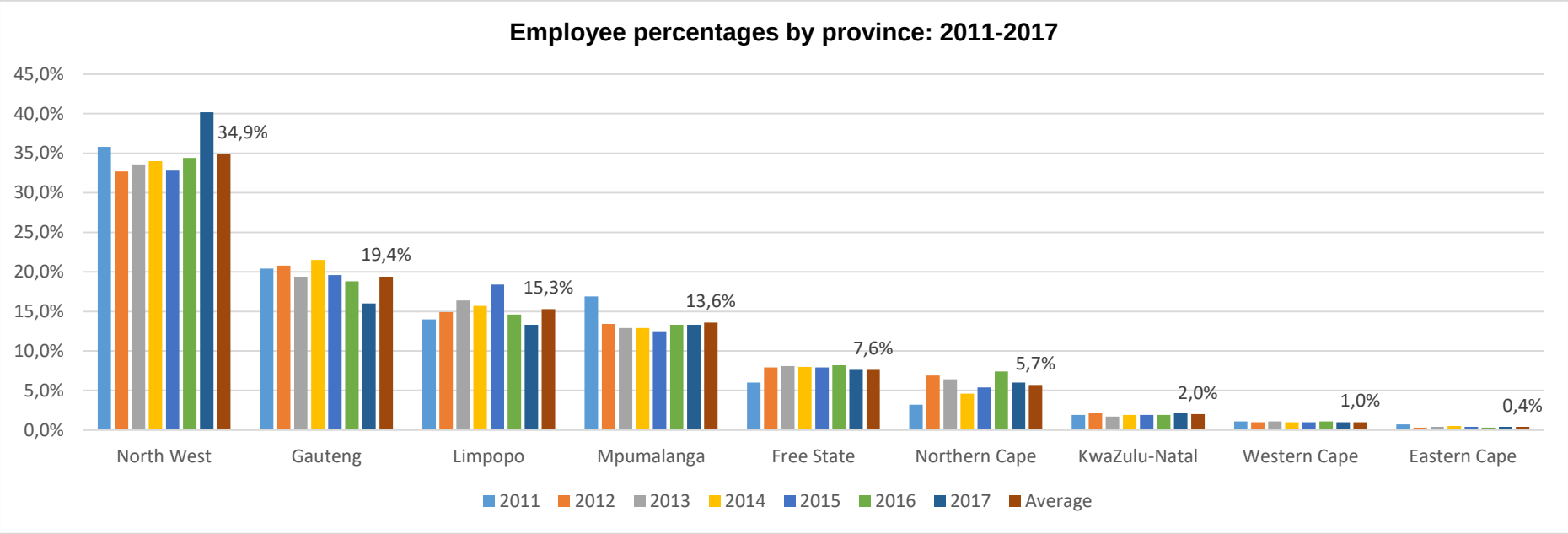
3.5 Employment by Province

The provincial breakdown of employment is presented in Table 6 below and shows that on average 40.2% of employees in the MMS are based in the North West province. This is aligned with the fact that the subsector with the highest number of employees (i.e. PGM Mining) is located predominantly in this province.

Table 6 - Number of employees by province: 2011-2017

Province (in order of highest number of employees)	2011		2012		2013		2014		2015		2016		2017		Average	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
North West	170189	35,8	162837	32,7	159026	33,6	156093	34,0	144221	32,8	146147	34,4	214884	40,2	164771	34,9
Gauteng	96979	20,4	103578	20,8	91818	19,4	98706	21,5	86146	19,6	79661	18,8	85244	16,0	91733	19,4
Limpopo	66554	14,0	74198	14,9	77620	16,4	72078	15,7	80734	18,4	61907	14,6	71335	13,3	72061	15,3
Mpumalanga	80341	16,9	66728	13,4	61055	12,9	59224	12,9	55042	12,5	56521	13,3	71237	13,3	64307	13,6
Free State	28523	6,0	39340	7,9	38337	8,1	36269	8,0	34555	7,9	34662	8,2	40376	7,6	36009	7,6
Northern Cape	15212	3,2	34360	6,9	30291	6,4	21118	4,6	23734	5,4	31545	7,4	32094	6,0	26908	5,7
KwaZulu-Natal	9032	1,9	10457	2,1	8046	1,7	8723	1,9	8443	1,9	7988	1,9	11788	2,2	9211	2,0
Western Cape	5229	1,1	4980	1,0	5206	1,1	4591	1,0	4449	1,0	4595	1,1	5312	1,0	4909	1,0
Eastern Cape	3328	0,7	1494	0,3	1893	0,4	2295	0,5	1946	0,4	1461	0,3	2141	0,4	2080	0,4
Total	**475389**	**100**	**497972**	**100**	**473291**	**100**	**459097**	**100**	**439270**	**100**	**424487**	**100**	**534411**	**100**	**471988**	**100**

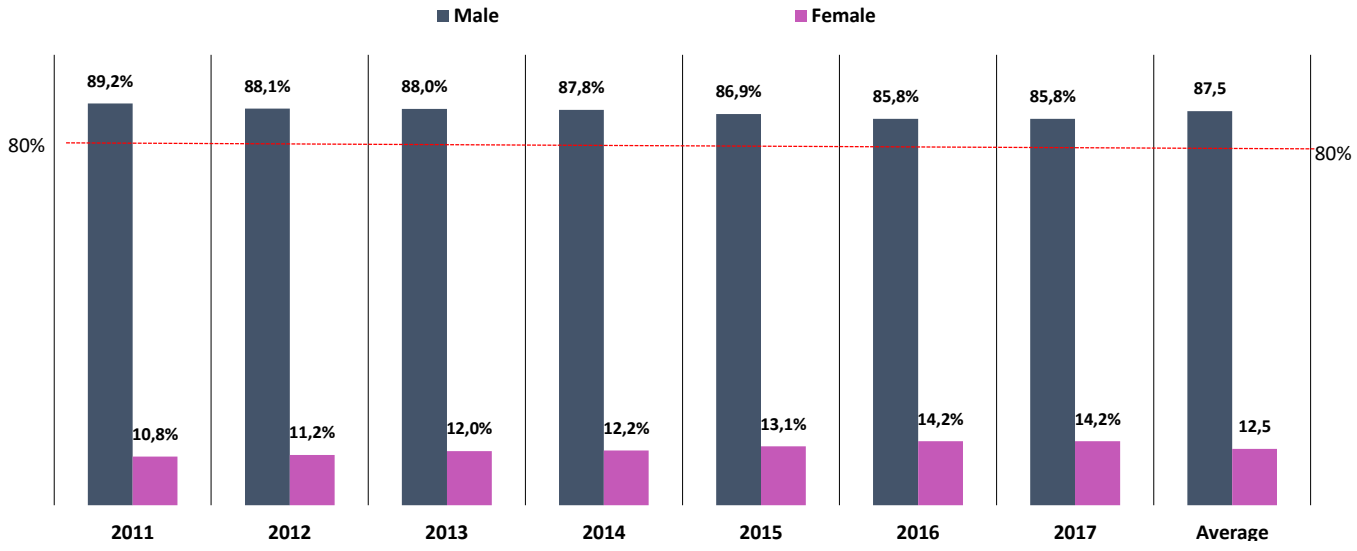
Figure 8 - Percentage of employees by subsector (2011-2017)



On average over the seven year period as depicted in Figure 8 above, KwaZulu-Natal, Western Cape and the Eastern Cape combined represent a mere 3.4% of employees within the MMS.

3.6 Employment by Gender

The distribution of employees by gender during the period under review is presented in Figure 9 and shows that on average the number of male employees (87.5%) outnumbered that of females (12.5%) by approximately 7 to 1. There seems to have been no statistically significant change in the number of female employees in 2016 and 2017.



Year	2011	2012	2013	2014	2015	2016	2017	Average
Male	423931	442101	416627	403033	381513	364370	458443	412860
Female	51458	55871	56664	56064	57757	60117	75968	59128
Total	475389	497972	473291	459097	439270	424487	534411	471988

Figure 9 - Employment by gender: 2011-2017

Historically the trend over the seven years shows that the percentage of males employed in the MMS has never been lower than 80%. This is somewhat representative of the perceptions that the mining industry was not attractive to females in terms of a career choice and it is clear that there has been no successful gender transformation within the industry.

Key questions to be addressed are what policies can be put in place for women to be absorbed into the less physically demanding occupations in the mines and how can they be developed and upskilled in the sector?

3.7 Employment by Age

The date of birth details provided in the submissions by the organisations were used to group the employees into six age brackets and Figure 10 below presents the average employee age patterns for the 7-year period. The age patterns appeared to be in line with the general economically active population with 84.3% of the workforce aged between 25-54 years.

