

An overview of skills and formal employment dynamics in 2003

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The macroeconomic impact of skilled workers manifests on both the supply and demand sides of the economy. Research reveals that since the 1970s the demand for higher skills levels has increased steadily. The opening of the South African economy during the early 1990s facilitated this trend. International employment and occupational structures across the world are being reshaped by, *inter alia*, the changing dynamics of international trade and information and communication technologies (ICT)¹. South Africa has not escaped this international trend, with new occupations being created while others experience a reorganisation of work such as outsourcing. The increase in skilled employment, especially with the high penetration of ICT occupations in the developed world, has resulted in improved efficiency, rising productivity and higher levels of output and growth, alongside low inflation and low unemployment in the 1990s².

A strong move towards a knowledge-based economy has transformed the demand for human resources. This transformation has influenced certain occupations and industrial sectors positively. In this regard, there has arisen a need for South Africa to follow a comprehensive skills development strategy that is appropriate for its production and industrial systems. Such a strategy should also increase medium and high-level skills and provide support to unskilled and elementary job creation initiatives.

What follows is an analysis of formal non-agricultural employment by occupation. The occupational dynamics in South Africa are analysed with the aim of stimulating more rigorous debate on factors that have an impact on skills development. The following sections give an overview of occupational and educational profiles of non-agricultural formal sector employment using the September 2003 *Labour Force Survey* (LFS). This is followed by an overview of different institutions designed to facilitate skills development. The article concludes by highlighting challenges for human capital development in South Africa.

Box 2 Definitional issues and data sources

The LFS classifies workers according to qualifications, specifically by level of education and field of study*. Most analyses of trends in employment combine one or more classifications, for example qualification and occupation, to identify the skills needed for different types of jobs. However, such approaches are not totally harmonised across countries and efforts continue to refine categorisation of workers. For the purpose of this article highest level of education is classified as follows:

- No schooling – none
- Some primary – Grade 0/Std 1 to Grade 7/Std 5
- Some secondary – Grade 8/Std 6 to Grade 11/Std 9
- High school or matric – Grade 12/Std 10
- Vocational – NTCl to NTClII; diploma/certificate with Grade 11/Std 9 or lower
- Some tertiary – Diploma/certificate with Grade 12/Std 10; degree and higher

The LFS classifies occupational categories in line with International Standard Classification of Occupations (ISCO) and South African Standard Classification of Occupations (SASCO) systems. SASCO defines an occupation as a set of jobs with similar sets of tasks. Occupations refer to the following major groups: (1) Legislators, senior officials and managers – “managers”; (2) Professionals; (3) Technicians and associate professionals – “technicians”; (4) Clerks, service workers and shop and market sales workers – “service workers”; (5) Skilled agricultural and fisheries workers; (6) Craft and related trades workers – “craft workers”; (7) Plant and machinery operators and assemblers – “operators”; and (8) Elementary occupations.

At present the definition of the subcategory *Legislators, senior officials and managers* includes workers who may lack tertiary-level education, which raises some methodological challenges.

For the purpose of this article, the following categories are excluded: Skilled agricultural and fisheries workers, domestic workers and other workers in “informal” activities**.

* This is LFS question 16a used to determine highest education level and 16b to gauge responses from workers by field of study. These questions are the major sources of information on the supply of workers by education level.

** The LFS for September 2003 determines occupations from responses to questions 4.1a and 4.1b.

1 Hlekiso, T. 2002. *The information economy: Prospects for deriving greater benefits for economic growth and development*. Labour Market Frontiers. October. Pretoria: South African Reserve Bank.

