



THE ELSEVIER FOUNDATION

National Assessments on Gender and Science, Technology and Innovation

Country Results: South Africa

The National Assessments on Gender and STI project is a collaborative initiative between Women in Global Science and Technology (WISAT), the Organization for Women in Science for the Developing World (OWSD) and futureInnovate.net. The current phase, funded by the Elsevier Foundation, tests the Gender Equality – Knowledge Society (GEKS) framework in six countries and one region: Brazil, India, Indonesia, Republic of Korea South Africa, the USA and the European Union. These countries were chosen because of the size of their STI sector and the existence of an STI policy environment.

The Gender Equality Knowledge Society (GEKS) indicator framework was developed in response to the situation that not only are many women — particularly those in the developing world — on the wrong side of the digital divide, they are on the wrong side of the knowledge divide: worldwide their capacity is grossly under-developed and under-utilized. They are at risk of becoming increasingly marginalized in the knowledge society and related science, technology and innovation systems. Not only do they have less access to information and technology, they are poorly represented in the educational, entrepreneurship and employment opportunities in science, technology and innovation (STI) that base a knowledge society.

The GEKS framework is organized into three sections – Inputs, Outcomes and Enabling Policies, each comprised of key data indicators:

Inputs	Health, social status, economic status, access to resources, agency, opportunity and capability
Enabling Policy Environment	National knowledge society policies; childcare, equal pay, flexible work, infrastructure; CEDAW status; gender mainstreaming in government institutions
Outcomes	Knowledge society decision making; knowledge economy; S&T decision making, STI participation

Results and Findings:

From the national level research and data analysis, preliminary results affirm that women have lower levels of access to the productive resources necessary to support active engagement in the knowledge society – property (land); financing; technology; and education. In turn their representation in employment, entrepreneurship and research is lower in key sectors of the knowledge society, while women in most of the most countries under study are experiencing inequality of opportunity.

Main findings are that the key factors to promote women's participation in national STI and knowledge systems are: economic status, access to resources, and enabling policies.

It is also clear that more consistent and systematic collection of sex-disaggregated data at the national and international levels is necessary to develop the policies that will allow countries to profit from the underutilized potential of their female population.

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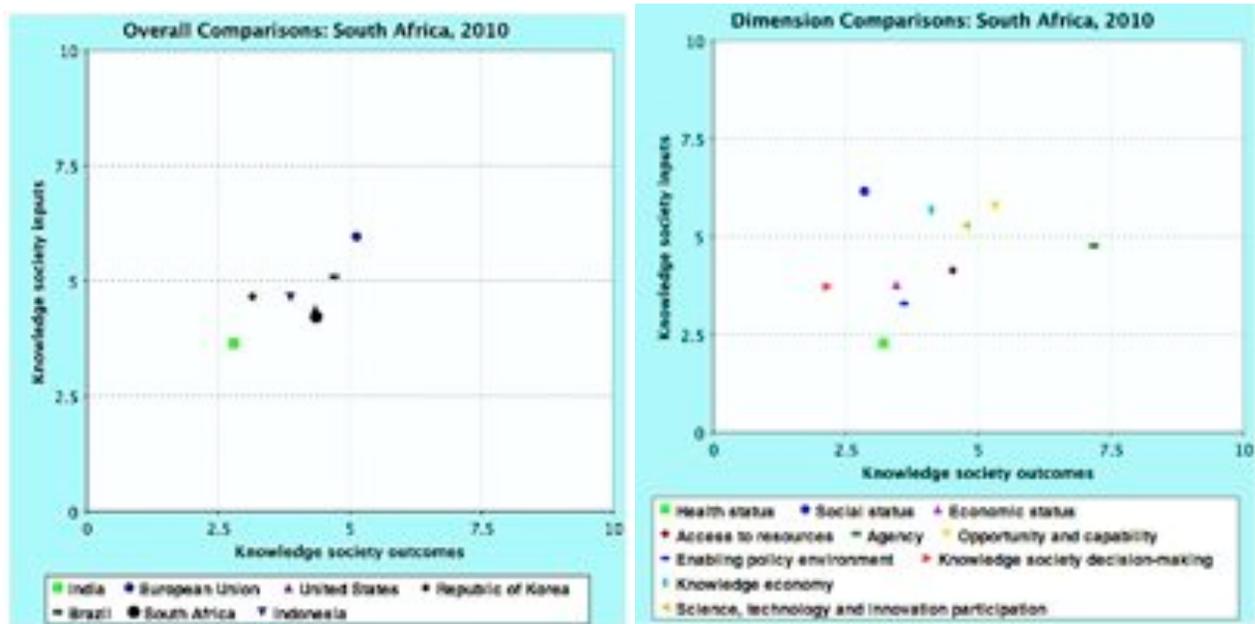
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Full papers and key findings are found at <http://www.wisat.org/programs/national-assessments-on-gender-sti/>