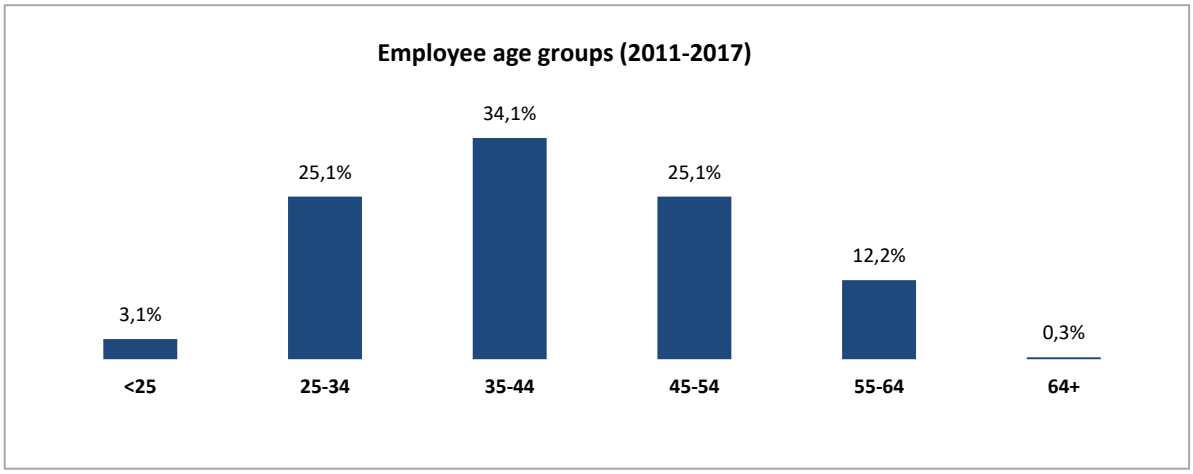


Figure 10 - Employee age groups: 2011-2017

Table 7 illustrates a more detailed breakdown by employee age group for each of the years covered in the analysis and the pattern did not change in any statistically significant manner from year to year.

Table 7 – Employment by age groups: 2011-2017

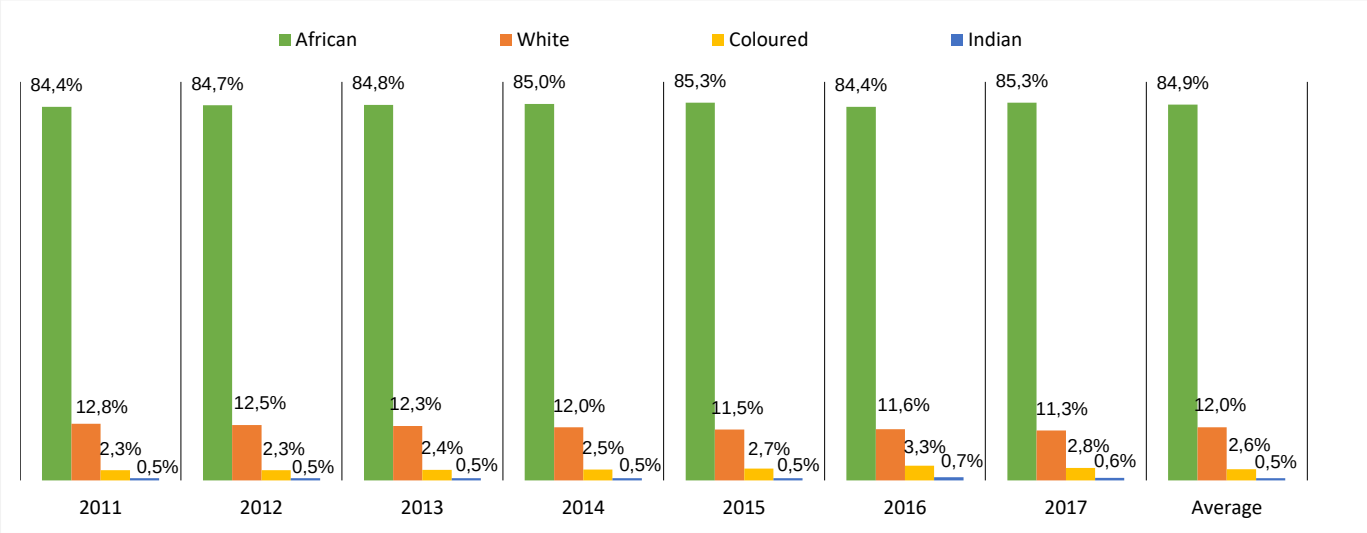
Age		2011	2012	2013	2014	2015	2016	2017	Average
<25	**N**	**23318**	**21624**	**18570**	**14186**	**11010**	**11636**	**16540**	**16698**
	%	4.9	4.3	3.9	3.1	2.6	2.6	3,1	3,5
25-34	**N**	**144025**	**151309**	**146351**	**136821**	**120982**	**128187**	**134368**	**137435**
	%	30.3	30.4	30.9	29.8	28.5	29.2	25,1	29,1
35-44	**N**	**140384**	**147184**	**137945**	**137901**	**137961**	**135702**	**182351**	**145633**
	%	29.3	29.6	29.1	30.0	32.5	30.9	34,1	30,9
45-54	**N**	**125582**	**130458**	**121876**	**117957**	**104220**	**111365**	**134054**	**120787**
	%	26.4	26.2	25.8	25.7	24.6	25.4	25,1	25,6
55-64	**N**	**38914**	**45910**	**47106**	**50552**	**48815**	**50904**	**65230**	**49633**
	%	8.2	9.2	10.0	11.0	11.5	11.6	12,2	10,5
65+	**N**	**3166**	**1487**	**1443**	**1680**	**1499**	**1476**	**1868**	**1803**
	%	0.7	0.3	0.3	0.4	0.4	0.3	0.3	0,4
Total	**N**	**475389**	**497972**	**473291**	**459097**	**424487**	**439270**	**534411**	**471988**
	%	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Given that youth unemployment rate as assessed by STATS SA is 38,6% (3rd quarter 2017), it seems to be counterintuitive that on average a mere 32.6% of employees are in the youth age group of less than 35 years old.

Some of the voices addressing this at stakeholder engagement sessions talk to the theory that the youth of today feel a sense of entitlement and are not prepared to work hard for what they feel they deserve.

3.8 Employment by Population Group

The racial distribution of employees remained virtually unchanged throughout the period, with Africans making up about 85% of the workforce as shown in Figure 11 below. Whites followed at a distant second at around 12% while Coloureds and Indians had a combined average percentage of 3%.



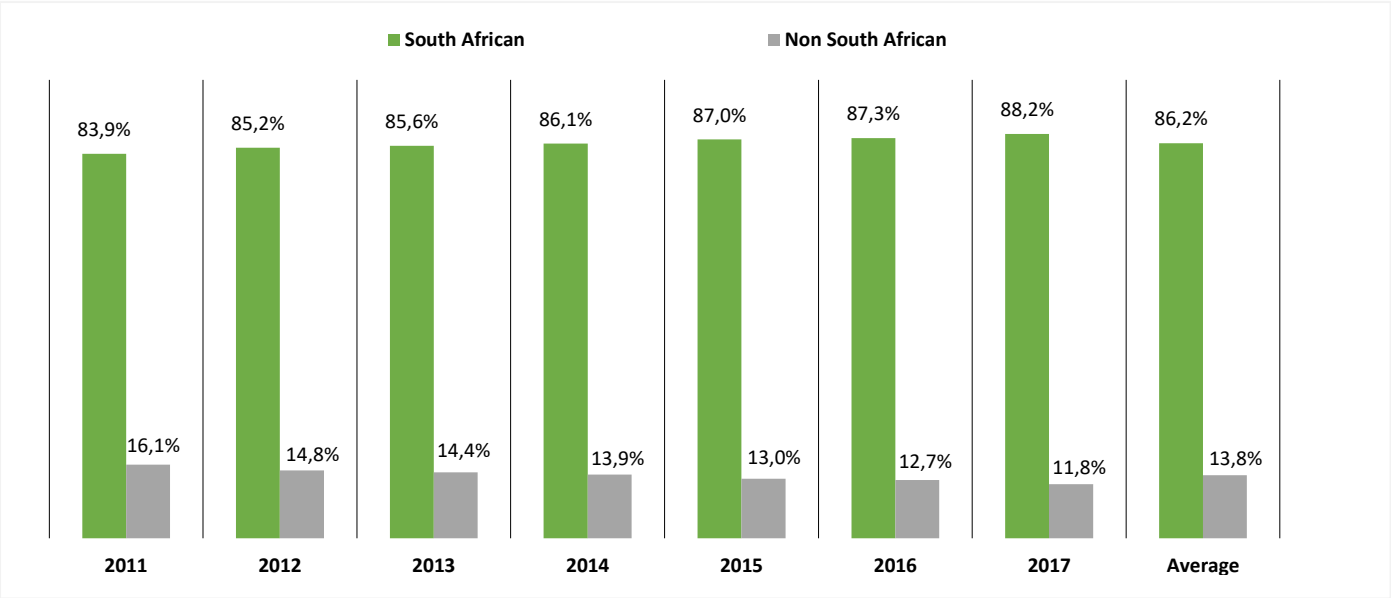
Year	2011	2012	2013	2014	2015	2016	2017	Average
African	401147	421969	401115	390559	374912	358148	455598	400493
White	61005	62024	58438	55044	50426	49302	60380	56660
Coloured	10890	11430	11378	11298	11712	14045	14964	12245
Indian	2347	2549	2360	2196	2220	2992	3469	2590
Total	**475389**	**497972**	**473291**	**459097**	**439270**	**424487**	**534411**	**471988**

Figure 11 Employment by population group: 2011-2017

To a large extent, these proportions mirrored the general racial demographic of South Africa. The natural expectation in a democratic state would be for this to reflect a similar picture when it comes to the population group represented by occupations within the MMS. However, as highlighted in the relevant section this is not necessarily the case.

3.9 Employment by Nationality

The proportion of South African citizens versus non-citizens within the reported employee population was measured and is shown in Figure 12 below.



