

Discussion Paper

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# **Understanding the non-marketable benefits of apprenticeships in South African enterprises**

Skills and Employability Branch

International Labour Office

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## List of abbreviations

<b>AAT</b>	Association of Accounting Technicians
<b>BBBEE</b>	Broad-Based Black Economic Empowerment
<b>CBMT</b>	Competency Based Modular Training
<b>CBQ</b>	Cost-Benefit-Quality
<b>CEDEFOP</b>	the European Centre for the Development of Vocational Training
<b>COTT</b>	Central Organisation for Trade Testing
<b>DHET</b>	Department of Higher Education and Training
<b>HR</b>	Human Resources
<b>HSRC</b>	Human Sciences Research Council
<b>ILO</b>	International Labour Organization
<b>JIPSA</b>	Joint Initiative on Priority Skills Acquisition
<b>NAMB</b>	National Artisan Moderation Body
<b>NDP</b>	National Development Plan
<b>NQF</b>	National Qualifications Framework
<b>NSF</b>	National Skills Fund
<b>SDG</b>	Sustainable Development Goals
<b>SEIFSA</b>	Steel and Engineering Industries Federation of South Africa
<b>SETA</b>	Sector Training and Education Authorities
<b>STEM</b>	Science, technology, engineering and mathematics
<b>TVET</b>	Technical and vocational education and training
<b>VET</b>	Vocational Education and Training

## Foreword

This discussion paper is an output of the Skills that Work Project, a development cooperation project implemented by the ILO and funded by the JPMorgan Chase Foundation.

Genesis Analytics was contracted by the International Labour Organization (ILO) to conduct firm level research on the non-marketable or non-financial benefits of apprenticeships in South Africa.

The ILO has previously commissioned a review of the methodologies used to measure the costs and benefits of apprenticeships which was published as a discussion paper (Hauschildt, 2016). This methodological review was discussed at an expert group meeting in Geneva in 2017 where it was agreed that further work on the non-marketable or non-financial benefits would be of value. As a result, the ILO commissioned this work on assessing the non-marketable benefits of apprenticeships in South Africa which seeks to shed light on what benefits are obtained from apprenticeships by enterprises beyond financial gain.

# 1. Introduction

Employment is a key event in the transition from youth to adulthood and enables an individual to move from being dependent (on a parent or guardian) to being independent. Prolonged periods of unemployment for youth disturb this transition and impose significant costs on the individual. These include material deprivation and social exclusion, which is an expansion of material deprivation to include deprivation in the other dimensions of an individual's development.<sup>1</sup> The consequences of social exclusion include: loss of output by failing to use the productive capacity of youth; missed opportunities for learning; loss of independence and autonomy in decision-making; psychological harm that comes from losing motivation; poor health due to the stress inflicted by long-term unemployment; a breakdown in familial and social relations; and weaker social cohesion.<sup>2</sup> These consequences make it clear that the negative effects of youth unemployment are more profound than a loss of income and that unemployment can cause long-term damage to many aspects of an individual's life that can also spill-over to those around them.

The ILO estimates that globally, 192.7 million people were unemployed in 2017. Table 1 shows that this number is expected to decrease slightly to 192.3 million in 2018 and then increase to 193.6 million in 2019. Table 1 also shows that the majority of unemployed people live in emerging countries.

**Table 1: Unemployment trends (2016 - 2018)**

Region	Unemployment			Unemployment Rate		
	2017	2018	2019	2017	2018	2019
<b>World</b>	<b>192.7 million</b>	<b>192.3 million</b>	<b>193.6 million</b>	<b>5.6%</b>	<b>5.5%</b>	<b>5.5%</b>
Developed countries	34.1 million	32.8 million	32.4 million	5.7%	5.5%	5.4%
Emerging countries	143.0 million	143.0 million	144.6 million	5.6%	5.5%	5.5%
Developing countries	15.6 million	15.6 million	16.1 million	5.3%	5.3%	5.3%

Source: (ILO, 2018a)

Young people (below the age of 25 years) are disproportionately affected by unemployment. The global unemployment rate for youth was 13.6% in 2017 which is more than double the global overall unemployment rate of 5.6%.<sup>3</sup> Youth unemployment has increased from a 2016 level of 13.5% and a 2015 level of 13.2%.<sup>4</sup> Youth unemployment rates are higher among females than among males. In 2017, the global male youth unemployment rate was 12.9% and the female youth unemployment rate was 15.5%.<sup>5</sup> This exacerbates gender disparities.

As a means to address high youth unemployment rates, countries and multilateral organisations are increasingly focusing on promoting apprenticeships.<sup>6</sup> For example, Goal 4 of the Sustainable Development Goals (SDGs) focuses on quality education and within this goal, two targets specifically relate to apprenticeships as they are partly completed through vocational education and training:

- By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university; and

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<sup>1</sup> (Mlatsheni and Leibbrant, 2018)

<sup>2</sup> (Mlatsheni and Leibbrant, 2018)

<sup>3</sup> From (World Bank, 2018), drawing on ILO modelled estimates.

<sup>4</sup> From (World Bank, 2018), drawing on ILO modelled estimates.

<sup>5</sup> From (World Bank, 2018), drawing on ILO modelled estimates.

<sup>6</sup> (ILO, 2017)

- By 2030, substantially increase the number of youth and adults who have relevant skills, including TVET skills, for employment, decent jobs and entrepreneurship.<sup>7</sup>

In addition to the UN's focus on apprenticeships, the Group of 20 (G20) launched the "G20 Initiative to Promote Quality Apprenticeship" in July 2016 to increase the number, quality, and diversity of apprenticeship systems at the national level.<sup>8</sup> Some of the specific actions proposed by the G20 Initiative to Promote Quality Apprenticeships include: establishing national goals or targets to support the development, expansion, and improvement of apprenticeship programs; raising the quality of apprenticeships through forming social partnerships and including workplace learning; promoting apprenticeships in sectors with skills shortages; improving the attractiveness of apprenticeships to employers; and ensuring that apprentices benefit from decent working and training conditions.<sup>9</sup>

The ILO has also taken a leading role in driving the thinking about the future of apprenticeships globally. The ILO resolution entitled *The Youth Employment Crisis: A Call to Action* recognises the importance of improved TVET, apprenticeships, and other forms of workplace learning in linking education, training and employment.<sup>10</sup> The resolution calls on governments to initiate social dialogue on skills mismatch challenges and the standardisation of qualifications in response to labour market needs; improve the range and types of apprenticeships available; regulate and monitor apprenticeships, internships and related schemes through certification; and ensuring that they are used for learning and not replacing the existing workforce.<sup>11</sup>

Firms are central to increasing and improving the quality of apprenticeships because apprenticeships receive a large portion of their training in the workplace and this requires a considerable investment from firms. Firms are not however always well-informed on the benefits of apprenticeships and there has, in addition, been little research in developing and emerging countries, in particular, on the benefits of apprenticeships to firms.<sup>12</sup>

In seeking to better understand the non-marketable benefits of apprenticeships in South Africa, this report provides an overview of South Africa's apprenticeship system (Section 1.1) and a brief literature review on measuring the non-marketable benefits of apprenticeships (Section **Error! Reference source not found.**). Section 2 of this report outlines the approach to the research; while Section 3 provides the findings and analysis, and Section 0 gives the conclusions of the research.

## 1.1. South Africa's apprenticeship system

### 1.1.1. *The economic context of apprenticeships in South Africa*

In outlining the economic context of apprenticeships in South Africa, this section looks at South Africa's economic structure, unemployment in the country and the challenge of skills mismatch.

#### 1.1.1.1. *Economic structure*

South Africa is characterised by a sharp divide in economic access and opportunity. The formal sector is highly centralised with high levels of capital concentration and limited competition in key sectors such as mining and manufacturing. Capital-intensive industries result in the exclusion of small enterprises and make job creation expensive.<sup>13</sup> Furthermore, the economy has been deindustrialising with the manufacturing industry's share of employment decreasing while that of trade of services has been increasing. However, due

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<sup>7</sup> (United Nations, 2018)

<sup>8</sup> (ILO, 2017)

<sup>9</sup> (ILO, 2017)

<sup>10</sup> (ILO, 2017)

<sup>11</sup> (ILO, 2017)

<sup>12</sup> (ILO, 2017)

<sup>13</sup> (Phillip, 2011)

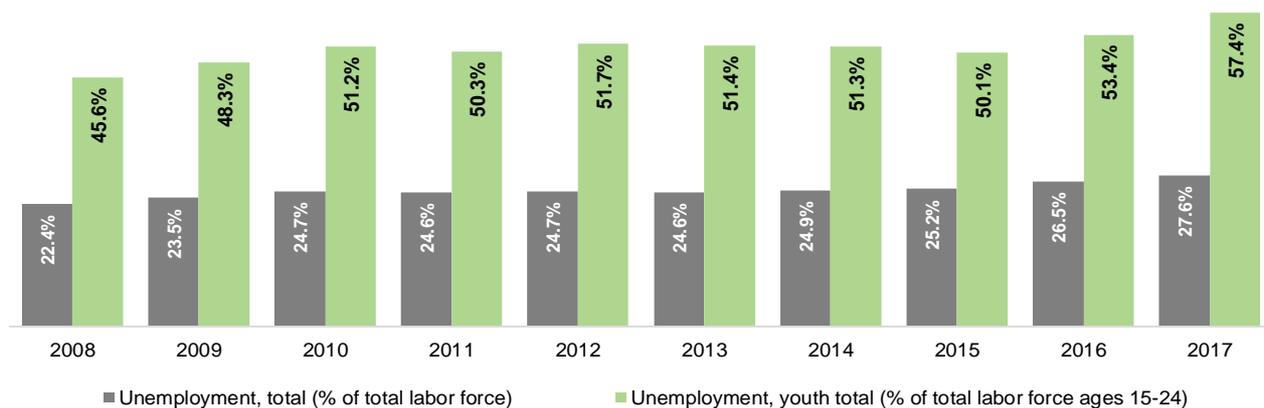
to low levels of human capital in the country, most of the employment in the services sector is in low wage jobs such as domestic work and private security. It is also concerning that since 2000, there has been a decline in the economy’s employment intensity, meaning that fewer jobs are created for every unit of additional output. This trend is most pronounced in the manufacturing sector which is dominated by capital-intensive heavy industry such as metals and machinery.<sup>14</sup> Declining employment intensity is a risk factor that is likely to worsen in the coming years with the rise in automation and digitalisation both locally and abroad. Theoretically, the informal sector is supposed to absorb those who are unable to find employment in the formal sector. However, South Africa’s economy is an anomaly in this regard as the informal sector makes up less than 20% of total employment, which is significantly below the estimated 66% for Sub-Saharan Africa.<sup>15</sup>

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### 1.1.1.2. Unemployment

South Africa’s total unemployment rate in 2017 was 27.6% and this rate has been steadily increasing over the last ten years, as shown in Figure 1 below.<sup>17</sup> The unemployment rate among South Africa’s youth (between the ages of 15 and 24) is almost double the overall unemployment rate. In 2017, the youth unemployment rate was 57.4%.<sup>18</sup>

Figure 1: South Africa’s total unemployment and youth unemployment rate (%)



Source: (World Bank, 2018) – ILO modelled estimates

Figure 2 below shows that youth unemployment is consistently higher among females than it is among males. In 2017 the female youth unemployment rate was 64.3%, while the male unemployment rate was 51.9%.<sup>19</sup> From an employment and skills policy perspective then, apprenticeships are one way of providing young unemployed people with skills development opportunities that facilitate their entry into the job market.<sup>20</sup> A study by the Human Sciences Research Council (HSRC) and the Department Labour in 2012 found that of the apprentices that entered the apprenticeship system only 9.4% reported being unemployed at the completion of their apprenticeship.<sup>21</sup> The majority of apprentices are therefore employed at the completion of their

14 (The Department of Trade and Industry, 2017)

15 (Statistics South Africa, 2018)

16 (Kathage, 2018)

17 (World Bank, 2018)

18 (World Bank, 2018)

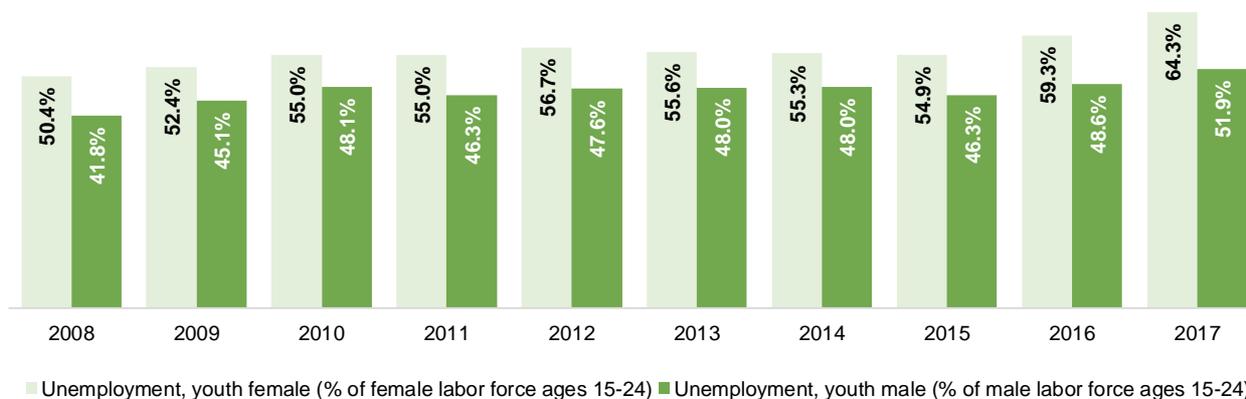
19 (World Bank, 2018)

20 (World Bank and International Labour Organization, 2013)

21 (Kruss, et al., 2012)

apprenticeships. These positive employment outcomes from apprenticeships have provided some justification for the continued policy interest in this form of work-based learning in South Africa.

