



Recorded fatal and permanently disabling injuries in South African manufacturing industry – Overview, analysis and reflection

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ABSTRACT

Studies on occupational accident statistics in South Africa are few and far between, the most recent paper on the manufacturing sector was published in 1990. Accidents in South Africa are recorded in two systems: Exhaustive information is available from the insurance system under the Workmen's Compensation Commissioner (WCC) but to access it on a timely basis is difficult. The legislative system under the Department of Labour (DOL) provides coarse but timely recordings. Interpretation is not simple however; both systems have seen changes to reporting formats and inclusion criteria over time, which hinder trend analysis. Also, the recordings of the two systems are not comparable due to major scope differences. This paper examines the relationship between the recordings in the two systems. Juxtaposing data from both systems the recordings of fatal accidents are found to be in agreement, somewhat less so for permanently disabling accidents/incidents. The paper examines if effects of the popular practice of replacing permanent workers with contract workers is visible in the WCC statistics – firm conclusions cannot be drawn however, due to data shortcomings. Data inaccuracies are reviewed and it is argued that WCC registrations may comprise industries outside the Standard Industrial Classification (SIC) scheme for manufacturing. The quality of accident reporting in official publications began to deteriorate by mid-1990s. The largest problem, however, is that reporting has come to a standstill, by mid-2012 the most recent WCC statistical publication covers 1999.

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1. Introduction

There are very few studies on South African accidents statistics. The last paper on industry accident statistics was [Leger and Macun \(1990\)](#) who examined accident metrics published by the Workmen's Compensation Commissioner covering the period up till 1984. The current work fills a gap in the literature on South African injury epidemiology with an updated and a more comprehensive analysis for the period 1970–2010, using the number of injuries registered with two administrative systems and employment data from a third source, Statistics South Africa.

Accident statistics may serve as an important feedback instrument to monitor performance. The International Labour Organisation (ILO) acknowledges that the effective recording and notification of occupational accidents are instrumental in prevention. Statistics on occupational accidents may serve as a tool for measuring level of success in compliance, enforcement and preventive action ([ILO, 1996](#)). Metrics based on length of absence from work are intrinsically unreliable. In comparison do statistics of

fatalities and serious injuries provide more reliable indices of safety performance. This paper therefore deals solely with statistics on fatal and permanently disabling injury; it estimates incidence rates and examines trends. It also examines some of the general limitations of statistics on occupational accidents and outlines important scope differences and uncertainties for the South African case. The purpose is to provide a basis for an informed discussion on the safety performance of South African manufacturing, with a perspective on limitations of the data available.

Occupational accidents in South Africa are recorded in two systems: The insurance system, which for manufacturing is vested with the Workmen's Compensation Commissioner (WCC), and the legislative system under the Department of Labour (DOL). Interpretation is not simple, however. The recordings from the two systems are not directly comparable due to scope-of-inclusion differences. Furthermore, over time, there have been changes in definitions and reporting formats. The changes introduce variation in data that is unrelated to accident prevention performance and distort trend analysis. To overcome these complications, the paper juxtaposes data from both systems and employs multiple regression techniques to compute adjusted injury rates.

The ILO publishes global estimates of occupational accidents by country (e.g. [Takala, 1999](#); [Hämäläinen et al., 2006](#)) – which

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encourage comparison and benchmarking. It has long been recognized however, that there are certain limitations to the various official accident statistics. Already four decades ago, the Lord Robens Committee (Robens, 1972) noted that official accident statistics must be viewed simply as by-products of the information systems in use by the authorities, rather than as precise indicators of performance – cited reasons were that reporting criteria, incident classifications, and other categories differ from one system to another and even within a reporting system across time. Lord Robens's observation is still relevant. Jacinto and Aspinwall (2004) examined occupational accidents notification systems within the enlarged EU and observed that the lack of uniformity in EU databases and certain variations in data collection methods make comparability difficult.

The current work therefore provides background information necessary for detailed interpretation and contributes with a review of developments and changes in the DOL and WCC systems. The purpose is to aid meaningful comparability.

As already noted, studies on South African accidents statistics are scarce. The majority of studies concern the mining sector, which under apartheid had extreme injury rates (Leger, 1992, 1990; Eisner and Leger, 1988a, 1988b). A seminal work was undertaken by the Commission of inquiry into safety and health in the mining industry (Leon Commission), which bluntly stated that self-regulation in the industry had failed (Leon et al., 1995). A more recent study by Murray et al. (2005) on an association between HIV infection and injury rate provides newer data with breakdowns on injury rates per age and calendar period. Recent studies for other sectors have not been identified. Some data were provided by Lerer and Myers (1994) who examined underreporting of fatal injuries in Cape Town; they provided a breakdown of underreporting per industrial sector. The last published paper on South African industry accident statistics was Leger and Macun (1990) covering the period up till 1984.