Year	2011	2012	2013	2014	2015	2016	2017	Average
SA	399125	424026	405224	395198	382064	370772	471266	406811
Non SA	76264	73946	68067	63899	57206	53715	63145	65177
Total	475389	497972	473291	459097	439270	424487	534411	471988

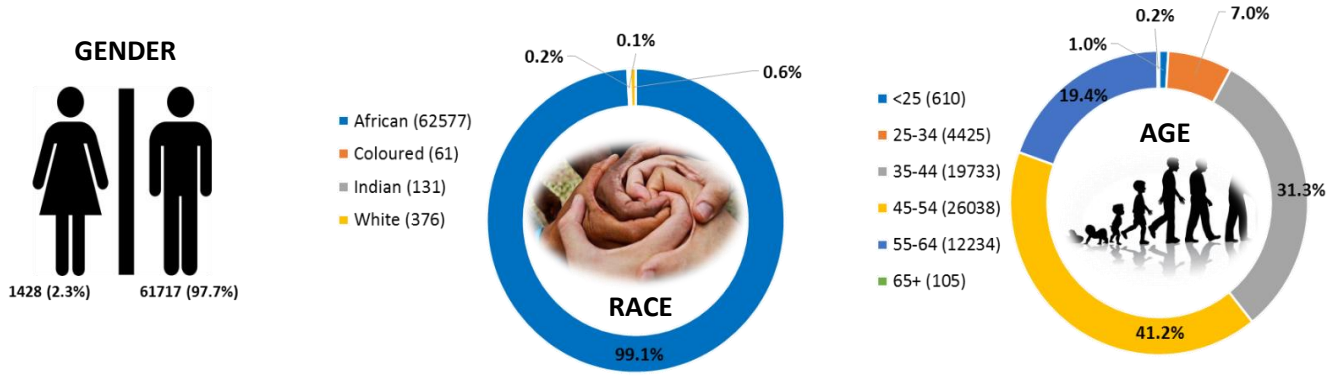
Figure 12 - Employment by nationality: 2011-2017

The proportion of non-South Africans stood at 16.1% in 2011 but decreased consistently over the following 5 years to 11.8% in 2017. The proportion of South Africans employed thus increased by 4.3 percentage points between 2011 and 2017. This is a positive trend as South African citizens are increasingly represented in the MMS year on year. This can be viewed from the perspective of policy application to employ more SA citizens.

3.10 Breakdown of non-South Africans employed in the sector

Analysis of foreign nationals has only been conducted in 2017 due to data restrictions in years prior to 2017. Trends will be tracked with 2017 as the base year and moving forward.

Figure 13 – Demographic spread of non-SA citizens-2017



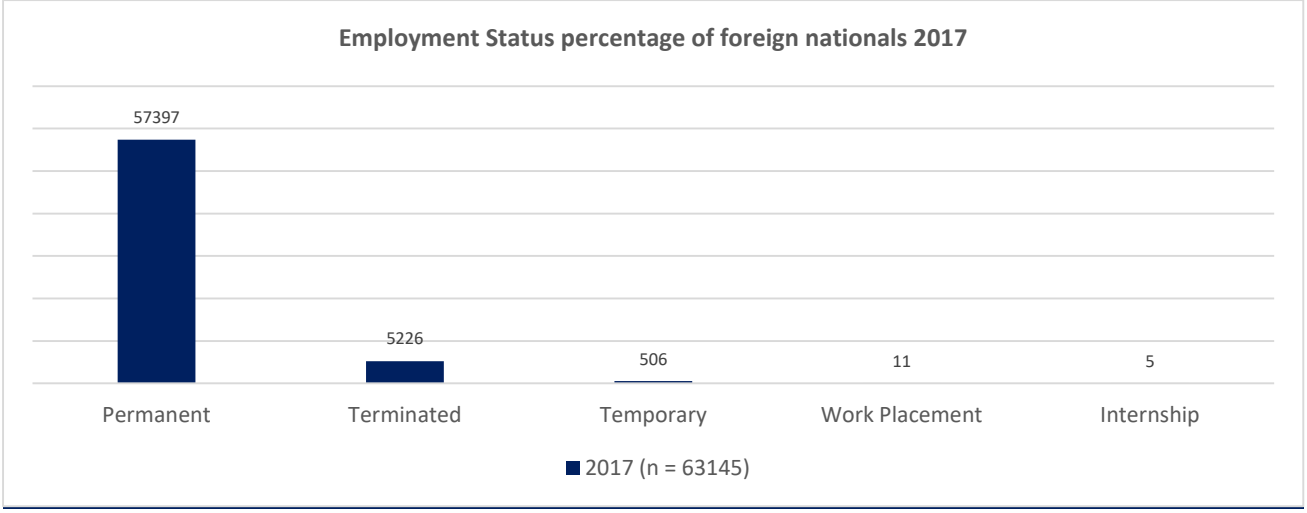
The demographic composition of non-South African citizens is made up of an older workforce aged 35-64 (91.9%) with majority belonging to the African race group (99.1%) of which 97.7% is represented by males.

The table below details the number of non-South African citizens with regards to their employment status

Table 8 - Non South Africans by employment status-2017

Employment Status	N	%
Permanent	57397	90.9%
Terminated	5226	8.3%
Temporary	506	0.8%
Work Placement	11	.0%
Internship	5	.0%
Total	**63145**	**100**

Figure 14 – Percentages of non-SA citizens per employment status-2017



It is quite clear that permanent employment represents the highest employment (90.9%) for foreign nationals.

One common reason that came through from employers during stakeholder discussions was that the cost of this labour is much more feasible and that the foreign nationals tend to value their jobs more when compared to South African citizens.

The table below details non-South African citizens according to their respective occupational levels:

Table 9 - Non South Africans by occupational level-2017

Occupational level	N	%
Top management	58	0.1%
Senior management	147	0.2%
Professionally qualified and experienced specialists and mid-management	465	0.7%
Skilled technical and academically qualified workers, junior management, supervisors, foremen and superintendents	4375	6.9%
Semi-skilled and discretionary decision makers	38622	61.2%
Unskilled and defined decision makers	19478	30.8%
Total	**63145**	**100**

Figure 15 – Percentages of non-SA citizens per occupational level-2017

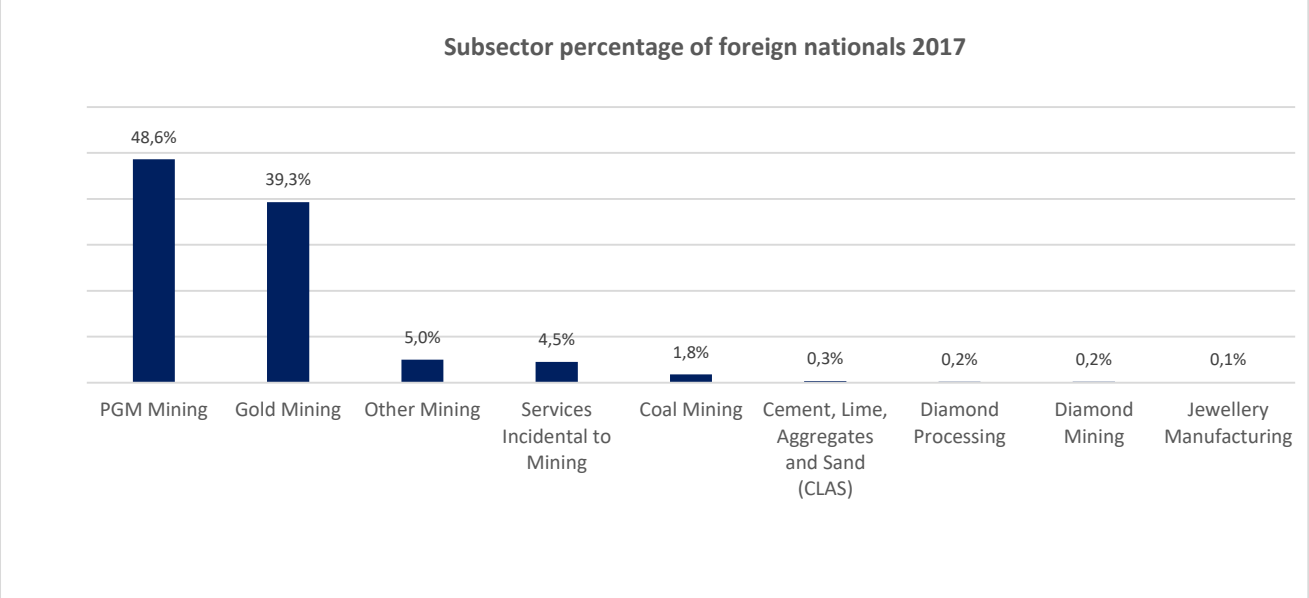
As portrayed in the figure above, employment of foreign labour is skewed to the semi-skilled and unskilled occupational levels representing 92%. This is aligned to some employers expressing that foreign labour is a more feasible option.

The table below details non-South Africans by the subsector that they are employed in.