**Figure 2: South Africa's female and male unemployment rate (%)**



Source: (World Bank, 2018) – ILO modelled estimates

### 1.1.1.3. Skills mismatch

The skills base of the South African labour force is fairly low.<sup>22</sup> 48% of those employed and 60% of the unemployed did not complete high school. While access to education is improving, the poor quality of education continues to be a constraint on skills development. Skills mismatch describes the imbalances between the type of skills that potential workers have and those required by industry. South Africa's skills mismatch takes on three dimensions: demand mismatch, educational supply mismatch, and qualification-job mismatch:

- **Demand mismatch:** This is determined by the type of jobs being created and the skills sets of the working-age population. The South African economy shows demand for high-skilled workers, but a surplus of low-skilled workers. This mismatch is the most significant type of skills mismatch in the South African context.<sup>23</sup>
- **Educational supply mismatch:** This is a mismatch between the types of skills produced by the education and training system and the extent to which they are aligned to the skills demanded in specific occupations. Currently, there is a need for more students to graduate in the science, technology, engineering and mathematics (STEM) fields from both the university and the TVET system.<sup>24</sup>
- **Qualification-job mismatch:** This gap has two dimensions. The first is the types of qualification required by workers in medium and higher-level occupations and the actual qualification that they hold. Second, this gap also examines the sectors and occupations that qualifications are absorbed into. Related to the first dimension, in South Africa higher education graduates find employment in higher skilled occupations while only a minority of TVET qualification holders do. Related to the second dimension, in South Africa, half of higher education graduates find employment in the community, social and personal services sector and STEM graduates are more likely to work in the financial services sector than in the manufacturing sector.<sup>25</sup>

<sup>22</sup> (Reddy, Borhat, Powell, Visser, & Arends, 2016)

<sup>23</sup> (Reddy, Borhat, Powell, Visser, & Arends, 2016)

<sup>24</sup> (Reddy, Borhat, Powell, Visser, & Arends, 2016)

<sup>25</sup> (Reddy, Borhat, Powell, Visser, & Arends, 2016)

South Africa has ambitious economic aspirations for the future that will require specialised skills. For example, the National Development Plan (NDP) prioritises manufacturing and mineral beneficiation<sup>26</sup> as priority investment sectors for South Africa's economy. In both sectors, South Africa is lacking in the skills required to realise the ultimate goals of localising production and increasing exports. In this context, apprenticeships are considered one way to build this capacity and develop sector expertise and experience through high-quality on-the-job skills acquisition. Furthermore, these skills may also be applied in other related sectors, addressing infrastructure constraints in the economy, such as the sufficient provision of power supply.

It has been argued that currently, South Africa produces too few artisans to meet the needs of the economy.<sup>27</sup> In 1985 there approximately 33 000 artisans received their certifications<sup>28</sup> in South Africa and by 1995, this figure had decreased to 22 000.<sup>29</sup> The number of artisans receiving their certifications in the country dropped to 4 500 in 2005 but has been slowly increasing since with there being 15 000 artisans receiving their certifications in 2014.<sup>30</sup> This decline was due to policy uncertainty regarding the new skills development regime and the introduction of learnerships. Firms were therefore focusing more on learnerships than apprenticeships (this is elaborated on Section 1.1.2 below). As part of the NDP, a target of 30 000 artisans by 2030 has been set.<sup>31</sup> It is clear then, that apprenticeships will be a key development focus of the country going forward.

From a skills development perspective, "the apprenticeship system, together with the various artisan training routes is, therefore, expected to respond to the national development challenges of the vocational education and training system and in particular enable a more determined thrust towards revitalising and making more attractive vocational careers in the mid- or intermediate education and training level" through Technical Vocational and Education Training (TVET) Colleges.<sup>32</sup>

The focus on TVET Colleges is important in addressing a bias towards university education in South Africa which is premised on a public perception that only university education is valued in the labour market. While it may be true that university graduates have the lowest unemployment rate (7.9%), there are other important society-wide factors that make apprenticeships an important part of the national skills development system. Many students who complete school are not eligible for university entrance or may not be suited to the model of teaching and learning that occurs in universities.<sup>33</sup> University tuition is also expensive, a problem that is partly because of the shortage of places at these institutions.<sup>34</sup> Therefore, the apprenticeship system is important for accommodating students that do not have access to the university system as well as those who are more practically inclined. In the absence of an alternative path to obtaining a qualification, there is a risk that youth who do not attend university will be pushed to the economic margins of society. The empowerment of individuals contributes to future social and economic developmental

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<sup>26</sup> "Beneficiation entails the transformation of a mineral (or a combination of minerals) to a higher value product, which can either be consumed locally or exported. The term is used interchangeably with value-addition". (Department of Mineral Resources, 2011)

<sup>27</sup> (Mzabalazo Advisory Services, 2014)

<sup>28</sup> "An artisan is a skilled worker who has passed a trade test after having completed an apprenticeship under a qualified tradesperson". (Mzabalazo Advisory Services, 2014)

<sup>29</sup> (World Bank and International Labour Organization, 2013)

<sup>30</sup> (Mzabalazo Advisory Services, 2014)

<sup>31</sup> (Mzabalazo Advisory Services, 2014)

<sup>32</sup> (World Bank and International Labour Organization, 2013, p. 117)

<sup>33</sup> (Equal Education, 2017)

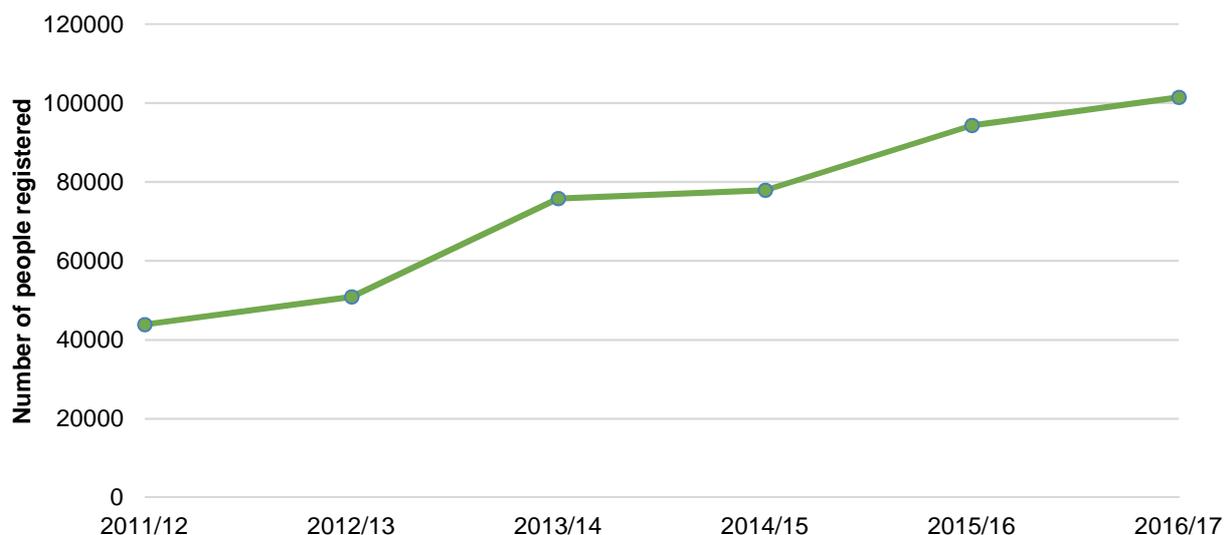
<sup>34</sup> (Cloete, 2016)

benefits such as autonomy, self-confidence, asset ownership and the capability to change existing social relationships and structures that would otherwise perpetuate cycles of poverty for vulnerable individuals.

### 1.1.2. The apprenticeship system

South Africa’s apprenticeship system is guided by two pieces of legislation, the Manpower Training Act of 1981 and the Skills Development Act of 1998.<sup>35</sup> The focus of the system shifted through the Skills Development Act in that the Act focuses on learnerships which were a new model of apprenticeships introduced to provide more diverse learning pathways for individuals and additional training opportunities for enterprises. Overall, apprenticeships have a more structured approach. On the other hand, learnerships tend to be broader and can apply to any of the eight National Qualifications Framework (NQF) levels, while apprenticeships result in an NQF 4 qualification.<sup>36</sup> Apprenticeships are typically between three and four years, while learnerships are between 12 and 18 months.<sup>37</sup> As a result of the learnership focus of the Skills Development Act, focus and funding shifted away from apprenticeships. The result was a decline in the number of apprenticeships in South Africa.<sup>38</sup> In response to this decline, the South African government launched the Joint Initiative on Priority Skills Acquisition (JIPSA) in March 2006 which sought to address weaknesses in the system.<sup>39</sup> Since then, the number of learnerships in the country has been steadily increasing, as shown in Figure 3 below.<sup>40</sup>

Figure 3: Number of people registered in learnerships in South Africa<sup>41</sup>



Source: Statistics on Post-School Education and Training: 2016. The rationale for apprenticeships in South Africa is two-fold. First, apprenticeships seek to provide work opportunities for South Africa’s unemployed youth and second, apprenticeships seek to address the country’s skills shortage.<sup>42</sup> Apprenticeships are work-based programmes that combine theory, practical learning and work-based training.<sup>43</sup> “An apprenticeship is

<sup>35</sup> (World Bank and International Labour Organization, 2013)

<sup>36</sup> (SASSETA, 2014)

<sup>37</sup> (SASSETA, 2014)

<sup>38</sup> (Mzabalazo Advisory Services, 2014)

<sup>39</sup> (Mzabalazo Advisory Services, 2014)

<sup>40</sup> (World Bank and International Labour Organization, 2013)

<sup>41</sup> DHET defines learnerships as: “refers to a learning programme that leads to an occupational qualification or part qualification, and includes an apprenticeship and cadetship.

(World Bank and International Labour Organization, 2013)

<sup>43</sup> (Mzabalazo Advisory Services, 2014)

an agreement between an apprentice and an employer for a set period of time during which the apprentice works and receives training in the workplace”<sup>44</sup> The ultimate output of an apprenticeship programme is an artisan. There are 124 trades for which artisan qualifications are required in South Africa.<sup>45</sup> The full list of trades is provided in Appendix 2 of this report. A formal apprenticeship is one pathway to becoming an artisan. There are three other key pathways, as shown in Figure 4 below.

Figure 4: Pathways to becoming an artisan



Source: (Mzabalazo Advisory Services, 2014)

Formal apprenticeships, the focus of this research report, and as outlined above, are a contract between an employer and an apprentice and consist of at least 80 weeks of workplace training, in addition to theoretical training requirements offered by private and public TVET colleges.<sup>46</sup> There are 3 forms of apprenticeships available in South Africa. These are the Competency Based Modular Training (CBMT) route, time-based route, and the Section 28 route:

- **The CBMT route:** Apprentices in this route are sponsored by an employer for the duration of the apprenticeship. Apprentices study in part-time block release format at a private or public TVET college. Apprentices gain practical work experience under the guidance of a senior artisan on-the-job and are required to successfully take four compulsory tests before taking the final trade test and qualifying as an artisan. The CBMT route takes between 3 and 4 years to complete.<sup>47</sup>
- **The time-based route:** Apprentices who take this route do not have to complete any requirements in terms of technical training or tests. The time-based route only requires that an apprentice received on-the-job training for a defined number of weeks. This route also takes between 3 and 4 years to complete.<sup>48</sup>
- **Section 28 route:** Under this route, apprentices with sufficient work experience, but without being formally trained or contracted over a period of time can take the trade test and qualify as an artisan.<sup>49</sup> This route is a recognition of prior learning.