South Africa 2010-11

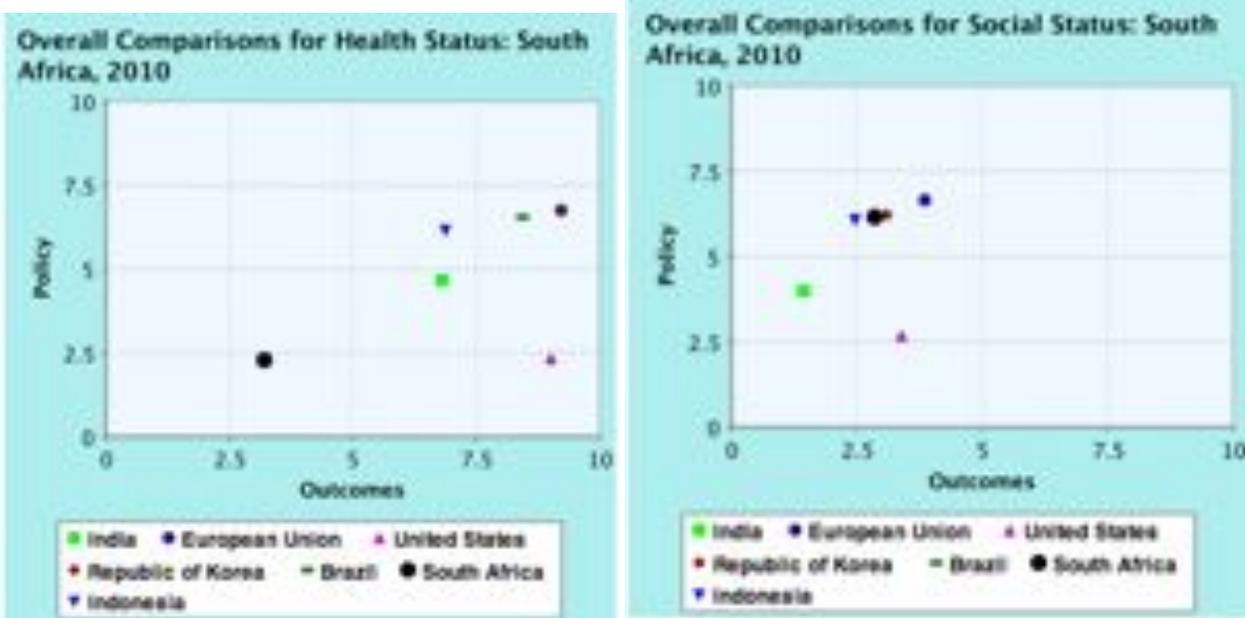
Key Indicators

Population	50.46 Million (2012)
Females per 100 males	102
Level of Human Development (HDR) / Rank	Medium – 123 (2012)
CEDAW signatory	Yes
Percentage of GDP allocated to R&D	0.7% (2009)



