SOUTH AFRICAN NATIONAL SURVEY OF RESEARCH AND EXPERIMENTAL DEVELOPMENT

INDUSTRY RESULTS

R&D IN THE MINING INDUSTRY IN 2021/22

Research and experimental development (R&D) contributes to more efficient, sustainable and cost-effective ways to mine. Global trends show that mining companies increasingly use advanced technologies and digital innovations. South African mining companies are no exception to the trend, evident in significant investment in R&D processes that support modernisation of the sector. This fact sheet presents a snapshot of current patterns of R&D expenditure in the mining industry, funding and human resources informing efforts to improve current practices and grow the sector.

FACT SHEET NO. 59

Science and Innovation
Statistics South Africa

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R&D SURVEY
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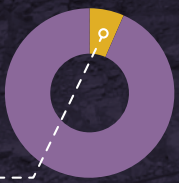
THE BIG PICTURE

In **2021/22 total business R&D expenditure** was **R9.8 BILLION** in real terms.

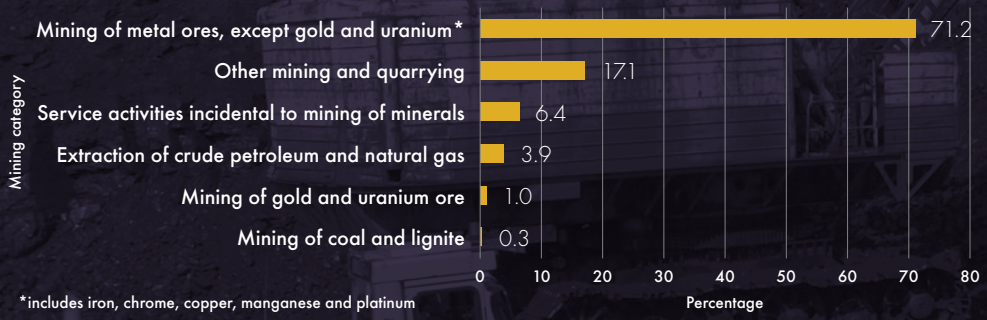
Of this, **mining of minerals and mining-related activities** contributed **R645.9 MILLION**



LATEST R&D EXPENDITURE TRENDS

In 2021/22, the mining of metal ores, excluding gold and uranium, represented 71.2% of the sector's R&D expenditure, while the mining of coal and lignite accounted for the lowest R&D performance at only 0.3%.

Figure 1: R&D expenditure in mining sub-sectors, 2021/22

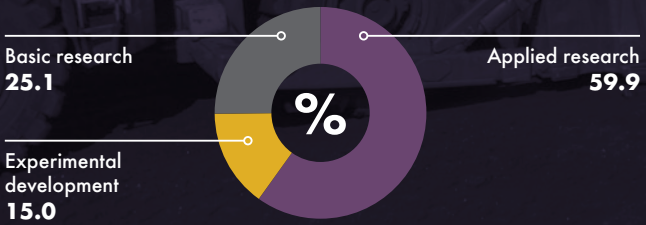


*includes iron, chrome, copper, manganese and platinum

RESEARCH FOCUS IN THE MINING SECTOR

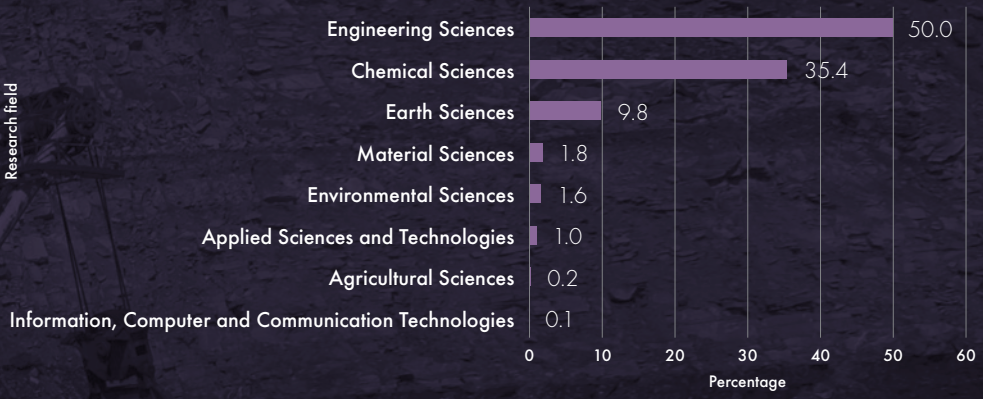
Mining companies allocated nearly 60% of their R&D expenditure to applied research, followed by basic research (25.1%) and experimental development (15.0%).

Figure 2: R&D expenditure in mining by research type, 2021/22



Research in the mining sector was primarily concentrated in three fields: engineering sciences, which accounted for 50.0% of R&D expenditure, chemical sciences at 35.4%, and earth sciences at 9.8%.

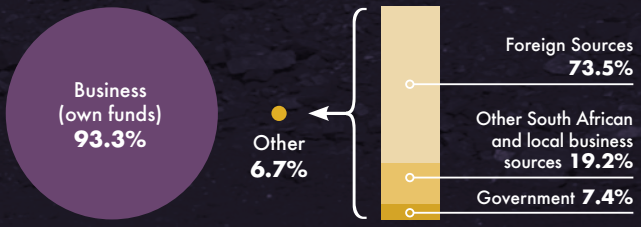
Figure 3: R&D expenditure in mining by research field, 2021/22



SOURCES OF FUNDS

Private businesses invested the most in mining R&D in 2021/22, contributing R602.7 million in real terms of the total R645.9 million spent in the mining sector on R&D. Government funding of R&D amounted to just R3.1 million in the mining sector.

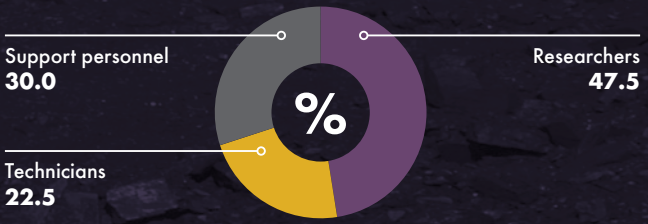
Figure 4. Breakdown of sources of funding in the mining sector, 2021/22



R&D CAPABILITIES IN THE MINING SECTOR

Nearly half (47.5%) of R&D personnel in the mining sector were researchers, with support personnel at 30.0% and technicians at 22.5% in 2021/22.

Figure 5. R&D Personnel in mining, 2021/22



BEHIND THE NUMBERS

The annual South African National Survey of Research and Experimental Development (R&D Survey) is conducted by the Centre for Science, Technology and Innovation Indicators (CeSTII) at the Human Sciences Research Council (HSRC), on behalf of the Department of Science and Innovation. R&D statistics are collected in terms of the Statistics Act No. 6 of 1999, and are quality assured by Statistics South Africa. Data collected through the survey, and its historic data series, helps to inform decision-makers on investment planning, policymaking, advocacy, and research in South Africa. Data also contributes to benchmarking and performance comparisons with international counterparts.

Access previous survey reports:
https://hsrc.ac.za/divisions/centre-for-science-technology-and-innovation-indicators/

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Front cover image credit: GCIS
South African President Cyril Ramaphosa at the launch of the Anglo American 290 tonne payload mine haul truck in 2022.

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