<sup>44</sup> (World Bank and International Labour Organization, 2013, p. 118)

<sup>45</sup> (South African Government Gazette, 2012)

<sup>46</sup> (Mzabalazo Advisory Services, 2014)

<sup>47</sup> (Wildshult, 2012)

<sup>48</sup> (Wildshult, 2012)

<sup>49</sup> (Wildshult, 2012)

In addition to the above three routes, the accelerated artisan programme was started by merSETA, the Sector Education and Training Authority for the manufacturing sector, and is targeted at learners that have completed their studies but cannot find a placement. To address this, merSETA funds workplace training for apprenticeships using funds from the sector training levy.<sup>50</sup> The third pathway is the integrated occupational qualification which allows learners to be employed while studying, and the fourth is through the recognition of prior learning which recognises previous work that learners have completed in the artisanal field.<sup>51</sup> All these pathways culminate in a trade test, the successful completion of which leads to issuance of an artisan's certificate. There are five key institutional stakeholders in South Africa's apprenticeship system. These, are as shown in Table 2, Indlela, the National Artisan Moderation Body (NAMB), private trade test centres, the Sector Training and Education Authorities (SETAs)<sup>52</sup> and private and public TVET Colleges. According to the Department of Higher Education and Training (DHET), there are 50 public TVET colleges in South Africa, all with multiple campuses.<sup>53</sup> By province, 18% of the public TVET colleges are in KwaZulu-Natal, 16% are in Gauteng and the Eastern Cape, 14% are in Limpopo, 12% are in the Western Cape, 8% are in the Free State, 6% are in Mpumalanga and the North West, and 4% are in the Northern Cape.<sup>54</sup> DHET maintains a list of registered private TVET colleges in South Africa which indicates there are 297 private colleges.<sup>55</sup>

**Table 2: Key stakeholders in South Africa's apprenticeship system**

Stakeholder	Role
Indlela <sup>56</sup>	Indlela is the primary public accreditation institution for the mandatory trade test. <sup>57</sup> Indlela forms part of DHET.
NAMB	NAMB is the body responsible for artisan development in South Africa. NAMB holds the legal responsibility of the apprenticeship system in South Africa. NAMB falls under DHET. More specifically, NAMB monitors the performance of trade test centres, moderate trade tests, develops and maintains a database of registered apprentices, records artisan achievements. NAMB is located within Indlela.
SETA	The SETAs oversee (financially and logistically) and quality assure apprenticeships in their sector. SETAs are the central point of contact for company's offering apprenticeships.
Private trade test centres	There are a number of private centres that conduct trade tests. These centres are accredited through the SETAs.
TVET Colleges	FET Colleges provide off-the-job training to apprentices.
Firms	Firms are central to increasing and improving the quality of apprenticeships because apprentices receive a large portion of their training through them which requires a considerable investment from firms.

Sources: (World Bank and International Labour Organization, 2013)

<sup>50</sup> (Mzabalazo Advisory Services, 2014)

<sup>51</sup> (Mzabalazo Advisory Services, 2014)

<sup>52</sup> There are 21 SETAs in South Africa: AGRISSETA, BANKSETA, Construction SETA (CETA), Chemical Industries SETA (CHIETA), Culture Arts, Tourism, Hospitality and Sports SETA (CATHSETA), Energy and Water SETA (ESETA), Education Training and Development Practices SETA (ETDPSETA), Fibre, Processing & Manufacturing SETA (FPMSETA), Food and Beverage Manufacturing Industry SETA (FOODBEV), Financial and Accounting Services SETA (FASSET SETA), Health and Welfare SETA (HWSETA), Insurance SETA (INSETA), Local Government SETA (LGSETA), Media, Advertising, Information and Communication Technologies SETA (MERSETA), Manufacturing, Engineering and Related Services SETA (MICTSETA), Mining Qualifications Authority SETA ((MQSETA), Public Service SETA (PSETA), Safety and Security SETA (SASSETA), Services SETA, Transport SETA (TETA) and Wholesale and Retail SETA (W&RSETA) (Skills Academy, 2018).

<sup>53</sup> (DHET, 2018)

<sup>54</sup> (DHET, 2018)

<sup>55</sup> (DHET, 2018a)

<sup>56</sup> Formerly the Central Organisation for Trade Testing (COTT) (World Bank and International Labour Organization, 2013).

<sup>57</sup> Up until 2000, INDLELA was the only accreditation institution for mandatory trade tests. Since 2000 the accreditation system has been decentralised and private trade test centres have been established.

In order to promote apprenticeship programmes, a number of incentives are in place. A skills development levy is paid by firms on an annual basis and is allocated as 1% of payroll with a minimum threshold of a R500 000 payroll.<sup>58</sup> The skills development levy is paid to the National Skills Fund (NSF) and the SETAs and from there, firms apply to the SETAs for an artisan development grant which amounts to R140 000 per learner for the duration of the apprenticeship.<sup>59</sup> This covers approximately 47% of the actual costs of the apprenticeships for the firms.<sup>60</sup> In addition to the artisan development grants, firms are eligible for a tax rebate from the South African Revenue Service (SARS).

### 1.1.3. Research on apprenticeships in South Africa

Despite the expectation amongst policymakers that apprenticeships deliver benefits to enterprises, as highlighted in Section 1, limited research has been done on the benefits of apprenticeships in developing and emerging countries. Looking at South Africa, specifically, whilst research has been done on apprenticeships in general, only two previous studies have examined the benefits of apprenticeships for firms. In addition to more general research, the South African government has conducted evaluations on the impacts of learnerships and apprenticeships but these did not consider either the financial or non-financial benefits to firms. The key pieces of research on the subject are summarised in Table 3 below.

**Table 3: Overview of research conducted on apprenticeships in South Africa**

Category of Research	Research Conducted
Benefits of apprenticeships	“Cost-Benefit-Quality (CBQ) Report” looking at the CBQ of in-company training provided in 142 South African companies between 2012 and 2015. This research was done by merSETA and the University of Bremen.
	“Costs, benefits and quality in TVET: Method, results and contexts of implementing a self-evaluation tool for companies in Germany and South Africa” This research was completed in 2011 by Helen Brown and Ursel Hauschildt and it was included in a publication called “Assuring the acquisition of expertise. Apprenticeship in the modern economy”.
General research	“Towards a Model Apprenticeship Framework: A Comparative Analysis of National Apprenticeships Systems” was published in 2013 by the World Bank and ILO. South Africa was a case study in this report.
	“Developing Skills and Capabilities through the Learnership and Apprenticeship Pathway Systems” was completed in 2012 by the HSRC
	OECD Policy Review of Vocational Education and Training (VET) and adult learning – Country Studies
Public sector evaluations	The “Expenditure performance review of the National Artisan Development Programme” was completed in 2014. This review was commissioned by National Treasury and conducted by Mzabalazo Advisory Services.
	“Impact assessment of learnerships and apprenticeships”. This impact evaluation was commissioned by merSETA and completed in 2008. The evaluation was carried out by the HSRC.
	“HWSETA Case Study 2011: Skills development for the Health and Social Development Sectors: A case study for the Department of Labour research project: Assessing the impact of learnerships and apprenticeships under NSDSII”
	“Evaluation of the Impact of Agricultural Learnership in the Western Cape” was commissioned by the Western Cape Department of Agriculture and completed in 2014.
	“Evaluation of the learnership academy model” was completed in 2005. This evaluation was commissioned by Services SETA.
	“Impact assessment of national skills development strategy II” was completed in January 2012. This impact assessment was conducted by the HSRC and commissioned by the Department of Labour.
	“Impact assessment of learnerships, apprenticeships and bursaries” was completed in December 2014. This assessment was commissioned by the Fibre Processing and Manufacturing (FP&M) SETA.

<sup>58</sup> (World Bank and International Labour Organization, 2013)

<sup>59</sup> (Mzabalazo Advisory Services, 2014)

<sup>60</sup> (Mzabalazo Advisory Services, 2014)

It is clear from Table 3 that while some research has been done on apprenticeships in South Africa, surprisingly, little has focussed on the benefits of apprenticeships to firms, which may reflect a lack of awareness of approaches or actual methodological difficulties in obtaining data on costs and benefits. It is interesting to note, as shown in Table 3, that there is a considerable public sector interest in terms of evaluating apprenticeship programmes. Large-scale evaluations have been commissioned by the Department of Labour, the Western Cape Provincial Department of Agriculture, National Treasury, the Human Sciences Research Council, and three SETAs (merSETA, Services SETA and FP&M SETA). This is indicative of an interest in apprenticeships, as well as their impacts, particularly on apprentices.

## 1.2. Emerging themes from existing Literature

The existing research on the apprenticeship system in South Africa highlights five emerging themes. These are administration, role of employers, coordination between TVET colleges and apprenticeship programmes, policy uncertainty and benefits to individuals and firms:

- **Administration:** The apprenticeship system has several administrative challenges.<sup>61</sup> These include poor research by SETAs to understand the supply and demand of artisans in the economy, complicated reporting and monitoring systems by SETAs, inconsistent quality assurance across apprenticeships and learnerships, and delays in accessing trade testing.<sup>62</sup> These issues are the source of frustration on the part of employers and apprentices and impact the rate at which qualified artisans are being produced and absorbed by the economy. Furthermore, SETA processes are viewed as an administrative burden on firms.
- **Role of employers:** Employers need to be supportive of the apprenticeship system in order for it to be successful and for apprentices to successfully complete their training programmes and earn the qualification.<sup>63</sup> There are also differences between large, well established firms and smaller firms in terms of the value of apprenticeships and the presence of appropriate structures to implement them. While larger firms are often more positive about offering apprenticeships, small firms highlight the fact that they are not supported by the relevant authorities,<sup>64</sup>
- **Coordination between TVET colleges and apprenticeship programmes:** Despite the expansion of public TVET colleges into artisan development, there are several challenges that continue to hinder the success of the TVET system and which discourage firms from partnering with TVET colleges in the apprenticeship system.<sup>65</sup> These include poor access, low throughput rates, poor governance at colleges, limited interactions between colleges and employers, misaligned curricula, and uneven levels of skills among teachers.<sup>66</sup>
- **Policy uncertainty:** The Skills Development Act of 1998 emphasised learnerships, of which apprenticeships would be a part.<sup>67</sup> However, this was not sufficiently communicated to the market resulting in employers not offering apprenticeships in favour of offering learnerships. There has been a recent increase in firms offering apprenticeships as they acknowledge the relative strengths of apprenticeship training to learnerships.<sup>68</sup>
- **Benefits to individuals and firms:** Apprenticeships have been found to significantly improve the labour market prospects of individuals and apprentices typically stay with their employers after qualifying as artisans which shows that the employment opportunities are sustainable.<sup>69</sup> Training has also been found to help with confidence and

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<sup>61</sup> (Mukora, et al., 2008)

<sup>62</sup> (Mukora, et al., 2008)

<sup>63</sup> (Mukora, et al., 2008)

<sup>64</sup> (Mukora, et al., 2008)

<sup>65</sup> (Mzabalazo Advisory Services, 2014)

<sup>66</sup> (Mzabalazo Advisory Services, 2014)

<sup>67</sup> (Mukora, et al., 2008)

<sup>68</sup> (Mukora, et al., 2008)

<sup>69</sup> (IQ Business, 2014)

communication skills. From this, employers report improved productivity and workplace behaviour from employees that have been part of training programmes.<sup>70</sup>

The challenges facing the apprenticeship system South Africa are administrative and related to the SETAs requirements and the capacity of public institutions to support the apprenticeship system. This may discourage many firms from offering apprenticeships or formalising their existing programmes.

### 1.3. Researching the benefits of apprenticeships

Research on the benefits of apprenticeships in South Africa have focused on the financial or marketable benefits. An example of this is the CBQ Report referenced in Section 1.1.3 above. This study assessed the costs, benefits and quality of apprenticeship programmes across 142 companies in South Africa between 2013 and 2015. In terms of costs, the study focused on wage and staff costs<sup>71</sup>, operational costs and write-downs<sup>72</sup> and other costs<sup>73</sup>. In terms of benefits, the study focused primarily on improved productivity of the apprentices as well as recruitment benefits and benefits from subsidies received.<sup>74</sup> It was found that in apprenticeships with a duration of four years, the benefits outweighed the costs, while for apprenticeships of three years, the costs outweighed the benefits.<sup>75</sup> When factoring in quality, the study looked at reflective work experience, professional level of training, autonomous or independent learning, learning in business processes, vocational commitment and professional competence.<sup>76</sup> Hauschildt found that in general, the quality of apprenticeships was better in small and medium enterprises, when compared to larger firms, and that in small and medium firms, the benefits more frequently outweighed the costs.<sup>77</sup>

This approach generally reflects research on firm level benefits that has been done outside South Africa, such as the large-scale surveys in Germany and Switzerland (see, for example ILO 2017). However, when it comes to measuring non-marketable or non-financial benefits, even fewer studies have focused on this aspect.