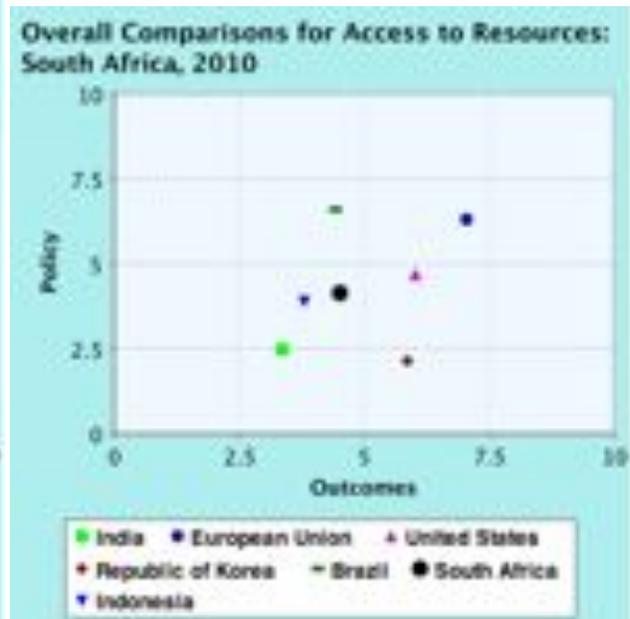
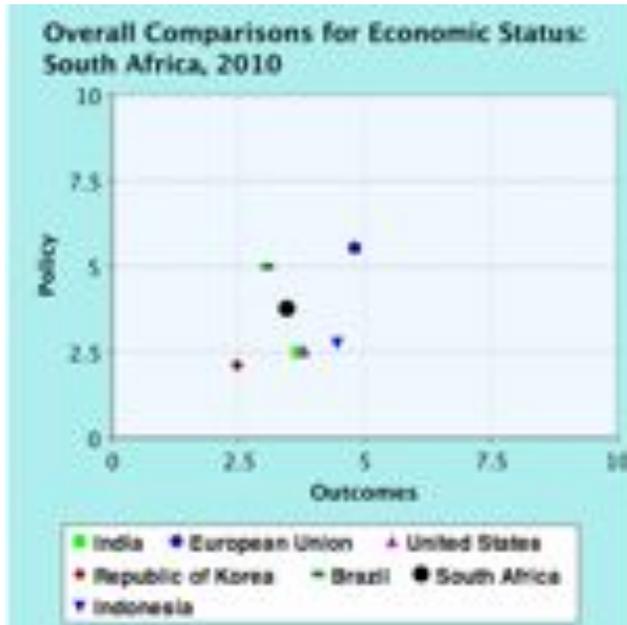
South Africa ranks fifth overall but first in agency. It ranks highly also in knowledge society decision-making (2), third in social status, and fourth (although close to the higher ranked countries) in science, technology and innovation participation. This is likely a result of a strong educational system, a policy focus on STI, and a quota system implemented in various sectors of society to promote diversity of participation by race and gender. Its high rate of HIV in the population puts it last in health, while it ranks 5th in access to resources. To address the high levels of poverty and marginalization among women in the country, South Africa's best practice so far has been the provision of a social security net to an increasing number of beneficiaries, the majority of whom are women. However, many challenges exist, in particular the increasingly gendered nature of poverty; the fact that the condition of women has not improved measurably, despite government interventions and infrastructure injection; the lack of funding for women's programmes; and the fact that rural women, children, people with disabilities and older persons remain the most vulnerable. Some of the strategies needed to address this include implementation of an integrated poverty eradication strategy, the targeting of the poorest families and marginalised communities with a basket of services; the need to strengthen the national gender machinery; and the creation of a special fund to support poverty eradication.