2 International Labour Organisation. 2001. *Life at work in the information economy*. World Employment Report. Geneva.

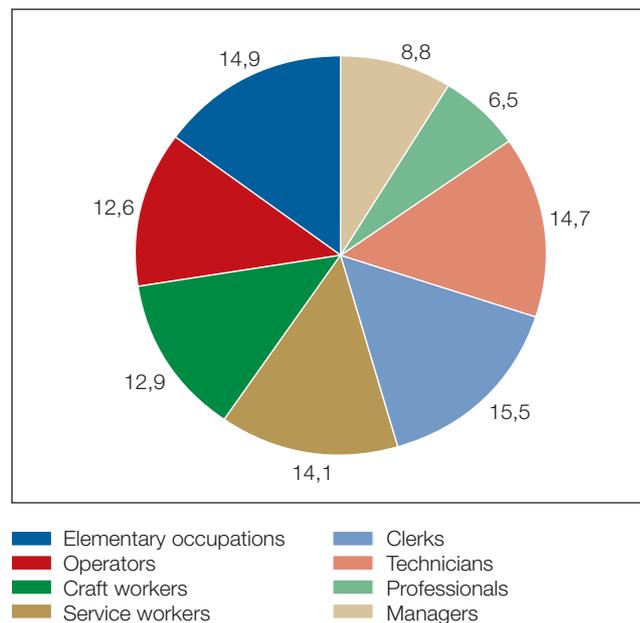
Formal non-agricultural employment by occupation

In most Organization for Economic Co-operation and Development (OECD) countries, professionals and technicians represent between 20 and 35 per cent of total employment³. According to the September 2003 LFS, professionals and technicians represent 21,2 per cent as a share of formal non-agricultural employment in South Africa.

Labour market analysis⁴ in South Africa has shown that the change in the structure of the economy has impacted on the composition of employment creation by reducing the demand for lower-end occupational categories such as elementary occupations, clerks and operators. Furthermore, Bhorat et al.⁵ argue that the professional occupational category experienced skills mismatches and a high concentration of tertiary educated workers in non-science and technical fields. In September 2003, clerical, elementary, and technician occupations were the largest components of formal non-agricultural employment (see Figure 2.1). Clerks were marginally higher with 15,5 per cent (approximately 1,15 million workers), followed by elementary occupations with 14,9 per cent (approximately 1,10 million workers) and technicians at 14,7 per cent (approximately 1,09 million workers). Professionals and managers constituted the smallest percentages, 6,5 per cent and 8,8 per cent, respectively.

Current research shows a complex relationship between employment and occupational demand in South Africa. Unlike in most OECD countries where upskilling focuses on science and technical skills, South Africa is faced with the need to upskill in a broader range of occupational categories⁶. In other words, the fact that skills shortages also occur in intermediate-skilled occupations such as craft workers means the country is faced with the need to raise skills levels across all occupations. For example, according to the Business Confidence Index of the Bureau for Economic Research and Rand Merchant Bank, 89 per cent of the building contractors that were surveyed indicated a shortage of labour in technician and craftworker-type jobs such as artisans. Another study⁷ estimated the skills shortage to be about 20 000 across a range of industrial sectors of artisans such as electricians, welders, plumbers, and fitters and turners.

Figure 2.1 Formal employment by occupation as percentage of total, 2003



Source: Own calculations, *Labour Force Survey*, September 2003

Educational and occupational dimensions

South Africa's integration into the global economy has increasingly prioritised science and technology education. The move from labour-intensive to capital-intensive and knowledge-based production methods depends on technologically sophisticated systems and procedures. It is therefore essential for South Africa to develop its human capital to reduce unemployment and poverty. A key aspect in this regard is to identify and implement the type of education system that will meet the demand for specific skills.

The international approach in upskilling is more prominent in the supply of science and technology graduates and shows a bias towards women⁸. As a result, OECD countries have an average of 28,4 per cent employed workers with a tertiary level qualification⁹. In 2002 Canada had the highest percentage of employment of tertiary-level graduates with 42,6 per

3 OECD. 2004. *Science Innovation*. Science and Technology Statistical Compendium. Paris.

4 Fedderke, J.W. and M. Mariotti. 2002. *The changing market conditions in S.A.: A sectoral analysis of the period 1970 – 1997*. South African Journal of Economics, Vol. 70, No. 5, pp 831-865.