According to their 2011 survey conducted in 21 European countries, the European Centre for the Development of Vocational Training (CEDEFOP) found that companies with an apprenticeship system may also become more productive due to higher worker-satisfaction, improved organization culture, and technological innovation. The study distinguishes between economic and social benefits at the micro-, meso- and macro- levels but does not recommend how to directly quantify or measure them.<sup>78 79</sup>

A company survey provided by the Association of Accounting Technicians (AAT) and Cebr strongly supports these findings.<sup>80</sup> For example, a majority of businesses questioned stated that apprentices helped to improve product and service quality as well as staff morale.<sup>81</sup> American employers also did not only see a pure monetary (and production-related) advantage in providing apprenticeship training, but also looked at the benefits in terms of two further metrics, i.e. workforce (reduced turnover, improved recruitment, gaining a

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<sup>70</sup> (IQ Business, 2014)

<sup>71</sup> Including staff costs of trainees and staff costs for trainers (Hauschildt, 2016).

<sup>72</sup> Including write-downs (write-offs\_ for machinery and equipment purchased for training (Hauschildt, 2016).

<sup>73</sup> Including teaching and learning material, fees for exams, professional and protective clothing, external training, training management and administration, insurance and travel and accommodation (Hauschildt, 2016).

<sup>74</sup> (Hauschildt, 2016)

<sup>75</sup> (Hauschildt, 2016)

<sup>76</sup> (Hauschildt, 2016)

<sup>77</sup> (Hauschildt, 2016)

<sup>78</sup> (CEDEFOP, 2013)

<sup>79</sup> (CEDEFOP, 2011)

<sup>80</sup> (Cebr, 2014)

<sup>81</sup> (Cebr, 2014)

pipeline of skilled employees, and development of potential future managers) as well as soft skills (improved employee engagement, greater problem solving abilities, flexibility in performing a variety of tasks, and a reduced need of supervision).<sup>82</sup>

However, a survey based on four recent Australian case studies in hospitality on the contribution of VET student placement-to-innovation in host organizations found that: “innovation” -- in its stricter sense of significantly improving goods, services, processes, or methods -- could not really be achieved by learners due to a lack of experience.<sup>83</sup> On the other hand, innovation -- in the sense of introducing new ways of doing things that are integral to everyday work -- was something likely to be enhanced by students. Here, it was recognized, that learners come into an organization with new (theoretical) knowledge, which is more contemporary than those of existing staff members. This means that VET student placement allows for a certain degree of knowledge diffusion which has the potential for workplace innovation.<sup>84</sup>

Following the CBQ research in South Africa and considering the studies that have considered non-marketable benefits referred to above, this research sought to address the gap in knowledge on the non-marketable benefits of apprenticeships in South Africa.

For the purpose of this research, non-marketable benefits or non-financial of apprenticeships are defined as positive but non-quantifiable impacts of apprenticeships training on the enterprise, colleagues and apprentices.

Drawing on the methodological review conducted by the ILO and the University of Bremen<sup>85</sup>, a list of non-marketable benefits was drawn up for use in the study. These are provided in Table 4 below.

**Table 4: List of non-marketable benefits of apprenticeships**

<p><b>Benefits to the firm and the colleagues of apprentices</b></p>	<ul style="list-style-type: none"> <li>• Improved work climate and improvements to productivity (through, for example, improved job satisfaction, team spirit, training culture, commitment to work and staff morale)</li> <li>• Improved staff retention – lower staff turnover and absenteeism</li> <li>• Improved public image and reputation, recognition of firm’s contribution to social good and fulfilment of corporate social responsibility (CSR)</li> <li>• Improved innovation and improvement in work process that apprentices may bring about</li> </ul>
<p><b>Benefits to apprentices</b></p>	<ul style="list-style-type: none"> <li>• Improved technical knowledge required for the occupation</li> <li>• Improved professional experience, practice skills for the occupation</li> <li>• Improved Flexibility / adaptability</li> <li>• Improved effective communication skills</li> <li>• Improved problem solving</li> <li>• Improved creativity</li> <li>• Improved interpersonal skills</li> <li>• Improved teamwork</li> <li>• Improved well-being, physical and mental health</li> <li>• Improved self-confidence / self-esteem</li> <li>• Improved life satisfaction</li> <li>• Improved employability</li> </ul>

<sup>82</sup> (United States Department of Commerce, 2016)

<sup>83</sup> (Hodge, Smith, Field, & Flynn, 2017)

<sup>84</sup> (Hodge, Smith, Field, & Flynn, 2017)

<sup>85</sup> This research drew on (Hauschildt, 2016), (Griffin, 2016), (CEDEFOP, 2011) and (CEDEFOP, 2013).

The research team used these benefits as the basis for the design of the research instruments used in the study. More detail on the research approach is elaborated on in Section 2 below.

## **2. Method**

A combination of quantitative and qualitative methods was used in conducting this research. This multi-method approach included a document and literature review; an online survey; and in-depth interviews. A review of relevant literature and policies was conducted prior to developing the data collection tools. Pertinent segments of this review have been included in the preceding sections and referenced throughout the report where relevant. The literature review formed the basis for the online survey and key informant interviews which are elaborated on below. In total, 18 enterprises were directly involved in face to face interviews with a further 30 completing a survey.

### **2.1. Key informant interviews**

The purpose of the interviews was to gather the views of important stakeholders in firms that offer apprenticeships. The interviews were conducted either telephonically or face-to-face. Standardised semi-structured interview guidelines (see Appendix 1) were developed for the discussions and were aimed at understanding the non-marketable benefits of apprenticeships programmes. The list of people interviewed, along with their position and organisation is presented in the following table:

Table 5: List of people interviewed

Respondent Type					Organisation	About the Organisation
Apprentices	Human Resources (HR) or Training	Line Management	Senior Management	Unknown		
●	●		●		Aerosud Aviation	Supplier of aerostructure and aircraft interior components and supply chain management ( <a href="http://www.aerosud.co.za">www.aerosud.co.za</a> ).
●	●				Aluglass Bautech	Manufacturer and supplier of glass ( <a href="http://www.aluglass.co.za">www.aluglass.co.za</a> )
	●				Bell Equipment	Manufacture, distribution and support of material handling equipment ( <a href="http://www.bellequipment.com">www.bellequipment.com</a> ).
	●				Columbus Stainless Steel	Producer of stainless-steel flat products ( <a href="http://www.columbus.co.za">www.columbus.co.za</a> ).
			●		Eduardo Construction	Manufacturing – welding, rigging, fabrication and technical training ( <a href="http://www.eduardo.co.za">www.eduardo.co.za</a> ).
	●				Golden Arrow	Cape Town-based bus service ( <a href="http://www.gabs.co.za">www.gabs.co.za</a> ).
			●		High Pressure Valve Service	Manufacture of high-pressure valves.
●			●		Instrument Transformer Technologies	Manufactures and distributes high voltage instrument transformers and associated equipment to power utilities, municipalities, mines and railways ( <a href="http://www.ittza.co.za">www.ittza.co.za</a> ).
●	●	●			Komatsu	Manufacture, supply and servicing of construction equipment and parts ( <a href="http://www.komatsu.co.za">www.komatsu.co.za</a> ).
			●		MTI Engineering	MTI Engineering provides structural and civil engineering services to the mining industry ( <a href="http://www.mtiengineering.co.za">www.mtiengineering.co.za</a> ).
	●				Nampak	Diversified packaging manufacturer ( <a href="http://www.nampak.com">www.nampak.com</a> ).
	●				ProServ (EOH)	A professional services company offering sustainable skills development solutions ( <a href="http://proserv.co.za">http://proserv.co.za</a> ).
	●				RHP Consulting	Air-conditioning and refrigeration services.
	●				South African Bank Note Company	A subsidiary of the South African Reserve Bank, the South African Bank Note Company prints bank notes ( <a href="http://www.resbank.co.za">www.resbank.co.za</a> ).
				●	Transnet (East London)	Rail, port and pipeline company ( <a href="http://www.transnet.net">/www.transnet.net</a> ).
			●		Vesconite Bearings	Manufacture of self-lubricating bearings and bushings ( <a href="http://www.vesconite.com">www.vesconite.com</a> ).
			●		Welfit Oddy	Design, manufacture and sale of tank containers, bulk liquid shipping containers and transport containers for international chemical and food grade logistics market ( <a href="http://www.oddy.co.za">www.oddy.co.za</a> ).
	●				Artisan Training Institute	The Artisan Training Institute provides artisan training in welding, fitting and turning, millwright, boiler making, plating, welding, tractor mechanics, auto electrics, measurement control and instruments and rigging ( <a href="http://www.artisantraining.co.za">www.artisantraining.co.za</a> ).

## 2.2. Online survey

Using key questions drawn from the interview schedule, a survey was developed to assess non-market benefits of apprenticeship training and how they are related to the productivity of the enterprise. Using the survey, we collected data on selected key benefits of apprenticeships using the framework shown in Table 4. To the extent possible, the survey aimed to gain insights into the linkages between non-market benefits of apprenticeship training and the performance of the enterprise. The survey also looks at the benefits of apprenticeships for apprentices and their colleagues.

Genesis developed an online structured questionnaire (see Appendix 1) that was sent to the local ILO office for distribution amongst local stakeholders and to merSETA. Through merSETA, the survey was sent to the Steel and Engineering Industries Federation of South Africa (SEIFSA). SEIFSA sent the survey link out to their membership through their newsletter. The bulk of the survey responses originated from SEIFSA. The following tables describe the sectors represented in the sample achieved, the positions of the respondents and the duration of the apprenticeships offered by respondents.

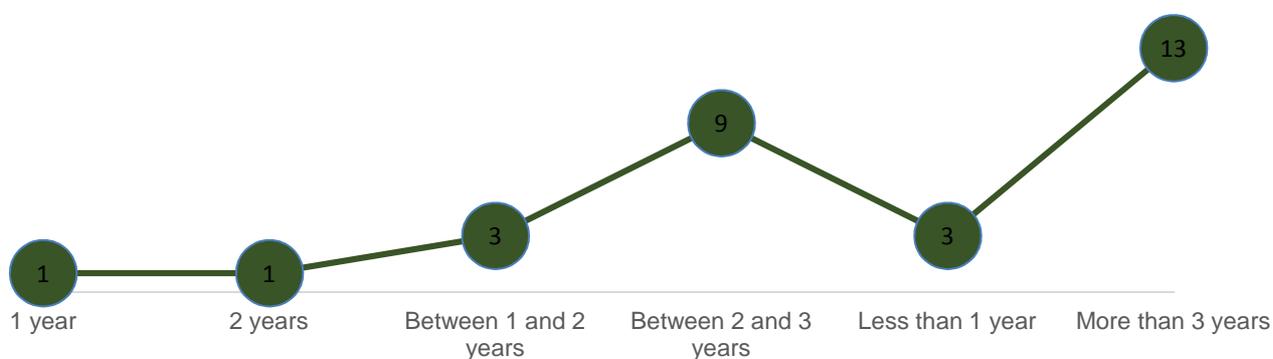
**Table 6: Sector split of survey sample**

Number of Firms by Sector	
Auto manufacturing	1
Metal and engineering	23
Motor retail & component manufacturing	1
Other - Write In (Required)	3
Plastics industries	2
<b>Total</b>	<b>30</b>

**Table 7: Respondent type**

Respondent type	
HR and training	12
Leadership	6
Management	8
Other	4
<b>Total</b>	<b>30</b>

**Figure 5: Duration of apprenticeships offered by survey respondents**



## 2.3. Limitations

The key limitations to this research related to sourcing respondents, low response rates and interview length:

- **Sourcing respondents:** At the beginning of this research, the intention was to source interview and survey respondents through merSETA and their database. merSETA was, however, unable to share their membership contact details with the research team because of the Protection of Personal Information Act. merSETA did, however, send the survey link to their regional managers. Ultimately, the majority of respondents were sourced through cold-calling firms that offer apprenticeships in South Africa. This process caused considerable delays in the implementation of the research.
- **Low interview response rates:** Related to sourcing respondents, cold-calling potential respondents was a challenge for the research team and response rates to these calls were low. An additional challenge of cold-calling respondents was the details regarding their participation in the apprenticeship scheme provided online were not always up-to-date.
- **Interview length:** The research team had proposed one-hour interviews with respondents. However, a number of respondents could not give more than 30 minutes of their time.
- **Reaching apprenticeships:** When the research team contacted firms, reaching apprentices for interviews was a challenge. Often apprentices were located in different locations and could not take time away from their everyday work to be interviewed. Interviewing apprentices was more feasible for companies with smaller apprenticeship programmes.