By Dimension



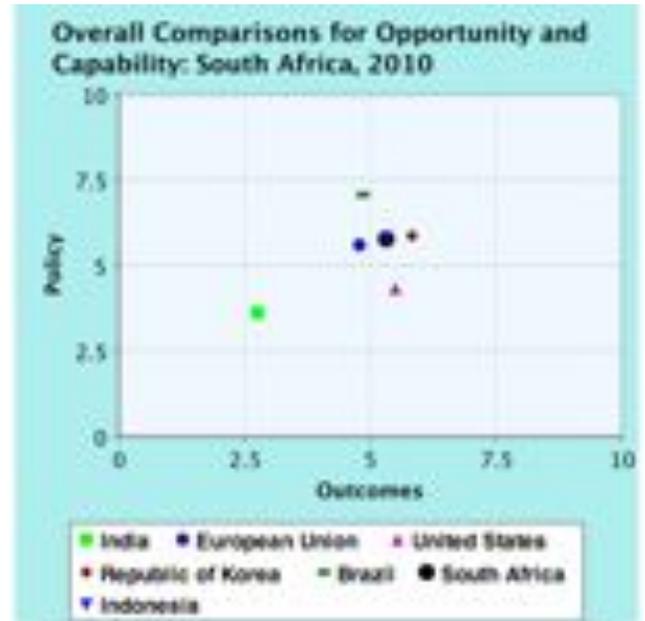
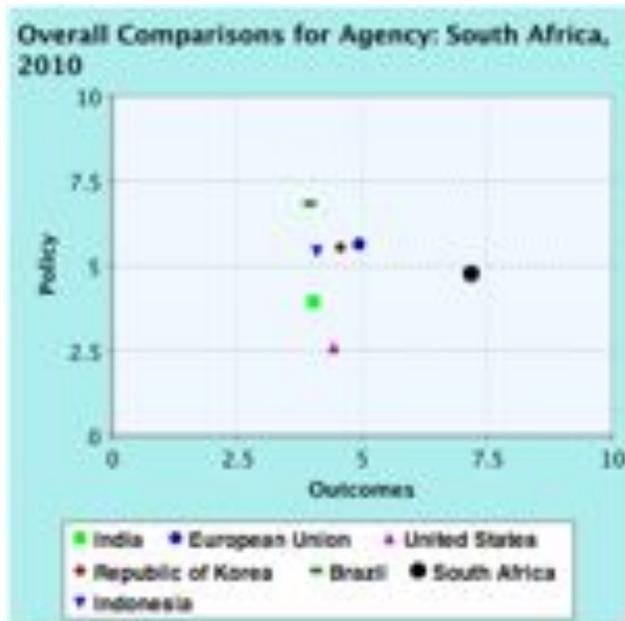
Dimension 1: Health Status. Since 1994 there have been many health initiatives for women, including the establishment of the right to legal and safe abortions and the elimination of user fees for pregnant and lactating women and children under the age of 6. Much work has been done to lessen the incidence of HIV/AIDS among women, especially in mother to baby transmission, since the disease is most prevalent among women of childbearing age. However, the rate among adult women continued to rise between 2000-2010 while falling for adult men. Given the high rates of HIV/AIDS and maternal mortality, life expectancy for South African women is significantly below the world average and only marginally higher than that of men in the country. The Ministry of Women is actively promoting national health insurance. High HIV rates for women in South Africa is one of the major reasons for its lower ranking among the countries in this study.

Dimension 2: Social Status. Sexual harassment and sex-related violence are major social problems. The government has passed substantial legislation to eliminate discrimination and implement positive measures towards gender equality. Women are able to challenge the application of harmful aspects of customary law. While violence against women is significant, it is dropping somewhat and is treated very seriously by government. More women are working full-time now – 54% of those who work, but they are also doing more hours of unpaid work than men. There are very few public or private facilities, assistance or arrangements for childcare. The country is developing a strong policy environment to support women.