Table 10 - Non South Africans by subsector-2017

Subsector	N	%
PGM Mining	30695	48,6%
Gold Mining	24823	39,3%
Other Mining	3157	5,0%
Services Incidental to Mining	2845	4,5%
Coal Mining	1164	1,8%
Cement, Lime, Aggregates and Sand (CLAS)	204	0,3%
Diamond Processing	115	0,2%
Diamond Mining	106	0,2%
Jewellery Manufacturing	36	0,1%
Total	**63145**	**100**

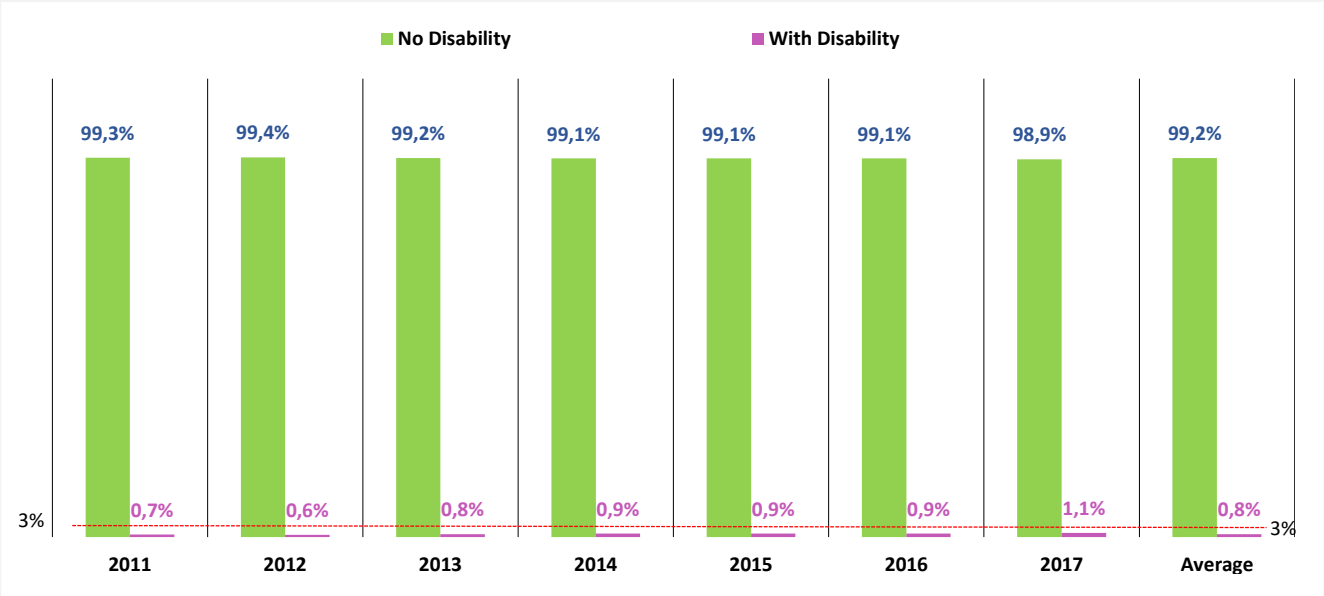
Figure 16 – Percentages of foreign nationals per subsector-2017



The percentages exposed on the figure 16 above mirror the overall employment by subsector. Looking at foreign labor, PGM mining employs the most at 48.6% followed by Gold mining at 39.3%. Together these subsectors dominate the employment at 87.9%.

3.11 Employees with Disability

The proportion of people with disabilities within the MMS workforce remained fixed at about 1 in every 100 employees throughout the period under review as shown in Figure 17 below.



Disability	2011	2012	2013	2014	2015	2016	2017	Average
No	472051	494959	469612	455136	435459	420705	528556	468068
Yes	3338	3013	3679	3961	3811	3782	5855	3920
Total	**475389**	**497972**	**473291**	**459097**	**439270**	**424487**	**534411**	**471988**

Figure 17 - Number of workers with disability: 2011-2017

Employment with disability figures have never reached the 3 percent marker, which according to the Employment Equity Act should be the minimum percentage of an organisations workforce (Vallie, 2017).

Employers in the MMS have voiced their concerns of the physical environment being relatively harder to employ individuals with disabilities. However, suggestions have come forth on employers to be creative with regards to the disabilities employed. A rock drill operator for example, could be a career that an individual with a hearing disability can be hired.

3.12 Conclusions

The incremental decrease in the proportion of foreign nationals employed in the sector can be seen as evidence of effective skills development to address skills shortages locally in the sector and, if sustained, should continue to reduce dependence on imported skills.

CHAPTER 4 – SCARCE AND CRITICAL SKILLS OCCUPATIONS

4.1 Introduction

This chapter looks at the trends pertaining to scarce and critical skills reported by organisations in the MMS during the period 2011-2017. This involves an analysis of the top scarce skills reported by the organisations by subsector, province and occupation over the period. In addition to listing the number and types of skills scarcity by occupation, the organisations also provided reasons for the scarcity. Therefore, the analysis also looks at those reasons, comparing absolute versus relative scarcity. Due to unavailability of comparable data for the year 2010, analysis pertaining to this chapter was limited to the period 2011-2017.

4.2 Overview of Scarce and Critical Skills Trends

The number of vacancies due to scarce skills that were reported by the employers is presented in Figure 18 below, which also indicates the number of people that the employers planned to hire from outside the country to help fill some of those vacancies. The number of scarce skills vacancies over the period of review averaged 3123, although there was an uncharacteristic peak in the 2014 figures at 5303.

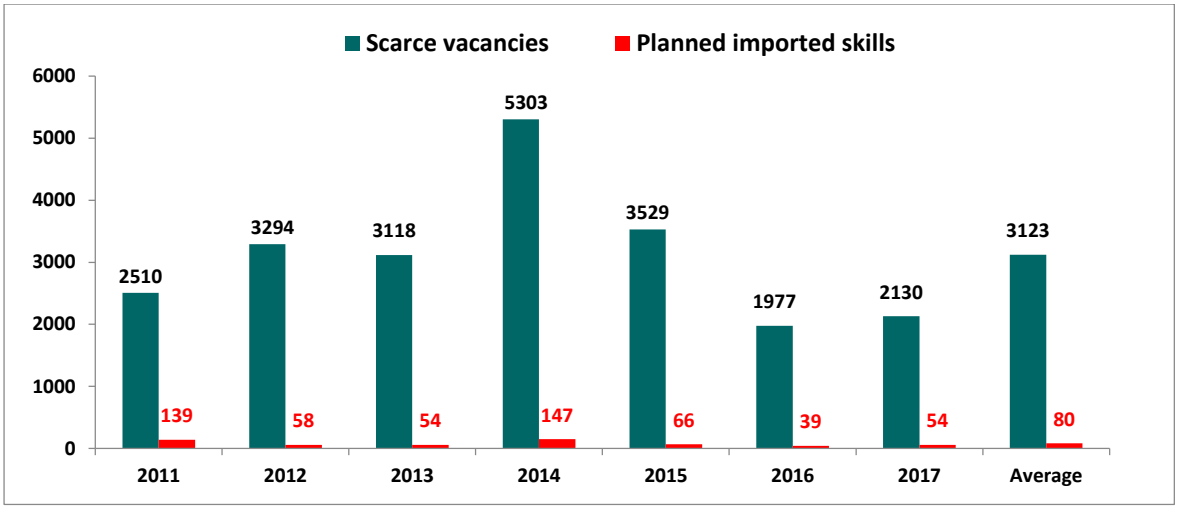


Figure 18 - Scarce and critical skills: 2011-2017

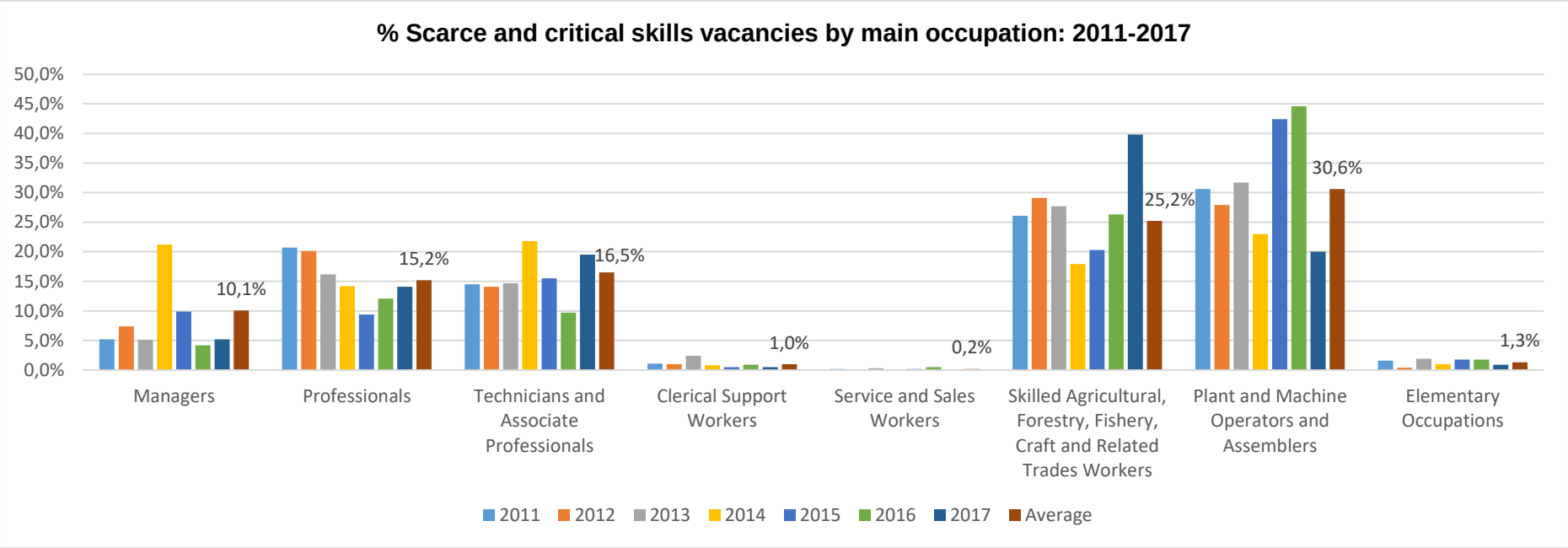
4.3 Scarce and Critical Skills by Main Occupation

An analysis of skills shortage by the different occupations is critical as it sheds light on the fields requiring the most interventions. Table 11 below provides the number of vacancies that were reported according to occupational levels across the years.