## 3. Findings and analysis

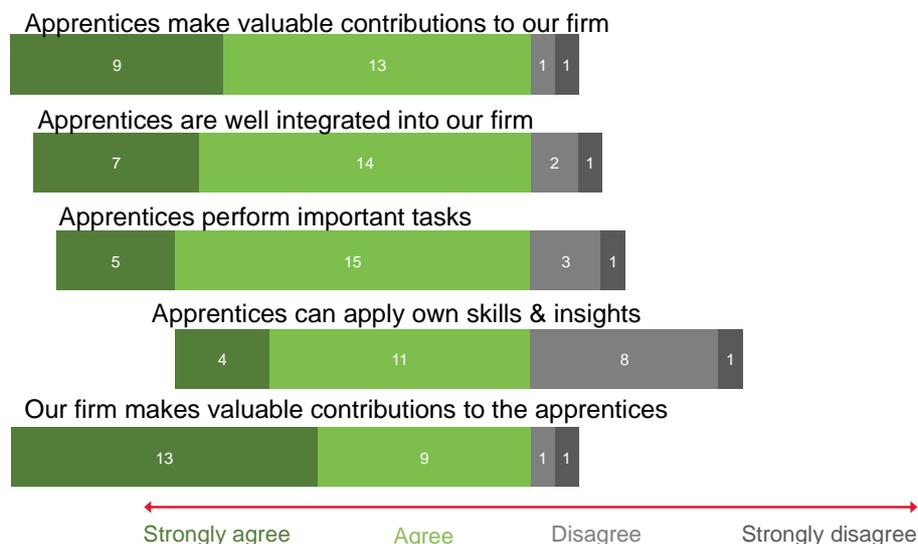
The following section presents the qualitative and quantitative research findings gathered through interviews with senior management, line management, training staff, and apprentices as well as the online survey of firms offering apprenticeships. The section begins with an analysis of the motivations behind a firm's decision to offer apprenticeships. This analysis is based on the collated data and other material drawn from key skills development policy documents. A brief discussion of the benefits that could accrue to society follows and is informed by a review of the South African socio-economic context. An analysis of the benefits of apprenticeships to firms and to individual apprentices concludes this section of the report.

### 3.1. Why Firms offer apprenticeships

Manufacturing in South Africa has become increasingly geared towards highly niche products that are made using unique techniques and equipment. It is difficult for external training providers to provide training of a sufficiently high quality that is specialised and still provides a sufficient supply of skilled labour. Furthermore, the main source of candidates for apprentices are TVET colleges that are reported to face challenges regarding the updating and modernising of curricula and incorporating the latest technological developments in different sectors. Even if the skills taught have been updated, companies report using specific tools that graduates would need to re-learn how to use. Exacerbating this, the pedagogical orientation of TVET colleges has become less practical and more theoretical in approach over time. This results in students leaving TVET colleges without the practical competencies that are required by industry. Accordingly, apprenticeships were reported to be an important part of bridging the gap between theory and practice.

The survey finds that firms appreciate the contributions of apprentices and are positive; however, it also finds that it is less the case that apprentices immediately bring new ideas or perform important tasks within the firm. This is shown Figure 6 below.

Figure 6: Apprentice contributions to firms (survey n = 24)



The most important motivation to offer these apprenticeships reported by firms is to build a skills base of artisans and a pipeline of quality talent for the individual firm. This allows for the easier facilitation of the transition from being an apprentice to an artisan, the availability of new hires from an existing talent pool and the specialisation of workers.

Beyond this self-serving motivation, firms reported a strong appreciation for the need to address the skills shortage in the South African manufacturing sector more broadly. Addressing the skills shortage and being part of the solution to the problem are important considerations for companies that choose to invest the time and finances to offer apprenticeships. These social motivations for offering apprenticeships are found to be more prevalent among smaller companies with less established apprenticeship programmes (informal apprenticeships). In these cases, there is seldom any direct financial benefit to the firm since they are not registered with the relevant authorities governing apprenticeships and offer them on an *ad hoc* basis. A potential downside of informal apprenticeships offered purely as a means for the firm to contribute to society is that the apprentice may not benefit from formal accreditation or certification once the apprenticeship comes to an end.

From a policy perspective, the Broad-Based Black Economic Empowerment (BBBEE) system is found to be a notable motivating factor for firms to offer apprenticeships. B-BBEE is a mechanism aimed at addressing economic disparities that emerged between racial groups as a result of apartheid policies. Under this system, firms can earn points on the basis of their contributions to transformation across seven pillars, namely ownership, management control, employment equity, skills development, preferential procurement, enterprise and supplier development and socio-economic development.<sup>86</sup> Under the BBBEE Act, firms can only earn skills development points if they contribute towards decent work and sustainable livelihoods;

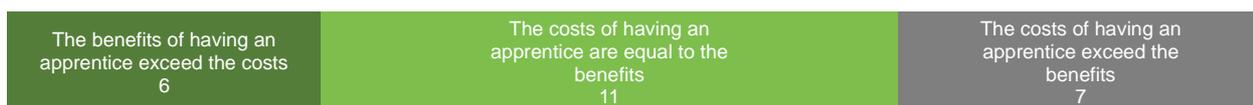
<sup>86</sup> (Liebenberg, 2013)

promote the development of an industrial skills base and value-adding manufacturing, and focus on creating career paths for employees.<sup>87</sup> Therefore, a firm can improve their BBBEE score by employing apprentices.

From a financial perspective, companies have a strategic initiative to apply for funding and then offer apprenticeships due to the availability of discretionary grants and rebates. However, while these financial incentives exist, they are reported to be insufficient and it is found that the majority of apprenticeship programmes are offered without financial consideration or where funding is not the prime determinant of whether apprenticeship programmes are offered or not. The funding model for employers and the financial spinoff from the government for the companies is reported to not cover all costs and so companies are themselves constrained by the number of places that can be offered to incoming apprentices. However, it has been noted that the perception that it is the government's responsibility to pay for apprenticeships is a hindrance and this expectation is unfounded given the benefits to firms having such apprenticeship programmes.

The survey found that 17 out of 24 respondents (~71%) felt that in general the benefits of having an apprentice exceeded or equalled the costs (see Figure 7). This illustrates that in the majority of these cases firms recognise that they are either breaking even or benefiting from employing apprentices, which the in-depth interviews confirmed.

**Figure 7: Benefits vs costs of apprentices (survey: n = 24)**



Source: Survey results

The additional provision of subsidies to smaller companies would provide much-needed assistance to those companies that wish to train and provide apprenticeship programmes. Having to rely on a small firm's requirements, financial capital and limitations as a base for the offering of apprenticeships can be constrained to the overall contribution and impact that the increased training of individuals can provide to the economy and society in general. This is less of a challenge for larger firms.

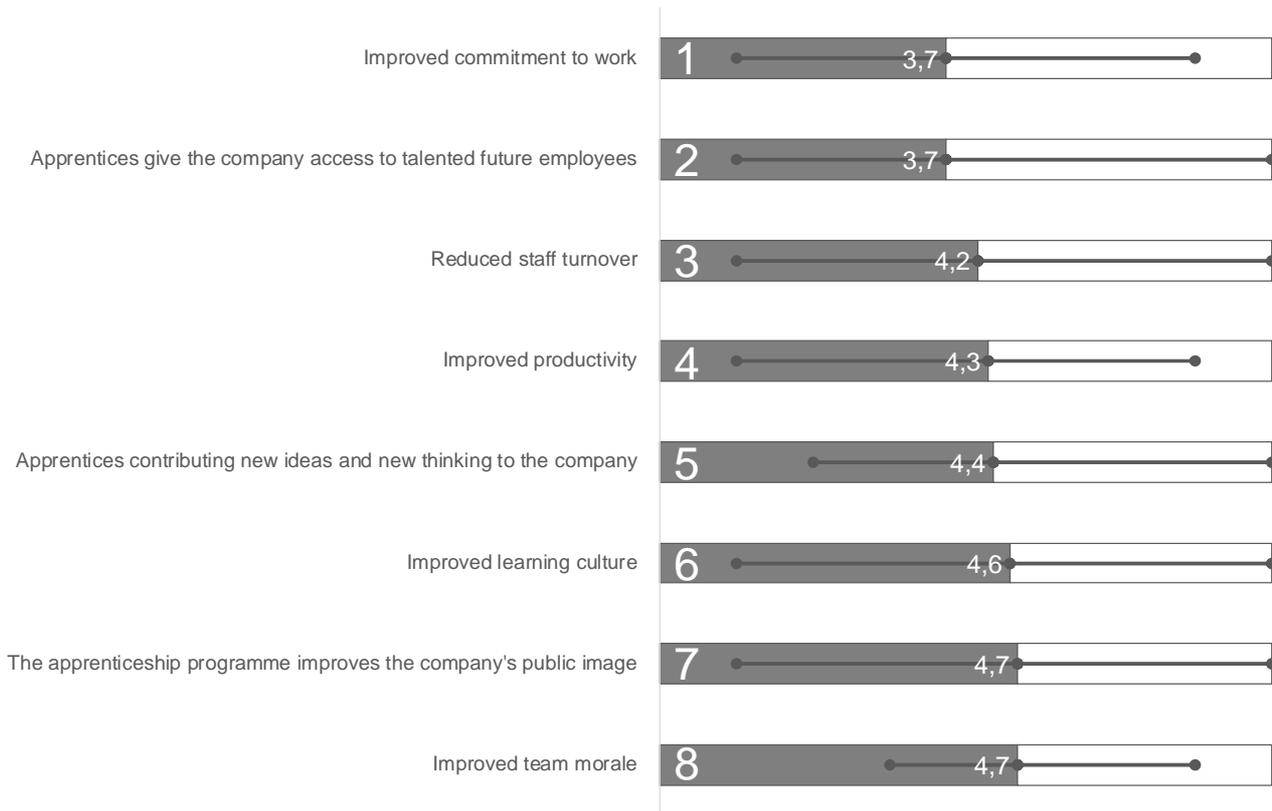
### 3.2. Benefits for the firms

There are a plethora of potential non-market or non-financial benefits of having apprenticeship programmes that may accrue to firms. The online survey finds that firms rank an improved commitment to work as being the greatest benefit of having apprentices, followed by improved access to talent pools, and reduced staff turnover (see Figure 8). Survey participants were asked to rank 8 benefits of apprenticeships in order from the most relevant (rank = 1) to the least relevant for their firm. The lowest ranked benefits (rank = 8) are improved team morale and an improved learning culture, as such, the lower scores reflect the greatest benefits.

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<sup>87</sup> (ADCORP, 2017)

Figure 8: Average ranking of benefits to firms (survey: n = 24)



Drawing on the interviews conducted, the key benefits to firms that were identified related to an improved talent pool and retention of apprentices; reduced staff turnover; skills development and higher human capital. These are elaborated on below.

### Talent pool and retention of apprentices

Apprentices are described as a stable talent pool of staff with companies aiming to keep their apprentices as employees. Apprentices are found to be more aware than external hires of the standards expected, have experience with specialised machines and possess in-house knowledge of the firm, systems, people and environment. Due to their history with a firm, apprentices also show great commitment to their work. As a result, companies reported having a higher level of confidence in the fact that apprentices are qualified to do what they need to do. This means that they can train apprentices specifically to the firm's requirements with this specialised training contributing positively to a firm's growth.

Across all interviews, apprentices were cited as an effective way to remove some of the risks from the recruitment process. This is the primary reason cited by senior management for offering apprentices and may be indicative of the specialised nature of these firms as well as of wide variations in the quality of training that is on offer in the wider market. This sentiment was shared across the sample, regardless of firm size or the amount of time that the firm had been offering the apprenticeship. All interviewees indicated that former apprentices made up a significant proportion of their total workforce. Furthermore, they indicated that in instances where they do not hire an apprentice immediately after the conclusion of the apprenticeship, former apprentices are the first to be considered for new vacancies because the firms have already established their competence; built a relationship of trust with the apprentice; and because the apprentice is familiar with the firm environment. This was cited as a major feature in a firm's ability to grow and control their talent pipeline.