2. Data sources

2.1. Introduction

Accident statistics are commonly expressed as rates, per unit population or per unit time worked. Computation of rates requires number of injuries (numerator figures) and exposure (denominator figures). *Incidence rates* express injuries in terms of number of persons exposed to the risk per year. *Frequency rates* express injuries in terms of hours of exposure taking into account actual exposure to the risk, e.g. including overtime hours. *Severity rates* express the number of days lost in terms of hours of exposure, taking into account the gravity of the injury. Rates can either be computed for (insured) *employees* or for *workers* (insured and uninsured combined). An important uninsured group is the self-employed.

2.2. The workmen's compensation system

The first law relating specifically to workmen's compensation in South Africa was passed in 1896 in Natal Province (the Employers' Liability Act, Natal) and prior to the Union in 1910 similar legislation was also in existence in other provinces. The first Union law to make provision for workmen's compensation came in 1911 (Native Labour Regulation Act). It provided for Black labourers only and the scope was very limited. In 1914, Parliament passed a Workmen's Compensation Act providing for death or accidental injury, but not for medical Aid. Act 59 of 1934 introduced compulsory insurance and provisions for medical aid and required employers to insure with any approved insurance company. It was succeeded by the Workmen's Compensation Act in 1941, which replaced insurance with private companies by a mutual insurance fund under the aegis of the State (Wiehahn, 1980:10). The 1941 Act, although

amended on 16 occasions, was to last for over 50 years until replaced by the Compensation for Occupational Injuries and Diseases (COID) Act No. 130 of 1993.

Since 1941, the Acts provide a system of fault-less compensation. Employees are entitled to compensation regardless of whether they contravene any laws or instructions or are acting without orders at all (e.g. COID Act No. 130 of 1993, sec 22). The main exception is in case of "serious and wilful misconduct" including drunkenness, which is only compensated if the injury is serious (Wiehahn, 1980, sec 1). The main exclusions in the 1941 Act were (1) out-workers who typically perform work at home, (2) employees with annual earnings above a certain ceiling, and, (3) domestic servants in private homes (Act No. 30, 1941: sec 3). The 1993 Act abandoned the wage ceiling and the exclusion of out-workers, but domestic workers are still excluded.

The State Accident Fund (SAF) introduced with the 1941 Act derives its income mainly from a levy on employers' annual wage bills and its administration is vested with the Workmen's Compensation Commissioner (WCC). Assessment rates are so determined that each class of industry shall bear its own cost of accidents, i.e. a system of experience rating with a variable tariff based on claims history. Certain employers are exempted from tariff assessments, including government departments, certain large municipalities, provincial administrations and the South African transport services; they pay for compensation from their own funds. All employers in the mining industry must register with the Rand Mutual Assurance Company (RMA) and those in the building industry with the Federated Employers' Mutual Assurance Company (FEMA). In total, accidents are registered with nine different funds. National accident statistics from these nine funds are annually compiled and published by the WCC.

Since 1941, the WCC statistics cover compensated accidents, which in broad terms are defined as being incurred during the course of employment (e.g. COID Act 1993, sec 22), and include road accidents. Even commuting accidents are included if the employer provides this service free of charge. Accidents that are reported to the various funds but cannot be compensated according to the Act are repudiated. Prior to the new COID Act in 1993, the repudiation category 'not a workman' would include out-workers and employees earning above the wage ceiling. Any compensation claims from independent contractors will also show in this category of repudiated cases.

Employers with the SAF are required to inform the WCC of the number of persons employed with them. Similar employment figures are not available from the other eight funds. For the SAF only, the WCC computes and publishes accident frequency rates for different branches of industry.

2.3. Department of Labour

The first Factories Act of 1918 required reporting of accidents, and accident statistics have been published in the Department's annual reports since the 1920s.

Reporting criteria for non-fatal accidents have changed over the period of interest. The Factories Act of 1941 required that accidents resulting in four or more days off work were reportable. That time threshold was changed with the Machinery and Occupational Safety Act (MOSA) of 1983 to 14 days or more off work (Leger and Macun, 1990). The DOL's annual reporting of "incidents" (before 1985 the term "casualties" was used, and around 2005 the term "non-fatal" appears) are not comparable to the permanent disablement figures published by the WCC.

The present legislation requires that incidents are reported if they result in 14 days or more off work, result in death or permanent physical disability, if a dangerous substance was spilled, machinery fractured, amongst others. Reporting of traffic accidents

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