Bhorat, H., Lundall, P. and S.Rospabe. 2002. *The South African labour market in a globalizing world: Economic and legislative considerations*. Geneva: International Labour Organisation.

5 Bhorat, H. et al. 2005. *Labour Market challenges in the Post-Apartheid South Africa*. DPRU Working Paper 05/93.

6 Fryer D. and D.Vencatachellum. 2005. *Coordination Failure and Employment in South Africa*. DPRU Working Paper 04/86.

Woolard, I. Kneebone, P. and D. Lee. 2003. *Forecasting the demand for scarce skills, 2001 – 2006*. Human Resources Development Review 2003: Education, Employment, and Skills in South Africa. Cape Town: Human Sciences Research Council and East Lansing: Michigan State University Press. Authors use both February and September 2001 LFS data for their forecasts.

7 Kraak, A. 2003. *HRD and the skills crisis*. Human Resources Development Review 2003: Education, Employment, and Skills in South Africa. Cape Town: Human Sciences Research Council and East Lansing: Michigan State University Press. This SASOL study confirmed an earlier HSRC survey by Kraak et al. undertaken in 2000 that showed that the greatest shortage of skills and difficulty in recruiting were among technicians and craftworker-type jobs.

8 Cervantes, M. 1999. Background report: An analysis of S&T labour markets in OECD countries. OECD: Paris.

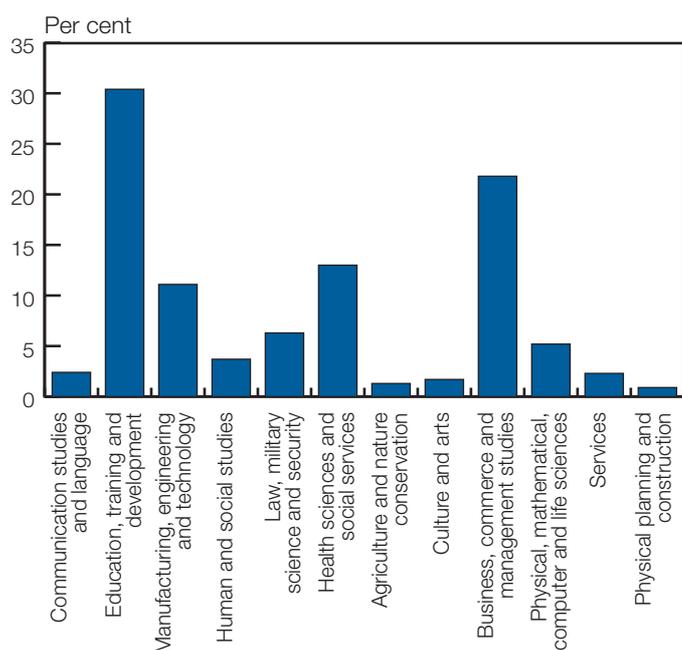
9 Organization of Economic Cooperation and Development. 2004. *Human Resources in Science and Technology*. Paris.

cent and Mexico the lowest with 7,9 per cent. According to the LFS, 21,8 per cent of workers in formal non-agricultural employment had some tertiary education in September 2003¹⁰.

The LFS also shows that workers with science and technical training remain scarce in formal non-agricultural employment. The percentage of tertiary workers trained in fields such as manufacturing, engineering and technology was 2,5 per cent (approximately 186 000 workers) while for physical, mathematical, computer and life sciences the percentage was 1,2 per cent (approximately 87 000 workers).

Formal employment is biased towards workers with non-science education (see Figure 2.2). Employees in the field of education and training comprise the largest share of those with some tertiary qualification at 30,4 per cent, followed by business, commerce and management studies with 21,8 per cent, and health sciences and social services at 13,0 per cent.