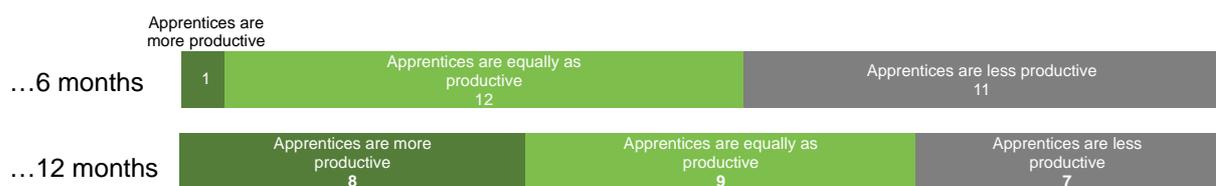
## Reduced staff turnover

Interviewees indicated that very few apprentices drop out of the apprenticeship programmes. In instances where there were drop-outs, the majority of the reasons cited were personal (issues with finances, transport, sickness, pregnancy), issues with performance, the apprentice discovered that they were more interested in another industry/sector or that they left to seek employment at a different firm. The survey found that firms report a completion rate of 87% on average, with an interviewee in the training industry claiming that apprenticeships experience the lowest dropout rates with ~90% completing their programmes in comparison to 80% of those who go through internship or learnership programmes. This interviewee went further to say that apprenticeships resulted in placement rates of around 90%, double the 40% on average of learnerships and internships run by the firm.

While drop-outs may be negative in that the firm loses their investment in an apprentice; the firms reported benefiting from knowing that the apprentices that do complete the process and qualify as artisans have an interest in the sector and the industry and can make contributions to the economy as a qualified individual which has stand-alone value in itself.

**Skills Development:** Central to the issue of the return to enterprises from apprenticeships is the question of apprentice skill levels. The only differences that were found between artisans that are recruited from outside a firm and those that were recruited from amongst a firm’s apprentices are related to firm-specific elements of the job, such as working on highly specialised machinery and making niche products. Interviewees indicated that this gap quickly closed through on-the-job learning. This indicates at least some uniformity across the different apprenticeship programmes within an industry driven by the competencies required for a trade test. The willingness to learn and apply oneself was cited as being more responsible for variations in job performance than whether an artisan was recruited internally or externally. The survey elicited ambiguous results around the productivity of apprentices in comparison to other artisans; however, as expected there is an initial onboarding phase, with ~46% of firms reporting that they find apprentices to be less productive than other employees after six months of joining. This decreases by the 12<sup>th</sup> month, with only ~29% of firms continuing to report this disparity. These findings are illustrated in Figure 9:

**Figure 9: Productivity of apprentices’ vs skilled employees (survey: n = 24)**



One of the focus areas of the interviews conducted looked at the extent to which apprentices bring new innovations to the firm. There was no evidence from the interviews that apprentices make unique contributions to the firm or their work compared with other employees. This finding is supported by the survey results presented in

Figure 8, which show that firms ranked “Contributing new ideas and new thinking to companies” in the lower half of benefits. This may be indicative of the very routine and highly specific work that the firms contacted in this study specialise in and the limited scope for individual creativity that both apprentices and artisans have as a result. It may also reflect low quality off the job training.

The survey finds that firms appreciate the contributions of apprentices and are positive; however, it also finds that it is less the case that apprentices immediately bring new ideas or perform important tasks within the

firm. While the survey results showed that apprentices made positive contributions to the firm, the interviewed stakeholders did not elaborate on whether this contribution was any different to that made by other staff members. Rather, the contribution is important in a sense that it is of equal importance to that made by artisans.

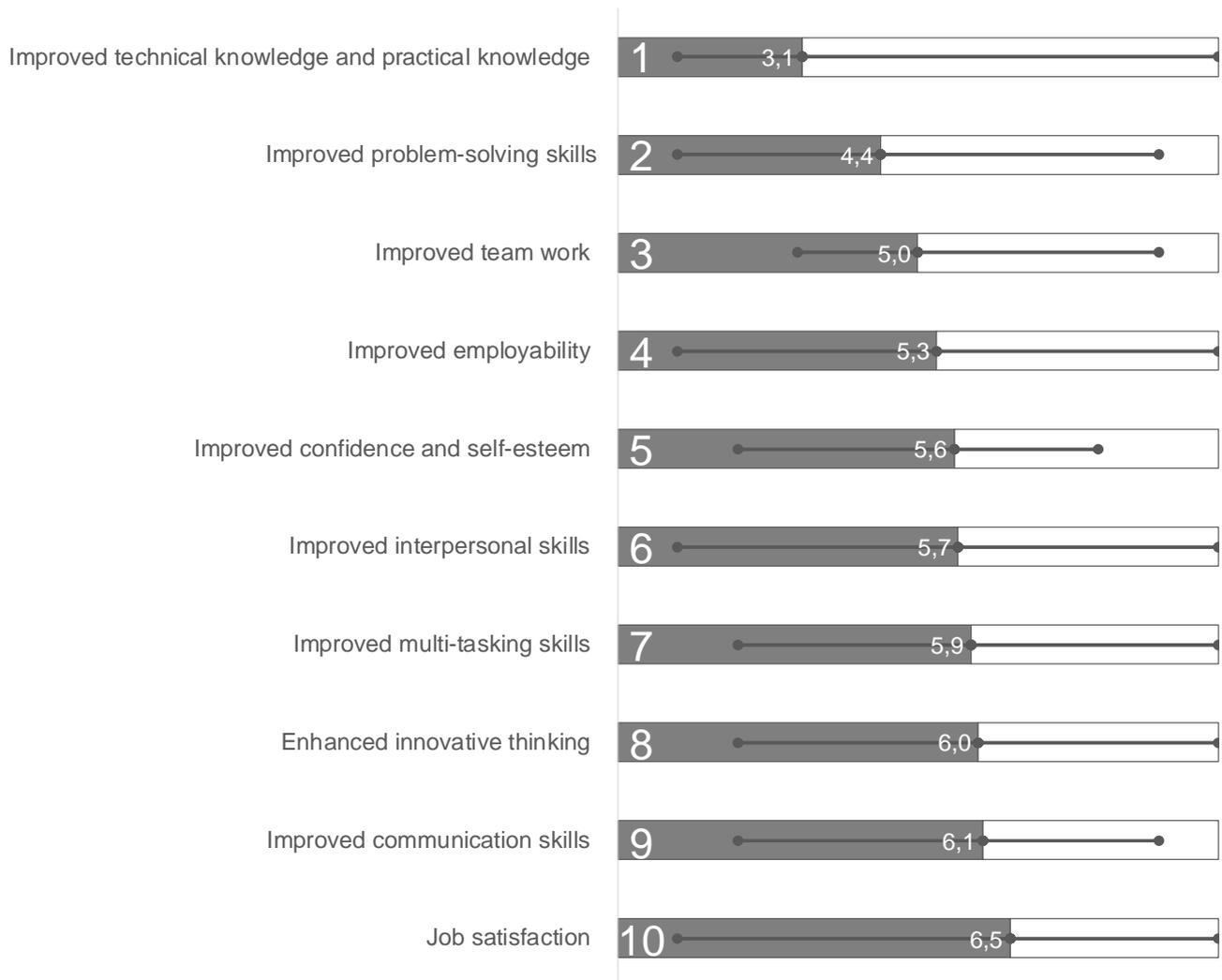
### **Higher human capital**

Apprentices are found to provide value to the firm as an additional source of labour. . This was ranked in the top two most important benefits to the firm in the survey. During the interviews, apprentices were cited as being able to provide and do quality work at a more affordable rate. Their exposure to the inner workings of a firm typically indicates that they are able to diagnose internal issues quicker. This is the primary difference between workers who enter a firm through the apprenticeship programme compared to those who do not. Skilled apprentices with knowledge are reported as an asset to the firm and are able to transfer skills and mentor others. Training which includes the latest developments in the sector, such as technological advancements, also provides value as the firm can benefit from an apprentice and their knowledge. All of these benefits are described as contributing to the long-term sustainable goals of a firm.

### **3.3. Benefits for the individuals**

As part of this study, we also investigate the benefits accruing to the apprentices. The survey asked respondents to rank the key benefits to the apprentices based on their experience. We find that an improved technical and practical knowledge was ranked as the greatest benefit, followed by improved problem-solving skills (as shown in Figure 10). Job satisfaction and greater soft skills, such as communication, innovative thinking and multi-tasking were ranked the lowest. Again, the lower scores reflect the more important benefits.

Figure 10: Average ranking score of benefits to apprentices (survey: n = 17)



Drawing on the interviews conducted, the key benefits to apprentices that were identified related to mentorship and coaching, feedback and personal development. The research also probed for whether apprentices experienced problems that other employees did not experience. There was no evidence found in support of this. This may be driven by the fact that many of the survey respondents and interviewees kept arms-length relationships with apprentices and would not have information about challenges that are not directly related to their on-the-job training and performance. Therefore, it may change in larger and more diverse sample.

### Mentorship and coaching

Coaching and mentorship are important elements of apprenticeship training in formal and informal apprenticeships. Most apprenticeship programmes use qualified artisans as coaches, which enables the apprentice to learn from someone with experience and for the transfer of knowledge and skills to take place involving people who have themselves been apprentices. This explains how the ranking of the survey found the gaining of technical skills to be the greatest benefit accruing to apprentices. However, the interviews illuminated some challenges in this report; artisans are described as being reluctant to share what they know with apprentices believing that their knowledge is theirs alone or believing that the apprentice may take their job once they have gained enough knowledge and experience. One interview said that their company dealt with this challenge by including mentorship and coaching in the job descriptions of the artisans. Another challenge for companies relates to the changing demographics of the sector. An additional challenge found

was that as more women become apprentices, men are cited as reluctant to act as coaches to them. This reflects discriminatory behaviour related to the idea that apprenticeships are “work for men”. Interviewees said that one way to enforce the mentorship role is to make mentoring a formal job requirement for artisans by putting it into their job descriptions, contracts or as part of their performance reviews. However, the risk of this approach is that apprentices will get routine and impersonal mentorship.

### **Feedback**

The extent to which apprentices receive formal feedback varies according to the structure of the apprenticeship programme. In formal apprenticeships that are aligned with the relevant regulations, interviewees cited that there is regular evaluation and feedback in a structured manner from the line manager or supervisor as the purpose of formal feedback is to provide a portfolio of evidence that is required by qualification authorities. Managers interviewed stated that compliance in this respect was less strenuous for apprenticeships than learnerships. It is unclear whether development plans are made or altered based on this feedback. However, most of the feedback given to apprentices is described as informal and given as issues emerge and is not limited to technical feedback.

### **Personal development**

The apprentices interviewed for this research appreciated the holistic guidance that mentors gave them beyond the technical requirements of the job. Similarly, managers also stated that the personal development of an apprentice is a crucial component of their technical and professional development. Interpersonal competencies such as teamwork, communication and personal competencies such as time management, problem-solving, and communication are conveyed as integral parts of an apprentice's ability to perform their duties and add value to the firm. Both managers and apprentices interviewed noted that there is a noticeable difference in these soft-skills between when an apprentice enters the apprenticeship and completes it. It must be noted that the development of soft skills is not actively monitored by firms nor do firms have separate programmes aimed at developing them in apprenticeships. Rather, they are viewed as a natural part of increased exposure to a formal work environment. However, as noted in the survey findings, the development of soft skills does not appear to be highly ranked benefit resulting from apprenticeships, which suggests that the quality of both on- and off-the-job training fails to address these skill needs.

## **3.4. Benefits to society**

Although the research did not specifically explore the issue, there are several benefits that accrue to society when companies offer apprenticeships. South Africa has an unemployment rate of 27% and a youth unemployment rate of 38,2%. Therefore, the most important social benefit of apprenticeship training is increasing the employability of young people. Successful completion of apprenticeship programmes also opens up more progressive opportunities for the contribution of apprentices to the economic sector. However, the unemployment rate among those with technical qualifications is 17%.<sup>88</sup> This is broadly aligned to research undertaken in developed countries has shown that apprenticeships lead to positive employment outcomes. On average 60 – 70 % of apprentices in Europe are able to secure formal employment at the end of an apprenticeship.<sup>89</sup> In Brazil, a middle-income country like South Africa, an impact assessment of the Apprentice Act found that former apprentices are more likely to find “non-temporary formal job” with higher

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<sup>88</sup> (Africa Check, 2018)

<sup>89</sup> (ILO, 2018)

wages than those who have not been apprentices.<sup>90</sup> The findings of this study provide some early evidence that apprenticeships have the similar effects on labour market outcomes in South Africa as they do in other parts of the world. However, more research is required to confirm this.

Labour demand in South Africa favours skilled workers and there are limited opportunities for low-skilled workers to make a decent living.<sup>91</sup> For this reason, apprenticeships are identified as being an important way of training young people for the workforce. It is found that by being able to earn a living while studying, apprenticeships are particularly beneficial to people who, for reasons such as family obligations, cannot afford to forgo income to study.