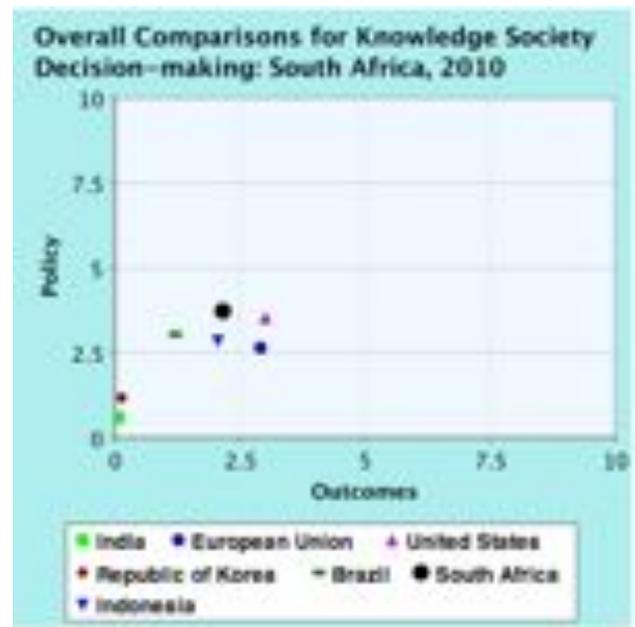
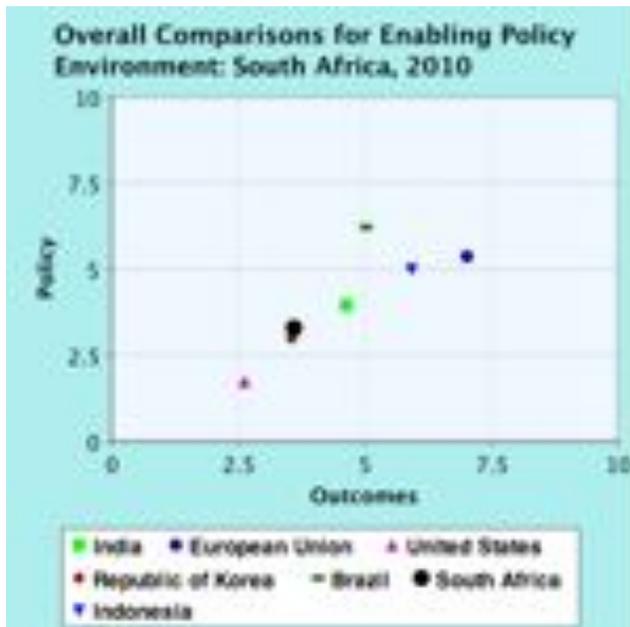
Dimension 3: Economic Status. Women in South Africa comprise 45% of the labour force, with a lower female labour force participation ratio than men. The unemployment rate for females is very high—as much as 60% among ages 16-24. Fifteen percent of women work as domestics in private houses, as compared to 3% of men. Fewer women than men are self-employed, but more women than men operate informal economy businesses (a classic stratagem of the marginalized poor to generate income). Male-headed households do better in all measures, with women earning 60% of male-earned income. Only in the category of domestic workers (the lowest wage category) are women’s wages equal to those of men. Government has been encouraging agricultural co-operatives, in which women comprise the majority of members. Women are the major beneficiaries of social grants, which provide a social security net. However, the condition of women, especially rural women, has not improved measurably.

Dimension 4: Access to resources. The government is actively trying to secure women’s ownership rights, especially to land, housing and credit. It is notable that women in South Africa have more access to cell phones than men, but the reverse is true of the Internet. Access to modes of transport is gendered, with the lack of transport in rural areas, where women predominate, posing life- and health-threatening conditions and limiting entrepreneurial opportunities. Access to electricity is also gendered: female-headed households in the rural provinces have the lowest access to electricity, at the same time that studies show a positive correlation between female employment and electrification.