Table 11 – Scarce and critical skills vacancies by main occupation: 2011-2017

Main Occupation	2011		2012		2013		2014		2015		2016		2017		Average	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Managers	130	5.2	244	7.4	159	5.1	1125	21.2	350	9.9	83	4.2	111	5.2	315	10,1
Professionals	520	20.7	662	20.1	506	16.2	754	14.2	332	9.4	240	12.1	301	14.1	474	15,2
Technicians and Associate Professionals	364	14.5	464	14.1	458	14.7	1157	21.8	547	15.5	192	9.7	416	19.5	514	16,5
Clerical Support Workers	28	1.1	32	1.0	76	2.4	41	0.8	16	0.5	17	0.9	11	0,5	32	1,0
Service and Sales Workers	5	0.2	3	0.1	9	0.3	6	0.1	6	0.2	9	0.5	0	0	5	0,2
Skilled Agricultural, Forestry, Fishery, Craft and Related Trades Workers	655	26.1	959	29.1	863	27.7	950	17.9	718	20.3	519	26.3	847	39,8	787	25,2
Plant and Machine Operators and Assemblers	768	30.6	918	27.9	988	31.7	1219	23.0	1498	42.4	882	44.6	425	20,0	957	30,6
Elementary Occupations	40	1.6	13	0.4	59	1.9	51	1.0	62	1.8	35	1.8	19	0,9	40	1,3
Total	**2510**	**100**	**3294**	**100**	**3118**	**100**	**5303**	**100**	**3529**	**100**	**1977**	**100**	**2130**	**100**	**3123**	**100**

Figure 19 - Scarce and critical skills by main occupation: 2011-2017



On average, as depicted in Figure 19 above, the highest number of skills shortage in each of the years was experienced in relation to Plant and Machine Operators and Assemblers (30.6%) which constituted almost a third of all the reported scarce vacancies. Shortages of Skilled Agricultural, Forestry, Fishery, Craft and Related Trades Workers (25.2%) came second on the scarcity list and were followed by those relating to Technicians and Associate Professionals (16.5%).

4.4 Scarce Skills Reasons

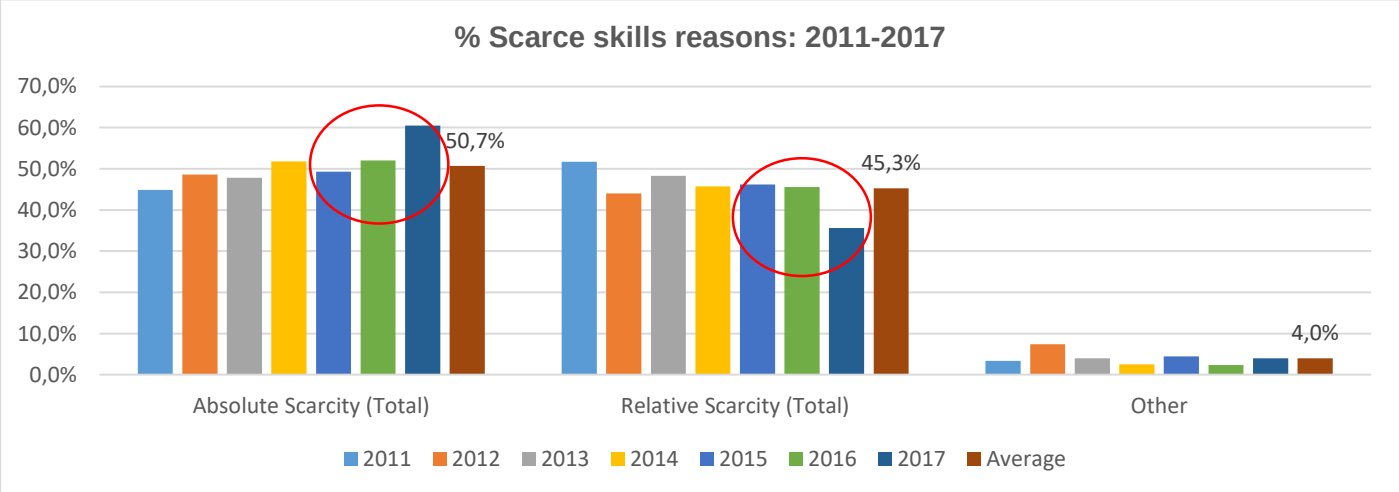
In addition to listing the number of scarce vacancies, the employers gave reasons for the reported skills scarcity by selecting from the list of options as shown in Table 12 below.

Table 12 - Scarce skills reasons: 2011-2017

Scarcity reasons	2011	2012	2013	2014	2015	2016	2017	Average
Absolute Scarcity (Total)	**44.9%**	**48.6%**	**47.8%**	**51.8%**	**49.3%**	**52.0%**	**60.5%**	**50.7%**
Absolute - lack of skilled people	36.1%	40.6%	39.8%	41.4%	40.6%	42.8%	52.1%	41,9%
Absolute - replacement demand	7.4%	6.7%	6.6%	6.3%	6.3%	7.4%	7.4%	6,9%
Absolute - new or emerging occupation	1.4%	1.3%	1.4%	4.1%	2.4%	1.8%	0.9%	1,9%
Relative Scarcity (Total)	**51.7%**	**44.0%**	**48.3%**	**45.7%**	**46.2%**	**45.6%**	**35.6%**	**45,3%**
Relative scarce skill - geographic location	10.9%	11.2%	11.9%	9.0%	13.1%	10.3%	11.2%	11,1%
Relative scarce skill - industry attractiveness	25.3%	15.8%	18.3%	17.9%	10.3%	10.9%	10.3%	15,6%
Relative scarce skill - employment equity	7.9%	9.4%	8.1%	8.0%	12.0%	10.9%	8.6%	9,3%
Relative scarce skill - replacement demand	7.6%	7.6%	10.0%	10.8%	10.8%	13.5%	5.5%	9,4%
Other	**3.4%**	**7.4%**	**4.0%**	**2.5%**	**4.5%**	**2.4%**	**4.0%**	**4,0%**

Overall, there was a marginally higher percentage of the skills shortage to absolute scarcity (50.7%) as opposed to relative scarcity (45.3%) factors. The single biggest reason (41.9%) related to the unavailability of people with the requisite skills for the respective occupations.

Figure 20 – Reasons attributed to Scarce and critical skills: 2011-2017



As exposed on Figure 20 above, from 2015 to date, there has been a gradual increase of absolute scarcity percentages and a decline in the relative scarcity. This is a growing

concern as the absolute scarcity is indicative of a need for skills development and further research should be conducted at a granular level to determine how programmes can be implemented to alleviate these scarcities.

4.5 Conclusions

The dominant reason for the vacancies in the sector however remained that of an absolute shortage of skilled personnel, especially amongst plant and machine operators and assemblers and other skilled trade workers. This highlights the importance of concerted and targeted skills development initiatives in the sector.

CHAPTER 5 – SKILLS DEVELOPMENT IN THE SECTOR

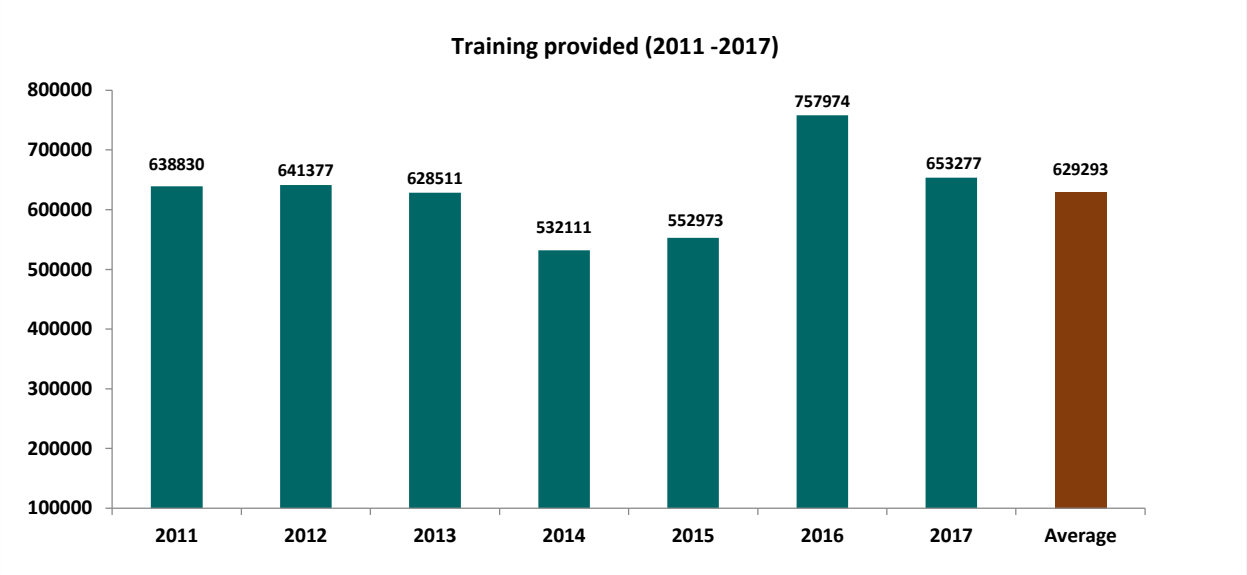
5.1 Introduction

In this chapter, the skills development activities in the sector are reviewed based on information provided in the WSP-ATR submissions by the employers. The purpose is to identify and describe notable patterns and changes in the nature and extent of training provided over the period under review. The analysis excludes figures pertaining to induction, refresher and post leave training that the employers reported.