### 3.5. A note about costs

The cost of an apprenticeship differs according to how it is structured and by the remuneration and benefit structures of firms and incentives. In general, remuneration is the biggest cost driver in apprenticeship programmes followed by the costs of training. Among the companies interviewed, there were cases of firms paying for additional benefits for the apprentices, such as transport and on-site medical assistance. There are additional costs linked to the time taken by qualified artisans to supervise the work done by apprentices. The training grants offered by the SETAs are viewed to be insufficient to cover the cost of training by the firms that receive them. Therefore, financial incentives are not found to be a major factor influencing firms' decisions to offer apprenticeships. Among the firms that do receive training grants, there is a strong feeling that they would be able to offer more placements to apprentices if they had more funding to do so. In their opinion, an ideal funding model should cover the cost of the training as well as the remuneration. Firms are also reluctant to deal with the SETAs because they perceive their processes to be cumbersome and opaque.

Simplified and low-risk recruitment for permanent staff is the primary non-market benefit that firms derive from offering apprenticeships. Firms stated that they are willing to take on an initial financial loss for the initial period of an apprenticeship in the hopes of recuperating that cost as the apprentice becomes more productive over time and eventually becomes an artisan. In the absence of direct financial incentives from training grants, this is the primary lens through which firms view apprenticeships. Therefore, it is unlikely that they would offer them if the productivity outcome increases did not compensate them for the costs of training. The productivity of an apprentice is also influenced by the quality of the apprenticeship. The ILO defines a quality apprenticeship as “systematic long-term training for a recognised occupation taking place substantially within an undertaking or under an independent craftsman should be governed by a written contract of apprenticeship and be subject to established standards”.<sup>92</sup> In our sample, the larger and more established firms offered apprenticeships in line with this definition and cited the importance of long-term engagements with apprentices as being important for capturing productivity gains that apprentices offer. Therefore, offering short-term informal apprentices, which contributes to churning in the labour force, may have a negative effect on the overall productivity of the enterprise and therefore the benefits, both financial and non-financial, to enterprises.

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<sup>90</sup> (ILO, 2018)

<sup>91</sup> (Cassim & Oosthuizen, 2014)

<sup>92</sup> ILO (2017)

## 4. Conclusion

Comparing the findings from this research to the initially identified benefits of apprenticeships (Section 1.3), Table 8 shows that there was strong evidence of improved staff retention as a key benefit of apprenticeships to firms. In addition to that, and not explicitly identified at the commencement of this research, was that apprenticeships provide a future talent pipeline of skilled staff and that apprenticeships contribute to improved BBBEE scores for firms. This was also found to be the case in the impact study of apprenticeships and learnerships accredited by merSETA. In that study, over 80% of apprentices passed the trade test and qualified as apprentices.<sup>93</sup> Related to the talent pipeline, apprenticeship programmes are seen as a way to reduce the risk associated with employing new staff. This finding is in line with global literature, which underpins the role of apprenticeships in the recruitment process. Previous studies conducted in South Africa also find that the employment motivation for apprenticeships are more important than subsidies. However, in contrast to the work by Hauschildt, this paper does not find that there are differences in benefits by company size and sector; occupation under training; duration of training; quality of training; incentives and subsidies; and the institutional framework. This may be driven by the small sample consulted for this study. There was some evidence of firms seeing an improved public image as a key benefit, but little or no evidence was found of an improved work climate and improved innovation as key benefits of apprenticeships.

From the perspective of benefits to apprentices, there was strong evidence of improved technical knowledge, improved professional experience and improved employability as key benefits. An additional benefit that was identified through the research was that of access to coaches and mentors which benefit apprentices not only in their current jobs but in their careers more generally. The research found some evidence of improved problem solving, interpersonal skills, communication and teamwork as benefits to apprentices; and little or no evidence of improved flexibility, creativity, well-being, self-confidence or life satisfaction as benefits of apprenticeships. While this study did not explicitly consider the effect of apprenticeships on the transition from school to work, there is compelling international evidence that notes that young people countries with strong apprenticeship systems are more successful at transitioning into the labour market. Apprentices also derive financial benefit through being able to learn without sacrificing and income.

**Table 8: Strength of findings of identified benefits**

Benefits	Extent to which this benefit applies to the South African context
<b>Benefits to the firms</b>	
Improved staff retention – lower staff turnover and absenteeism	● Strong evidence of benefit
<i>Newly identified benefit:</i> Pipeline for new staff	● Strong evidence of benefit
<i>Newly identified benefit:</i> Contribution to BBBEE	● Strong evidence of benefit
Improved public image and reputation, recognition of firm’s contribution to social good and fulfilment of corporate social responsibility (CSR)	◐ Medium evidence of benefit
Improved work climate and boost to productivity (through, for example, improved job satisfaction, team spirit, training culture, commitment to work and staff morale)	○ Weak evidence of benefit
Improved innovation and improvement in work process that apprentices may bring about	○ Weak evidence of benefit

<sup>93</sup> (Mukora, et al., 2008)

Benefits	Extent to which this benefit applies to the South African context
<b>Benefits to apprentices</b>	
Improved technical knowledge required for the occupation	● Strong evidence of benefit
Improved professional experience, practice skills for the occupation	● Strong evidence of benefit
Improved employability	● Strong evidence of benefit
<i>Newly identified benefit:</i> Access to mentorship and coaching	● Strong evidence of benefit
Improved problem solving	◐ Medium evidence of benefit
Improved interpersonal skills	◐ Medium evidence of benefit
Improved teamwork	◐ Medium evidence of benefit
Improved effective communication skills	◐ Medium evidence of benefit
Improved flexibility / adaptability	○ Weak evidence of benefit
Improved creativity	○ Weak evidence of benefit
Improved well-being, physical and mental health	○ Weak evidence of benefit
Improved self-confidence / self-esteem	○ Weak evidence of benefit
Improved life satisfaction	○ Weak evidence of benefit

Overall, the key benefits of apprenticeships in general are aligned to the gaps policy makers hope they address – skills development and providing young people with access to the job market. Apprenticeships provide apprentices with the key skills and on-the-job training required to become artisans. This, in turn, benefits firms in that it gives them a pipeline of skilled staff that they might not otherwise have. While firms receive incentives for their participation in the apprenticeship scheme, this was not seen as a key benefit because the costs of the programme were believed in general to outweigh the incentives and subsidies. From an employment perspective, apprentices are more likely to be formally employed once they have completed their programme, than their peers that have completed learnerships and internships.

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# Appendix 1: Research tools

## Interview guides

### Senior management

#### Introductory questions

1. Please introduce yourself and your role within your company.
2. What influenced the company's decision to begin offering apprenticeships?
3. Why do you continue to offer apprenticeships?
4. Does the company receive any kind of financial or non-financial support to assist with the delivery of the apprenticeship program (e.g. funding)?

#### Advantages / non-marketable benefits

5. What are the advantages of apprenticeship programmes in your company? (*Probes (only use if they do not answer): benefits to colleagues and the training enterprise<sup>94</sup>*)
6. What are the advantages of apprenticeship programmes to apprentices? (*Probes: list of benefits to apprentices<sup>95</sup>*)
7. What is the likelihood of an apprentice becoming a permanent staff member?
8. To what extent do you use the apprenticeship programme as a means of addressing long-term staffing needs in your company i.e.: Is it part of your long-term HR strategy or more of a short-term staffing solution?
9. What determines whether an apprentice is a suitable candidate for permanent employment once their apprenticeship is over?
10. How have apprentices adopted the company's culture and have there been any challenges in this regard?
  - o How has the company addressed these challenges?
11. Do apprentices make any unique contributions to the company that other staff members do not? Please elaborate.

#### Challenges

12. What kind of additional support do apprentices need that other staff members may not need?
  - o How does the company provide this support?
13. In your view, do the benefits of the apprenticeship programme outweigh the costs?
14. What challenges has the company faced with the apprenticeship programme?

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<sup>94</sup> Improved work climate and boost to productivity, staff retention, enhanced job satisfaction, improved public image and reputation, introduction of new technical knowledge, and innovation and improvement in work process.

<sup>95</sup> Technical knowledge required for the occupation, personal experience, practice skills for occupation, flexibility / adaptability, effective communication skills, problem solving, creativity, interpersonal skills, teamwork, well-being, physical and mental health, self-confidence / self-esteem, life satisfaction, and employability in general.

- How have these challenges been addressed?

15. How might the company get more benefit from their apprentices?

### ***Line management / supervisors***

#### **Introductory questions**

1. Please introduce yourself and explain your role in the implementation of the apprenticeship programmes?
2. Can you describe the apprenticeship programme that your company offers?

#### **Advantages / non-marketable benefits**

3. From a line manager's perspective, what are the benefits your company has experienced as a result of the apprenticeship programmes? (*Probes: list of benefits to enterprises<sup>96</sup>*)
4. What are the advantages of apprenticeship programmes to apprentices? (*Probes: list of benefits to apprentices<sup>97</sup>*)
5. What is the likelihood of an apprentice becoming a permanent staff member?
  - What determines whether an apprentice is a suitable candidate for permanent employment once their apprenticeship is over?
6. Is there a difference in the career progression of people who entered the firm as apprentices compared to those who did not?
  - What determines this difference between the two groups of employees?
7. In your experience, what is the likelihood of an apprentice remaining in the firm once they become permanent as compared to other permanent employees?
  - What is the likelihood of an apprentice getting dismissed once they become permanent as compared to other permanent employees?
8. How have apprentices adopted the company's culture and have there been any challenges in this regard?
  - How has the company addressed these challenges?
9. Do apprentices make any unique contributions to the company that other staff members do not? Please elaborate.

#### **Challenges**

10. What kind of additional support do apprentices need that other staff members may not need?

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<sup>96</sup> Improved work climate and boost to productivity, staff retention, enhanced job satisfaction, improved public image and reputation, introduction of new technical knowledge, and innovation and improvement in work process.

<sup>97</sup> Technical knowledge required for the occupation, personal experience, practice skills for occupation, flexibility / adaptability, effective communication skills, problem solving, creativity, interpersonal skills, teamwork, well-being, physical and mental health, self-confidence / self-esteem, life satisfaction, and employability in general.

- How does the company provide this support?
11. What responsibilities do other senior and junior staff members have in the apprenticeship program and how willing are they to take part in it?
  12. In your view, do the benefits of the apprenticeship programme outweigh the costs?
  13. What challenges has the company faced with the apprenticeship programme and how have these challenges been addressed?
  14. How might the company get more benefit from their apprentices?

### ***Human resources / training department***

#### **Introductory questions**

1. Please introduce yourself and explain your role in the implementation of the apprenticeship programmes?
2. Can you describe the apprenticeship programme that the company offers?
3. What role does the HR department play in the apprenticeship programme?
  - To what extent do subsidies or other incentives influence the company's decision to offer apprenticeships?
4. As HR, what do you need to consider before an apprenticeship programme is implemented?

#### **Advantages / non-marketable benefits**

5. From HR's perspective, what are the benefits<sup>98</sup> your company has experienced as a result of the apprenticeship programmes?
6. What are the advantages of apprenticeship programmes to apprentices? (*Probes: list of benefits to apprentices<sup>99</sup>*)
7. In your experience, why do people drop-out of the apprenticeship programme?
8. What is the likelihood of an apprentice becoming a permanent staff member? What determines whether an apprentice is a suitable candidate for permanent employment once their apprenticeship is over?
9. What is the likelihood of an apprentice remaining in the firm once they become permanent as compared to other permanent employees?
10. Is there a difference in the career progression of people who entered the firm as apprentices compared to those who did not?
  - What determines this difference between the two groups of employees?
11. What feedback do you get from line managers on the quality of the work done by apprentices as well as their dedication and how does this compare to other staff members?

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<sup>98</sup> Improved work climate and boost to productivity, staff retention, enhanced job satisfaction, improved public image and reputation, introduction of new technical knowledge, and innovation and improvement in work process.

<sup>99</sup> Technical knowledge required for the occupation, personal experience, practice skills for occupation, flexibility / adaptability, effective communication skills, problem solving, creativity, interpersonal skills, teamwork, well-being, physical and mental health, self-confidence / self-esteem, life satisfaction, and employability in general.

## Challenges

12. What kind of additional support do apprentices need that other staff members may not need?
  - How does the company provide this support?
13. What is the role of senior and junior staff members in the apprenticeship program and how willing are they to take part in it?
14. What challenges has the company faced with the apprenticeship programme?
  - How have these challenges been addressed?
15. In your view, do the benefits of the apprenticeship programme outweigh the costs?
16. How does the company monitor the performance and progress of the apprentices?
  - How does the company use this information?
15. How might the company get more benefit from their apprentices?