Figure 2.2 Formal non-agricultural employment by selected fields of study

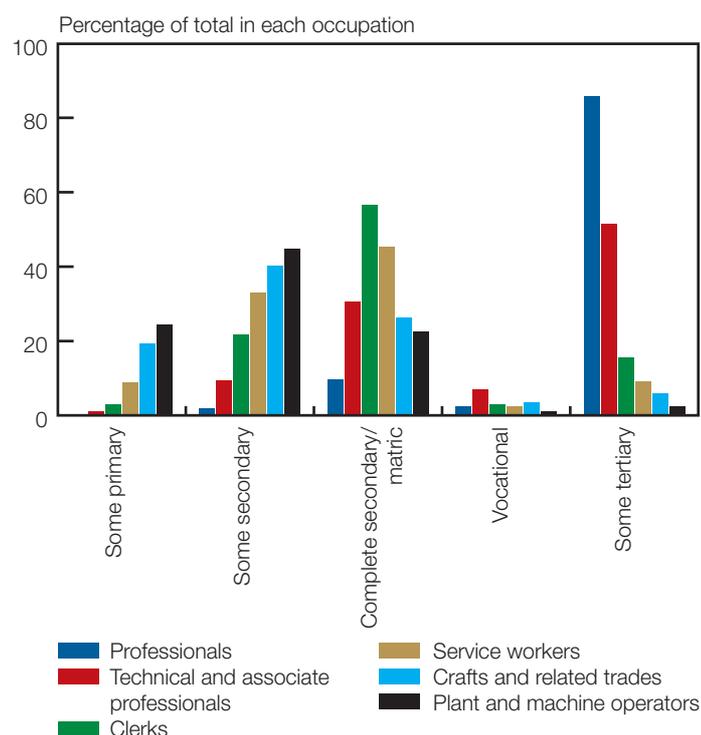


Source: Own calculations, *Labour Force Survey*, September 2003

Data from the LFS further show that qualification levels among clerks, service workers, craft workers and

operators were mainly in two categories, i.e. incomplete secondary education and completed secondary school or matric (see Figure 2.3). For example, 78,4 per cent of clerks had some secondary education or had completed their secondary schooling. There are also low levels of vocational training among employees, i.e. most occupations had between 1,0 per cent and 7,0 per cent of employees with vocational training in September 2003.

Figure 2.3 Education level of those engaged in selected occupations



Source: Own calculations, *Labour Force Survey*, September 2003

Despite the fact that there may be long periods associated with training and educating people in science and technology, Woolard et al.¹¹ indicate that South Africa is not necessarily different from other countries with forecasts showing that additional demand for highly-skilled workers (professionals, technicians and managers) will remain low until 2006, mainly because of capacity constraints in the economy. Furthermore, Kraak¹² argues that the shortage of highly skilled professionals in South Africa does not constitute a crisis. The greater labour

10 It should be noted that this comparison has limitations as it excludes those in informal activities and is lower when taken as a ratio of total employment.
 11 Woolard, I. Kneebone, P. and D. Lee. 2003. *Forecasting the demand for scarce skills, 2001 – 2006*. Human Resources Development Review 2003: Education, Employment, and Skills in South Africa. Cape Town: Human Sciences Research Council and East Lansing: Michigan State University Press. Authors use both February and September 2001 LFS data for their forecasts.
 12 Kraak, A. 2003. *HRD and the skills crisis*. Human Resources Development Review 2003: Education, Employment, and Skills in South Africa. Cape Town: Human Sciences Research Council and East Lansing: Michigan State University Press.

market challenge according to Kraak¹³ is the supply of middle-level skills, especially competent technicians, craft workers and operators.

South Africa needs an integrated approach to skills development where all stakeholders – primarily government, business and labour organisations – are major participants. The following section reviews the institutional framework for skills development in South Africa.