5.2 Overview of Training Provided[2]

As shown in Figure 21 below, the average number of yearly training interventions, excluding induction, refresher and post leave training, over the 7 year period of analysis was 629 293. There were some notable fluctuations in the figures from year to year such as the drop of 15.3% in training provided from 2013 to 2014 as well as the significant 37.1% increase in training provided from 2015 to 2016. Moving into the 2017 analysis there has been a decline of 13.8% in training provided.

Figure 21 - Training provided (2011-2017)



Year	2011	2012	2013	2014	2015	2016	2017	Average
Total	**638830**	**641377**	**628511**	**532111**	**552973**	**757974**	**653277**	**629293**
% change	-	+0.4%	-2.0%	-15.3%	+3.9%	+37.1%	-13.8%	-

[2] Excluding Induction/Refresher/Post-Leave training

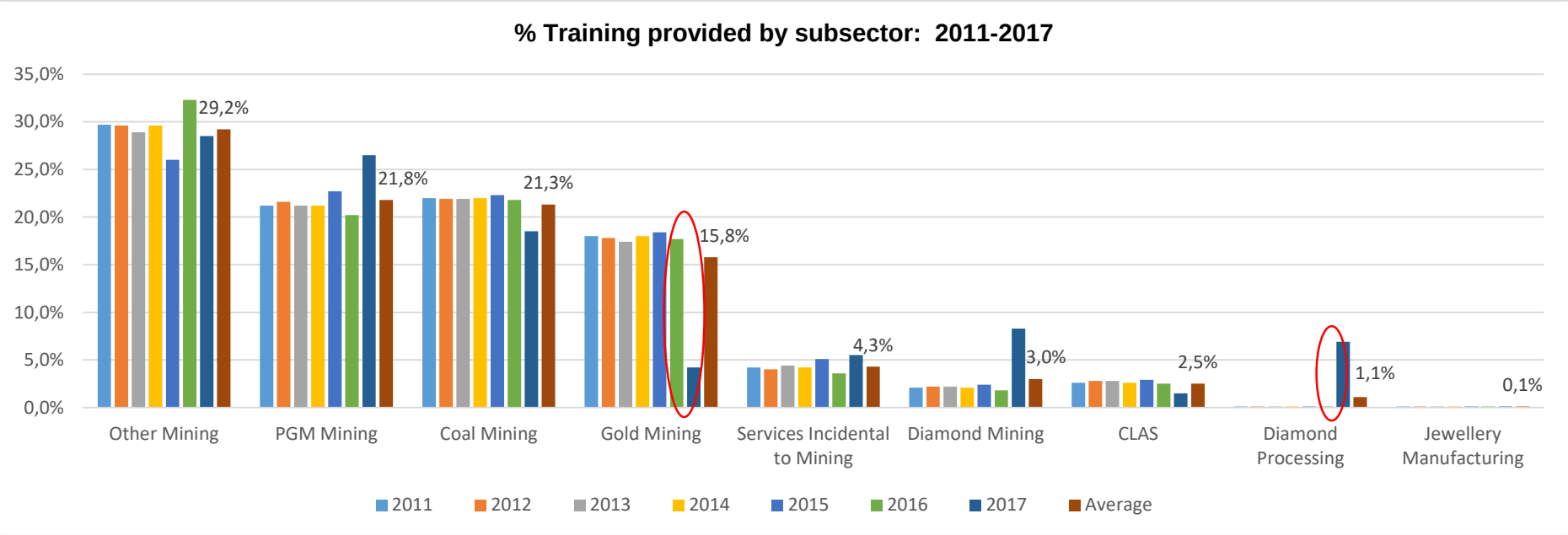
5.3 Training Provided by Subsector

The breakdown by subsector of the training interventions that were implemented during the period 2011-2017 is presented in Table 13 below. On average, Other Mining (29.2%) had the highest number of training interventions during the seven year period and was followed by Coal Mining (21.3%) and PGM Mining (21.8%).

Table 13 – Training provided by subsector: 2011-2017

Subsector (in order of highest number of training done)	2011		2012		2013		2014		2015		2016		2017		Average	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Other Mining	189694	29.7	189848	29.6	186047	28.9	157550	29.6	143575	26.0	244683	32.3	186196	28.5	185370	29.2
PGM Mining	135350	21.2	138572	21.6	133054	21.2	112881	21.2	125648	22.7	152741	20.2	172881	26.5	138732	21.8
Coal Mining	140643	22.0	140180	21.9	138277	21.9	117264	22.0	123293	22.3	164996	21.8	120575	18.5	135033	21.3
Gold Mining	114969	18.0	113848	17.8	113339	17.4	95791	18.0	101854	18.4	134113	17.7	27601	4.2	100216	15.8
Services Incidental to Mining	26831	4.2	25738	4.0	26297	4.4	22349	4.2	28066	5.1	27391	3.6	36158	5.5	27547	4.3
Diamond Mining	13405	2.1	13869	2.2	13298	2.2	11172	2.1	13523	2.4	13960	1.8	54491	8.3	19103	3.0
CLAS	16610	2.6	17776	2.8	16741	2.8	13835	2.6	15850	2.9	18691	2.5	10019	1.5	15646	2.5
Diamond Processing	669	0.1	705	0.1	729	0.1	532	0.1	722	0.1	635	0.1	44758	6.9	6964	1.1
Jewellery Manufacturing	659	0.1	841	0.1	729	0.1	737	0.1	442	0.1	764	0.1	353	0.1	646	0.1
Total	**638830**	**100**	**641377**	**100**	**628511**	**100**	**532111**	**100**	**552973**	**100**	**757974**	**100**	**653277**	**100**	**635205**	**100**

Figure 22 - Training provided by subsector (2011-2017)



It is worth noting that there has been a significant decrease in the training provided for the Gold Mining subsector from 17.7% in 2016 to 4.2% in 2017 and a significant increase in training provided in the Diamond Mining subsector from 1.8% in 2016 to 8.3% in 2017.

On average the top four subsectors (Other Mining, PGM Mining, Coal Mining and Gold Mining) accounted for about 88% of all the training reported.

5.4 Type of Training Provided

Analysis by type of training or learning programme was conducted and the results are shown in Table 14 below. Majority of the training conducted in each of the years in the analysis pertained to short courses and constituted an average of 55%. The second highest type of training was on operator licensing and renewals.

Table 14 – Type of training provided: 2011-2017

Learning Programme (in order of highest training percentage)	2011[3]	2012	2013	2014	2015	2016	2017	Average
	638830	641377	628511	532111	552973	757974	653277	629293
					%			
Short Course	-	53,3	62,3	56,9	57,2	44,0	50,4	55,0
Operator Licence/Renewal	-	5,8	9,5	12,0	15,3	17,5	12,4	12,0
Other	-	20,8	4,7	7,1	6,5	9,8	0,0	9,8
Skills Programme	-	6,0	7,7	8,7	7,3	5,1	4,3	7,0
Job Specific Development Programme	-	2,3	3,8	7,2	5,6	15,3	14,8	6,8
Work Placement	-	3,0	6,8	1,3	2,7	3,7	0,3	3,5
Certificate	-	4,8	2,0	3,0	2,0	2,2	2,2	2,8
MQA Learnership	-	0,8	1,0	0,7	0,8	0,9	0,5	0,8
AET 1	-	0,8	0,3	0,3	0,3	0,2	0,1	0,4
AET 2	-	0,5	0,3	0,2	0,2	0,2	0,1	0,3
Learnership	-	0,2	0,2	0,1	0,1	0,2	13,7	0,2
Mentorship	-	0,2	0,2	0,2	0,2	0,0	-	0,2
Pre-AET	-	0,6	0,2	0,2	0,1	0,1	0,0	0,2
AET 3	-	0,3	0,3	0,2	0,2	0,1	0,1	0,2
Foundational Learning Competency	-	0,0	0,0	0,1	0,8	0,0	0,2	0,2
National Certificate	-	0,1	0,1	0,1	0,2	0,0	0,2	0,1
AET 4	-	0,2	0,2	0,1	0,1	0,1	0,1	0,1
Trade	-	-	-	-	-	-	0.1	0.1
National Diploma	-	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Bachelors Degree	-	0.1	0.1	0,1	0,1	0,2	0,0	0,1
Masters Degree	-	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Recognition of Prior Learning	-	0,0	0,0	0,0	0,0	0,1	0,0	0,0
NCV_level_4_placements	-	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Bursary	-	-	-	-	-	-	0.0	0.0
National Higher Certificate	-	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Post Graduate Diploma	-	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Honours Degree	-	0,0	0,0	0,0	0,0	0,0	0,0	0,0
National Higher Diploma	-	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Doctoral Degree	-	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Further Diploma	-	0,0	0,0	0,0	0,0	0,0	0,0	0,0
National Masters Diploma	-	0,0	0,0	0,0	0,0	0,0	0,0	0,0
MQA Qualifications	-	0,0	0,0	0,0	0,1	0,1	0,2	0,0
Internship	-	0,0	0,0	0,0	0,1	0,1	0,1	0,0
Post Doctoral Degree	-	0,0	0,0	0,0	0,0	0,0	-	0,0

5.5 Conclusions

The training interventions average over the seven years, excluding induction, refresher and post leave training was 629 293 against an average employee total of 471 988 during the same period. This indicates that some of the employees tended to undergo more than one type of training in a year and could be seen as positive in terms of multiskilling. The 13.8%

[3] Pre-coded programme classifications not provided for 2011

decrease in training provided for 2017 compared to 2016 is a matter that needs to be investigated further from a skills development perspective. Possible research into companies perceptions of return of investment from training provided to employees may be a topic of discussion when proposing the new research agenda for the MQA.