## Apprentices

### Introductory questions

1. How long is your apprenticeship at this company?
2. What motivated you to apply for this apprenticeship?
3. What are your responsibilities in the company?
4. How is the apprenticeship programme structured?

### Advantages / non-marketable benefits

5. How does your participation in the apprenticeship benefit<sup>100</sup> you?
6. If you did not enter this apprenticeship, what were your employment alternatives?
7. What do you think the benefits<sup>101</sup> to the company are, from offering apprenticeships?
8. What is the likelihood of you completing your apprenticeship at this company?
  - What are the factors that determine whether an apprentice successfully completes the apprenticeship?

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<sup>100</sup> Non-market benefits? Benefits to colleagues and the training enterprise: Improved work climate and boost to productivity, staff retention, improved public image and reputation, and innovation and improvement in work process. Benefits to apprentices: Technical knowledge required for the occupation, personal experience, practice skills for occupation, flexibility / adaptability, effective communication skills, problem solving, creativity, interpersonal skills, teamwork, well-being, physical and mental health, self-confidence / self-esteem, life satisfaction, and employability in general.

<sup>101</sup> Non-market benefits? Benefits to colleagues and the training enterprise: Improved work climate and boost to productivity, staff retention, improved public image and reputation, and innovation and improvement in work process. Benefits to apprentices: Technical knowledge required for the occupation, personal experience, practice skills for occupation, flexibility / adaptability, effective communication skills, problem solving, creativity, interpersonal skills, teamwork, well-being, physical and mental health, self-confidence / self-esteem, life satisfaction, and employability in general.

9. What is the likelihood of you wanting to become a permanent staff member after the apprenticeship ends?
  - What factors would you consider when deciding whether to become a permanent employee after the apprenticeship ends?
10. What is your feedback on the content and experience gained through the apprenticeship programme?
11. What feedback do you get from line managers on the quality of your work?

### Challenges and costs

12. What kind of support do you require to cope with the demands of the programme?
13. What other challenges do you face during the apprenticeship?
  - How do you think this could impact on the company?
14. Do you know how the company monitors the performance and progress of the apprentices?
15. How might the company get more benefit from their apprentices?

### Apprentices' co-workers

#### Introductory questions

1. How long have you been working alongside an apprentice at this company?
2. Do you have any responsibilities relating to the apprentices you work with?

#### Advantages / non-marketable benefits

3. From HR's perspective, what are the benefits<sup>102</sup> your company has experienced as a result of the apprenticeship programmes?
4. What are the advantages of apprenticeship programmes to apprentices? (*Probes: list of benefits to apprentices*<sup>103</sup>)
5. What do you think are the factors that influence whether or not an apprentice completes the full program?
6. In your experience, why do people drop-out of the apprenticeship programme?
7. What is the likelihood of an apprentice becoming a permanent staff member?
  - What do you think determines whether an apprentice is a suitable candidate for permanent employment once their apprenticeship is over?
8. Is there a difference in the career progression of people who entered the firm as apprentices compared to those who did not?

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<sup>102</sup> Improved work climate and boost to productivity, staff retention, enhanced job satisfaction, improved public image and reputation, introduction of new technical knowledge, and innovation and improvement in work process.

<sup>103</sup> Technical knowledge required for the occupation, personal experience, practice skills for occupation, flexibility / adaptability, effective communication skills, problem solving, creativity, interpersonal skills, teamwork, well-being, physical and mental health, self-confidence / self-esteem, life satisfaction, and employability in general.

- What determines this difference between the two groups of employees?

## Costs

9. What kind of additional support do apprentices require that you need to provide them with?
10. What challenges have you faced in working with the apprentices?
  - How have these challenges been addressed?
11. Do you know how the company monitors the performance and progress of the apprentices?
  - Do you have a role in this process?
  - Do you know how the company use this information?
12. Is there anything else about apprentices or apprenticeships you would like to talk about?

## Survey

**Non-Marketable Benefits and Productivity:** While non-market benefits cannot easily be quantified, the survey will preliminarily assess their relation with productivity and the performance of the enterprise. The survey is one of the proposed tools for the study. In addition to the survey, key informant interviews will be conducted with key stakeholder groups.

**Objectives of the Survey:** The survey intends to assess non-market benefits of apprenticeship training and how they are related to the productivity of the enterprise. We have selected, based on existing literature, key benefits and will empirically test them through the survey. To the extent possible, the survey also intends to gain insight into the linkages between non-market benefits of apprenticeship training and the performance of the training enterprise. Finally, the survey will also look at the benefits of apprenticeships for apprentices and their colleagues. Surveys will be sent the human resources departments of the identified enterprises (*Section 3.1.*). The survey will be administered through SurveyGizmo.

## Introductory questions

1. Which industry sector does your company work in?

- |                          |                       |                          |                     |                          |  |
|--------------------------|-----------------------|--------------------------|---------------------|--------------------------|--|
| <input type="checkbox"/> | Metal and engineering | <input type="checkbox"/> | Auto manufacturing  | <input type="checkbox"/> | Motor retail and component manufacturing |
| <input type="checkbox"/> | Tyre manufacturing    | <input type="checkbox"/> | Plastics industries | <input type="checkbox"/> | Other (please specify)                   |

2. How many people are employed in your company?

Answer to be entered into textbox

3. Taking the average of the past 3 years, how many new apprentices did your company take per year?

Answer to be entered into textbox

4. What is the duration of your company's apprenticeship programme?

- |                          |                   |                          |             |                          |             |
|--------------------------|-------------------|--------------------------|-------------|--------------------------|-------------|
| <input type="checkbox"/> | Less than 1 year  | <input type="checkbox"/> | 1 – 2 years | <input type="checkbox"/> | 2 – 3 years |
| <input type="checkbox"/> | More than 3 years |                          |             |                          |             |

5. How long has your company been offering apprenticeship programmes?

- Less than 5 years       5 – 10 years       More than 10 years

6. In your view, how does the cost of training an apprentice compare to the benefit of having an apprentice?

- The costs of having an apprentice exceed the benefits       The costs of having an apprentice are equal to the benefits       The benefits of having an apprentice exceed the costs

7. On average what percentage of apprentices who enter the apprenticeship programme complete it on time?

- 0% - 10%       10% - 50%       50% - 75%  
 75% - 100%

8. On average, what is the productivity level of apprentices compared to skilled employees 6 months after starting the apprenticeship training?

- Apprentices are less productive than skilled employees       Apprentices are equally as productive as skilled employees       Apprentices are more productive than skilled employees

9. On average, what is the productivity level of apprentices compared to skilled employees 12 months after starting the apprenticeship training?

- Apprentices are less productive than skilled employees       Apprentices are equally as productive as skilled employees       Apprentices are more productive than skilled employees

10. On average what percentage of apprentices are offered employment in your company after completing the training?

- 0% - 10%       10% - 50%       50% - 75%  
 75% - 100%

11. To what extent do you agree with the following statements?

- An apprentice's contribution to our company is valuable       Strongly Disagree       Disagree       Agree       Strongly Agree  
Our company's contribution to apprentices is valuable       Strongly Disagree       Disagree       Agree       Strongly Agree

I believe our apprentices are well-integrated into our company	<input type="checkbox"/>	Strongly Disagree	<input type="checkbox"/>	Disagree	<input type="checkbox"/>	Agree	<input type="checkbox"/>	Strongly Agree
Our apprentices perform important tasks for the company	<input type="checkbox"/>	Strongly Disagree	<input type="checkbox"/>	Disagree	<input type="checkbox"/>	Agree	<input type="checkbox"/>	Strongly Agree
Apprentices are free to apply their own skills and insights when completing their tasks	<input type="checkbox"/>	Strongly Disagree	<input type="checkbox"/>	Disagree	<input type="checkbox"/>	Agree	<input type="checkbox"/>	Strongly Agree

### Benefits to colleagues and the training enterprise

12. Please rank from 1 – 8 (from most beneficial to least beneficial) the following benefits of your apprenticeship programme to your staff and company:

<input type="checkbox"/>	Improved team morale	<input type="checkbox"/>	Improved learning culture	<input type="checkbox"/>	Improved commitment to work
<input type="checkbox"/>	Reduced staff turnover	<input type="checkbox"/>	Apprenticeships give the company access to talented future employees	<input type="checkbox"/>	The apprenticeship programme improves the company's public image
<input type="checkbox"/>	Apprentices contributing new ideas and new thinking to the company	<input type="checkbox"/>	Improved productivity		

### Benefits to apprentices: Soft / hard skills development and improved employability

13. Please rank from 1 – 10 (most beneficial to least beneficial) the following benefits of your apprenticeship programme to apprentices:

<input type="checkbox"/>	Improved technical and practical knowledge	<input type="checkbox"/>	Improved multi-tasking skills	<input type="checkbox"/>	Improved communication skills
<input type="checkbox"/>	Improved problem-solving skills	<input type="checkbox"/>	Enhanced innovative thinking	<input type="checkbox"/>	Improved interpersonal skills
<input type="checkbox"/>	Improved team work	<input type="checkbox"/>	Improved confidence and self esteem	<input type="checkbox"/>	Job satisfaction
<input type="checkbox"/>	Improved employability				

## Appendix 2: List of trades that require an artisan qualification

1. Chef	2. Hairdresser	3. Bricklayer	4. Stonemason
5. Refractory mason	6. Carpenter and joiner	7. Carpenter	8. Wall and floor tiler
9. Plasterer	10. Glazier	11. Plumber	12. Gas practitioner
13. Pipe fitter	14. Air-conditioning and refrigeration mechanic	15. Painter	16. Vehicle painter
17. Moulder	18. Welder	19. Sheet metal worker	20. Boiler maker
21. Metal fabricator	22. Structural plater	23. Rigger	24. Blacksmith
25. Toolmaker	26. Gunsmith	27. Locksmith	28. Patternmaker
29. Die sinker	30. Metal mechanist	31. Fitter and turner	32. Saw maker and repairer
33. Automotive motor mechanic	34. Motorcycle mechanic	35. Automotive engine mechanic	36. Aircraft maintenance mechanic
37. Aircraft structures worker	38. Industrial machinery mechanic	39. Mechanical fitter	40. Diesel fitter
41. Small engine mechanic	42. Diesel mechanic	43. Heavy equipment mechanic	44. Tractor mechanic
45. Forklift mechanic	46. Precision instrument maker and repairer	47. Watch and clock maker repairer	48. Scale fitter
49. Musical instrument maker or repairer	50. Goldsmith	51. Diamond and gemstone setter	52. Glass maker
53. Optical mechanic	54. Sign writer	55. Engraver	56. Pre-press technical worker
57. Electronic originator	58. Gravure cylinder preparation technician	59. Process engraver	60. Printing machinist
61. Screen printer	62. Paper sheetfed offset lithography technician	63. Metal sheetfed offset lithography technician	64. Monoblock offset machine technician
65. Roll label machine technician	66. Heatset rotary offset lithography technician	67. Coldset rotary offset lithography technician	68. Rotary printing and re-reeling flexographic machine technician
69. Rotary printing and re-reeling gravure machine technician	70. Stationery machine technician	71. Binder and finisher	72. Craft bookbinding technician
73. Mechanised hard cover bookbinding technician	74. Mechanised hard cover bookbinding technician	75. Guillotine operator	76. Electrician
77. Millwright	78. Mechatronics technician	79. Lift mechanic	80. Weapon systems mechanic
81. Electrical equipment mechanic	82. Armature winder	83. Transportation electrician	84. Electrical line mechanic
85. Cable joiner	86. Avionics mechanic	87. Radar mechanic	88. Business machine mechanic
89. Electronic equipment mechanic	90. Instrument mechanic	91. Instrument mechanic	92. Special class electrician
93. Radiotrician	94. Data and telecommunications cabler	95. Computer engineering mechanic / serviceperson	96. Telecommunications line mechanic
97. Telecommunications technician	98. Butcher	99. Confectionary baker	100. Pastry cook

101. Confectionary maker	102. Cabinetmaker	103. Wood machinist	104. Wood turner
105. Cooper	106. Tailor	107. Upholsterer	108. Textile, clothing, footwear and leather processing machine mechanic
109. Farrier	110. Panel beater	111. Vehicle body builder	112. Vehicle trimmer
113. Boatbuilder and repairer	114. Shipwright	115. Survival equipment fitter	116. Ammunition fitter
117. Melter	118. Diamond cutter	119. Electroplater	120. Plastics manufacturing machine setter
121. Reinforced plastics and composite trades worker	122. Packaging manufacturing and machine minder	123. Integrated manufacturing line machine setter	124. Railway track master

Source: (South African Government Gazette, 2012)