Institutions and development of human capital

Skills development and the movement towards the more productive and better paying occupations in South Africa's labour market depend on several institutional factors. Skills development institutions that can bring about such changes are business and trade unions, and the Sector Education and Training Authorities (SETA) system. In contrast to short-term solutions such as skills importation, a multi-dimensional approach to skills development that simultaneously includes the co-ordination of policies is recommended¹⁴.

Since 1994, the institutional framework for skills development and labour market policy in general have changed in South Africa. An example of a labour market policy change is the enactment of the Skills Development Act of 1998 (SDA). Among other priorities, the SDA attempts to strengthen the link between workplace education and training, economic growth and the creation of employment opportunities. The SDA has established a centralised funding mechanism, and sectoral level institutions known as SETAs are tasked to drive the development of occupational skills.

At the centre of the skills development strategy is the Skills Development Levies Act of 1998, which provides an enabling environment for higher levels of resource allocation by business towards skills development. This strategy encourages businesses to provide more opportunities for employees to acquire new skills, while it is simultaneously designed to have a positive impact on occupational mobility in the medium to long term. The SDA incorporates the National Skills Authority to advise the Minister of Labour on the formulation and implementation of a skills development policy and strategy. The Department of Labour is presently engaged in a process of restructuring SETAs in order to improve efficiency. Each SETA consists of relevant statutory and non-statutory organisations such as trade unions, business (including small and medium enterprises), relevant government departments, professional bodies and bargaining councils.

Bhorat et al.¹⁵ argue that while the SDA will work effectively for the occupational mobility of those already in employment, it could be difficult to apply the Act in addressing unskilled workers and reaching the unemployed. In other words, while enhancing the occupational and educational profile of those in employment does tend to impact positively on economic growth, occupational mobility in itself does not necessarily create sufficient job opportunities, thereby assisting the unemployed. A range of special employment programmes such as the Expanded Public Works Programme and industrial policy measures are being implemented to facilitate a co-ordinated policy framework to support economic growth, skills development and employment creation.

Skills development suggests transforming elementary occupations to artisan/clerical type occupations and highly skilled professional occupational categories. On the demand side, a desired trend is the increase in the number of jobs created at professional, technical, operator and clerical levels without a drastic decrease in jobs created in elementary occupations. Other measures include an increase in high school leavers trained in science and mathematics and an expansion of tertiary level graduates with not only science and technical degrees but the flexibility to participate in a knowledge-based economy. The challenge with unskilled elementary occupations could take time to remedy even with improved public and private worker-education partnerships. A strong case can be made for a "hybrid" system¹⁶ that generates demand across all sectors without disadvantaging semi-skilled and unskilled occupational categories. A "hybrid" system is best facilitated by a multifaceted institutional and policy environment where there is upskilling of the existing workforce and sectoral labour absorption at all occupational categories, including public-sector support to create jobs for those in the elementary occupations, all within a sustainable economic growth environment.

Conclusion

Consistent with other analyses, the LFS 2003 demonstrates that workers with some tertiary qualifications in formal employment are concentrated in the non-science and non-technical fields such as education, business, commerce and management studies. A large component of those in formal employment have either a high school or an incomplete secondary education, rather than vocational or industry-related job training, indicating persistence of historical supply-side problems. It is important for further research to focus on skills development institutions and policies and their linkages with skills supply, wages and economic growth.

¹³ *Ibid.*

¹⁴ Fryer, D. and D. Vencatachellum. 2004. *Coordination Failure and Employment in South Africa*. DPRU Working Paper 04/86.

¹⁵ Bhorat, H., Lundall, P. and S. Rospabe. 2002. *The South African labour market in a globalizing world: Economic and legislative considerations*. Geneva: International Labour Organisation.

¹⁶ Kraak, A. 2003. *HRD and the skills crisis*. Human Resources Development Review 2003: Education, Employment, and Skills in South Africa. Cape Town: Human Sciences Research Council and East Lansing: Michigan State University Press.