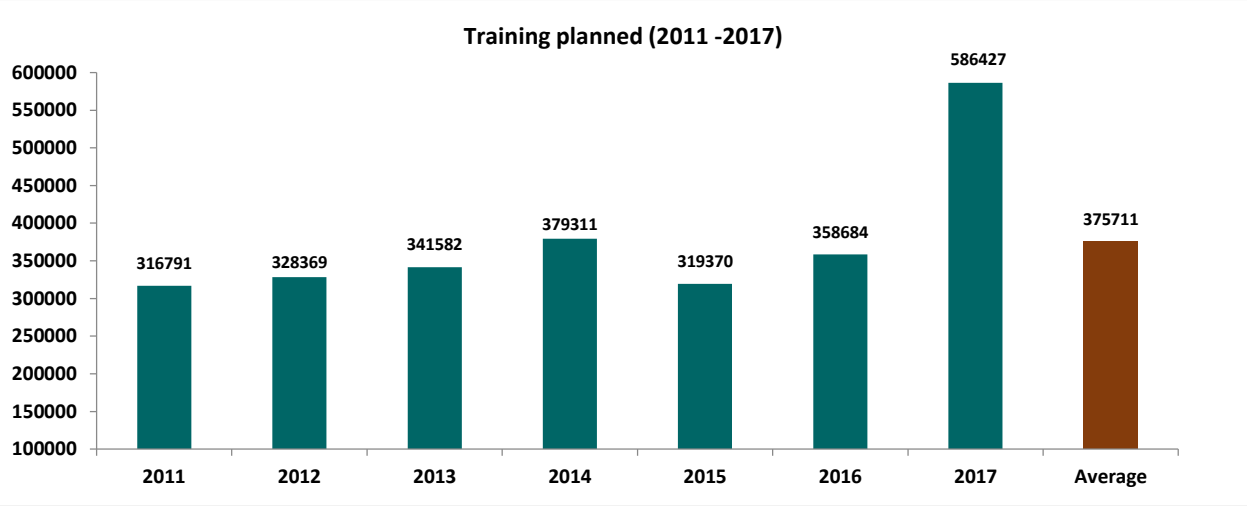
CHAPTER 6 – SKILLS DEVELOPMENT PLANNED FOR THE SECTOR

6.1 Introduction

This chapter provides an analysis of all training that was planned for employees across the subsectors during the period under review, excluding Induction, ex-leave and refresher training. Training planned according to learning and skills programmes is provided.

6.2 Overview of Training Planned[4]

The annual number of planned training interventions, excluding induction, refresher and post leave training is presented in Figure 23 below. Other than a notable spike in 2017, the number of planned training interventions was comparable across the years and the annual average for the 7 years was 375 711.



Year	2011	2012	2013	2014	2015	2016	2017	Average
Total	316791	328369	341582	379311	319370	358684	586293	375711
% change	-	+3.7%	+4.0%	+11.0%	-15.8%	+12.3%	+63.4	-

Figure 23 - Training planned (2011-2017)

[4] Excluding Induction/Refresher/Post-leave training

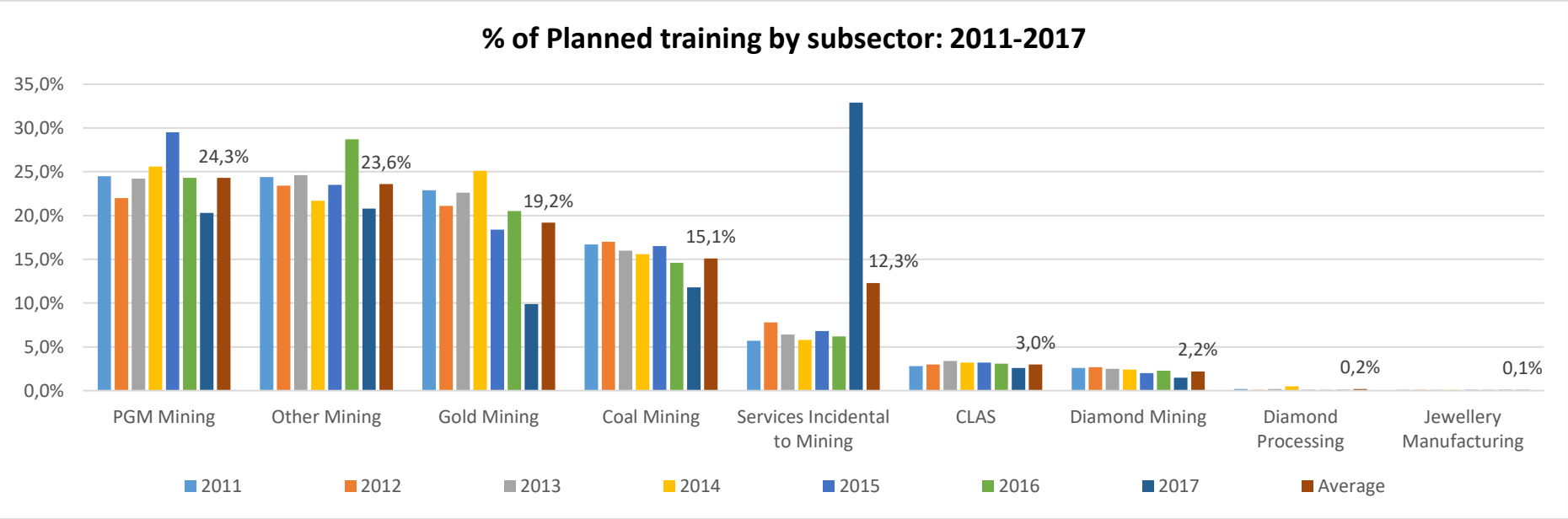
6.3 Training Planned by Subsector

A breakdown of the planned training interventions by subsector for the period 2011-2017 is presented in Table 15 below. The PGM Mining subsector (24.3%) was fractionally ahead of Other Mining (23.6%) with Gold Mining (19.2%) in third place regarding the number of planned training interventions. In line with the actual training figures presented earlier, these three subsectors together with Coal Mining (15.1%) accounted for the bulk (82.2%) of all the planned training figures.

Table 15 - Training planned by subsector: 2011-2017

Subsector (in order of highest number of training planned)	2011		2012		2013		2014		2015		2016		2017		Average	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
PGM Mining	77614	24.5	82092	22.0	82663	24.2	97104	25.6	94214	29.5	87160	24.3	119237	20,3	91441	24,3
Other Mining	77297	24.4	76838	23.4	84029	24.6	82310	21.7	74733	23.5	102942	28.7	121996	20,8	88592	23,6
Gold Mining	72545	22.9	69614	21.1	77198	22.6	95207	25.1	58764	18.4	73530	20.5	58308	9,9	72167	19,2
Coal Mining	52904	16.7	55494	17.0	54653	16.0	59173	15.6	52696	16.5	52368	14.6	69061	11,8	56621	15,1
Services Incidental to Mining	18374	5.7	25284	7.8	21861	6.4	22000	5.8	21717	6.8	22597	6.2	192655	32,9	46355	12,3
CLAS	8870	2.8	9523	3.0	11614	3.4	12138	3.2	10220	3.2	11119	3.1	15006	2,6	11213	3,0
Diamond Mining	8237	2.6	8866	2.7	8540	2.5	9103	2.4	6387	2.0	8250	2.3	8828	1,5	8316	2,2
Diamond Processing	634	0.2	328	0.1	683	0.2	1897	0.5	319	0.1	359	0.1	479	0,1	671	0,2
Jewellery Manufacturing	317	0.1	328	0.1	342	0.1	379	0.1	319	0.1	359	0.1	723	0,1	395	0,1
Total	**316791**	**100**	**328369**	**100**	**341582**	**100**	**379311**	**100**	**319370**	**100**	**358684**	**100**	**586293**	**100**	**375711**	**100**

Figure 23 - Training planned by subsector (2011-2017)



In 2017, there was a sudden spike in p for the Services Incidental to Mining. Further research needs to be conducted in this space.

6.4 Type of Training Planned

When induction, ex leave and refresher training is excluded from the analysis, most of the planned training in each of the years in the analysis pertained to short courses with an average of 33.6% as shown in Table 16 below. This pattern is reflected in the actual training implemented where short courses constituted about half of all the training done.

Table 16 – Type of training planned: 2011-2017

Learning Programme	2011[5]	2012	2013	2014	2015	2016	2017	Average
Total	316791	328369	341582	379311	319370	358684	586293	375771
					%			
Short Course	-	39.8	41.2	42	39.2	42.6	30.4	33,6
Operator Licence/Renewal	-	14.5	17.2	12.4	18.1	19.8	5.3	12,5
Skills Programme	-	15.8	12.1	12	12.6	8.4	16.7	11,1
Job Specific Development Programme	-	9.7	8.2	8.8	7.6	6.6	8.3	7,0
Other	-	5.8	8.2	6.8	6.3	10.5	0.0	5,4
Work Placement	-	2.7	3.3	9.1	6.4	3.9	1.4	4,4
Certificate	-	3.8	3.6	3.1	3	3.4	5.3	3,2
MQA Learnership	-	1.8	1.7	1.3	1.5	1.5	7.3	2,2
AET 1	-	0.9	0.7	0.6	0.6	0.4	1.0	0,6
AET 2	-	0.9	0.7	0.5	0.5	0.5	1.1	0,6
AET 3	-	0.7	0.5	0.4	0.4	0.3	1.2	0,5
AET 4	-	0.8	0.5	0.6	0.4	0.2	1.0	0,5
Bachelors Degree	-	0.2	0.2	0.1	0.2	0.2	2.3	0,5
National Diploma	-	0.7	0.4	0.1	0.2	0.1	2.2	0,5
Internship	-	0.0	0.1	0.0	0.3	0.2	2.5	0,4
Mentorship	-	0.8	0.4	0.7	0.8	0.0	-	0,4
Learnership	-	0.2	0.2	0.5	0.3	0.2	1.2	0,4
Pre-AET	-	0.3	0.4	0.2	0.2	0.4	0.4	0,3
National Certificate	-	0.3	0.3	0.2	0.3	0.2	1.1	0,3
Masters Degree	-	0.1	0.1	0.0	0.0	0.0	1.0	0,2
Foundational Learning Competency	-	0.1	0.2	0.2	0.3	0.2	0.4	0,2
Recognition of Prior Learning	-	0.0	0.2	0.0	0.3	0.3	0.5	0,2
MQA Qualifications	-	0.0	0.1	0.2	0.1	0.1	1.3	0,1
National Higher Diploma	-	0.1	0.1	0.0	0.1	0.0	0.2	0,1
NCV_level_4_placements	-	0.0	0.0	0.1	0.2	0.0	0.1	0,1
Further Diploma	-	0.0	0.0	0.1	0.0	0.0	0.5	0,1
Honours Degree	-	0.0	0.0	0.0	0.0	0.0	0.6	0,1
Post Graduate Diploma	-	0.0	0.0	0.0	0	0.0	0.5	0,1
National Higher Certificate	-	0.0	0.0	0.0	0.1	0.0	0.6	0,1
National Masters Diploma	-	0.0	0.0	0.0	0	0.0	0.1	0,0
Post Doctoral Degree	-	0.0	0.0	0.0	0	0.0	0.0	0,0
Doctoral Degree	-	0.0	0.0	0.0	0.0	0.0	0.1	0,0

[5] Pre-coded programme classifications not provided for 2011

6.5 Training Planned versus Training Implemented

A comparison of planned training against training that was implemented is presented in Table 17 below. A notable and positive pattern is that the number of training interventions implemented tended to be nearly about double the previously reported planned training targets.

Table 17 – Training planned versus training implemented: 2011-2017

Year	Training planned 	Training implemented 	Training planned versus Training implemented ratio  vs. 
2011	316791	638830	1 : 2,0
2012	328369	641377	1 : 1,9
2013	341582	628511	1 : 1,8
2014	379311	532111	1 : 1,4
2015	319370	552973	1 : 1,7
2016	358684	757974	1 : 2,1
2017	586293	653277	1 : 1,1
Average	**375791**	**625296**	**1 : 1,7**

6.6 Conclusions

The annual number of planned training interventions, excluding induction, refresher and ex-leave training was comparable across the years at an annual average of 375 791. This figure was almost half of the 625 296 training interventions that were implemented.

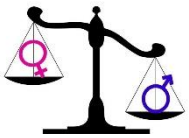
CHAPTER 7- CONCLUSION AND RECOMMENDATIONS

A summary of key findings from the Trends Analysis of 2010-2017 WSP-ATR submissions is presented below.

Finding 1:

The annual participation in mandatory grants between 2010 and 2017 averaged 621 and about 9 out of every 10 of these submissions were approved. Most of the submissions were from Gauteng which accounted for an average of 45.4% over the period under review. This trend was in line with the fact that the majority of the participating employers were from the relatively smaller companies that fall under the Other Mining (28.9%) and the Services Incidental to Mining (22%) subsectors and the majority of which are located in Gauteng.

Recommendation: Conduct research to explore employers' attitudes towards skills development and surveys to elicit views on the submission processes (WSP/ATR system) in order to ensure streamlining, efficiency, effectiveness and user-friendliness.



Finding 2:

The employment demographics show that female employees in the sector are outnumbered by males approximately 7:1. The average representations of Africans (84.9%), Whites (12%), Coloured (2.6%) and Indians (0.5%) to an extent mirrored the general racial demographic of the South African population. The proportion of non-South Africans employed in the sector decreased from 16.1% to 11.8% over the period under review. The average number of people with a disability employed over the seven year period (0.8%) constitutes much less than the 3% required according to the Employment Equity Act.

Recommendation: Conduct research to find out ways of increasing female worker participation in the sector as well investigate factors that influence entry and retention of female work force in the sector. The purpose is to facilitate a paradigm shift in terms of the mindset (masculinity) and organisational culture. Explore the factors influencing local as opposed to foreign national employment as well as methods of absorbing more disabled individuals in appropriate areas within the workplace.

Finding 3 - The highest number of skills shortage in each of the years was experienced in relation to Plant and Machine Operators and Assemblers (30.6%) which constituted almost a third of all the reported scarce vacancies. Shortages of Skilled Agricultural, Forestry, Fishery, Craft and Related Trades Workers (25.2%) came second on the scarcity list and were followed by those relating to Technicians and Associate Professionals (16.5%).

Recommendation:

It is recommended that the MQA further probes the scarcity of skills as it relates to plant and machine operators and assemblers to get deeper understanding around the reasons advanced for this scarcity – lack of skilled people and industry attractiveness. Furthermore, this scarcity highlights the need for concerted and targeted skills development initiatives in the sector, for instance the Contractors Plant Hire Association (CPHA) which has been in existence since 1970 in the past years recognised the need to provide simulators as the most cost-effective method to train new entrants to operate the expensive machinery in real life situations. They set up simulators at Imbali Training Centre in Benoni, Coega in Port Elizabeth, the IDZ in East London and in Kwazulu-Natal in 2008, with funding from the Services Sector Training Authority (SSETA)[6]. Research needs to be conducted on the effectiveness and impact of this model to investigate the efficacy of this intervention intended to address the experience gap on the utilisation of the expensive machinery by the new entrants on the shop floor with the purpose of documenting success stories increasing the scale across the sector.

Finding 4 The highest average percentage (55%) of training provided across the years pertains to short courses. The extent to which these courses support upward movement into the echelons of management is substantially limited given the general minimum requirements for employees to occupy management positions across the entire management structure.

Recommendation:

There is a need for research to explore the extent to which the training provided supports the career progression of employees within the sector.

[6] Skills For and Through SIPs-What has been done and still needs to be done to Skill South Africans for SIPs and through SIPs, September 2014.

REFERENCES

Skills For and Through SIPs – What has been done and still needs to be done to Skill South Africans for SIPs and through SIPs, September 2014.

APPENDICES

Appendix 1: Number of training (MQA Learnerships) – 2011 to 2017

Year	Number trained
○ 2011	4318
○ 2012	6479
○ 2013	5993
○ 2014	3631
○ 2015	4546
○ 2016	6549
○ 2017	3392
Total	**34908**
Average	**4987**

Appendix 2: Number of training (Skills Programmes) – 2011 to 2017

Year	Number trained
○ 2011	66583
○ 2012	42321
○ 2013	48205
○ 2014	46404
○ 2015	40296
○ 2016	38674
○ 2017	27995
Total	**310478**
Average	**44354**

Appendix 3: Number of training (AET) – 2011 to 2017

	2011	2012	2013	2014	2015	2016	2017	Total	Average
AET 1	2397	2522	2085	1374	1692	1791	900	**12761**	**1823**
AET 2	2071	2094	1879	1192	1080	1363	928	**10607**	**1515**
AET 3	1957	1851	1775	1046	976	1053	664	**9322**	**1332**

AET 4	1482	1357	1395	714	543	712	442	**6645**	**949**

Appendix 4: OFO Major Groups

1	MANAGERS
2	PROFESSIONALS
3	TECHNICIANS AND ASSOCIATE PROFESSIONALS
4	CLERICAL SUPPORT WORKERS
5	SERVICE AND SALES WORKERS
6	SKILLED AGRICULTURAL, FORESTRY, FISHERY, CRAFT AND RELATED TRADES WORKERS
7	PLANT AND MACHINE OPERATORS AND ASSEMBLERS
8	ELEMENTARY OCCUPATIONS

Appendix 5: OFO Sub Major Groups

11	Chief Executives, Senior Officials and Legislators
12	Administrative and Commercial Managers
13	Production and Specialised Services Managers
14	Hospitality, Retail and Other Services Managers
21	Physical, Mathematical and Engineering Science Professionals
22	Health Professionals
23	Teaching Professionals
24	Business and Administration Professionals
25	Information and Communications Technology Professionals
26	Legal, Social and Cultural Professionals
31	Science and Engineering Associate Professionals
32	Health Associate Professionals
33	Business and Administration Associate Professionals
34	Legal, Social, Cultural and Related Associate Professionals
35	Information and Communications Technicians
41	General and Keyboard Clerks
42	Customer Services Clerks
43	Numerical and Material Recording Clerks
44	Other Clerical Support Workers
51	Personal Service Workers
52	Sales Workers
53	Personal Care Workers
54	Protective Services Workers
61	Market-oriented Skilled Agricultural Workers
63	Subsistence Farmers, Fishers, Hunters and Gatherers
64	Building and Related Trades Workers
65	Metal, Machinery and Related Trades Workers
66	Handicraft and Printing Workers
67	Electrical and Electronics Trades Workers
68	Food Processing, Wood Working, Garment and Other Craft and Related Trades Workers
71	Stationary Plant and Machine Operators
72	Assemblers
73	Drivers and Mobile Plant Operators
81	Cleaners and Helpers
82	Agricultural, Forestry and Fishery Labourers
83	Labourers in Mining, Construction, Manufacturing and Transport
84	Food Preparation Assistants
85	Street and Related Sales and Service Workers
86	Refuse Workers and Other Elementary Workers

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A Publication from the MQA Skills Development and Research Unit