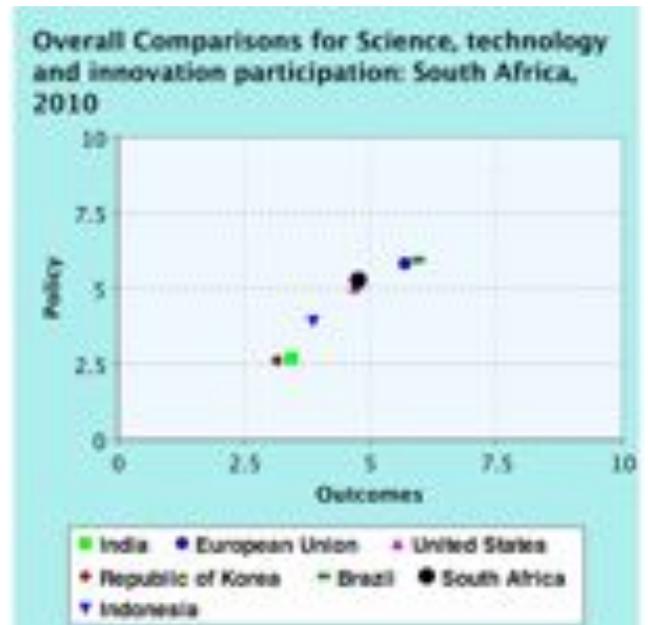
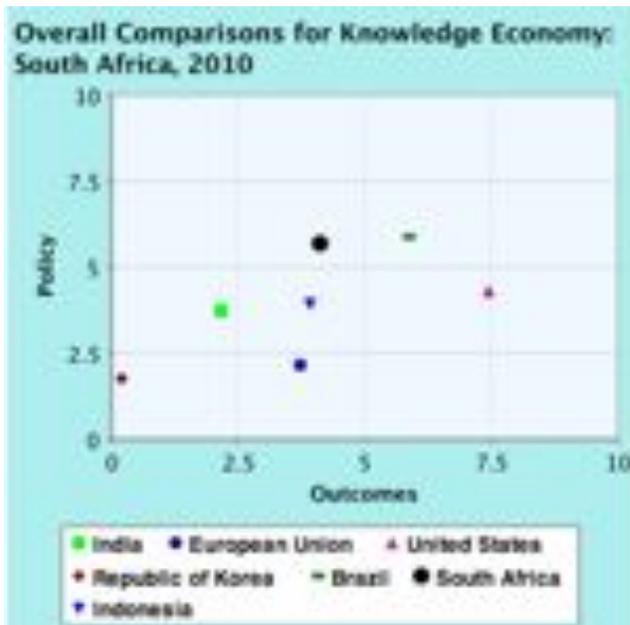
Dimension 5: Women's agency. Women are well represented in politics and government in South Africa, forming 44% of the National Assembly in 2009. The party in power – the African National Congress – requires that every third person on party lists be a woman. In 2009 South Africa ranked sixth on the World Economic Forum Global Gender Gap Index, up from twentieth the previous year. Women, however, are not present in top labour union posts. Condom use among women 25-49 is increasing steadily, from 20% in 2002 to 58% in 2008.

Dimension 6: Opportunity and capability: Nine years of education are compulsory for all, and slightly more males than females are literate. Gross enrolment ratios show more girls than boys at both secondary and tertiary levels. Many girls still drop out however, due to pregnancy and lack of sanitary towels. In view of fewer girls than boys passing math and science on grade 12 exams, a number of initiatives to improve this are underway. In skills training in the private sector women seem to be doing significantly more training in managerial, professional and technical occupations than men, but less in community and sales occupations. Women are at least half of skilled trainees in the public sector as well.



Dimension 7: Enabling Policy Environment. Gender equality is a core concept of the Bill of Rights embedded in the Constitution of South Africa (2003), with national machineries established to put this into operation. Government commitments are expressed in the National Policy Framework for Women’s Empowerment and Gender Equity, with leadership taken by Policy Coordination and Advisory Services (PCAS) located in the office of the Presidency. In 2009 a Ministry for Women, Children and Persons with Disabilities was established, with objectives which include development of a bill to ensure 50/50 gender parity, the reduction of violence against women and the establishment of gender focal points in government departments. The government’s awareness of gender equity is highly advanced, but implementation is lacking due to limited human and financial resources. Women and minorities are included in the national strategy on R&D, and a SET4Women committee is active in the National Advisory Council on Innovation (NACI) of the Department of S&T.

Dimension 8: Women in Knowledge Society Decision Making. Women constitute 51% of the general population but only 22% of executive managers and 16% of board directors. More women are represented in decision-making positions in the public than in the private sector. The government has a target of 50% women at all levels of senior management; the country is on track to meet this target. There is a huge race gap in top management between the government and the private sector. Women are greatly underrepresented in leadership positions in science where they occupy less than one quarter of such positions, although South Africa shows the highest percentage of female members in this study in its national academy of science, and ranks among the top worldwide. The figure of 17% for women as heads of universities is an improvement over the past, and there are several initiatives under way to improve the position of women in educational leadership overall.

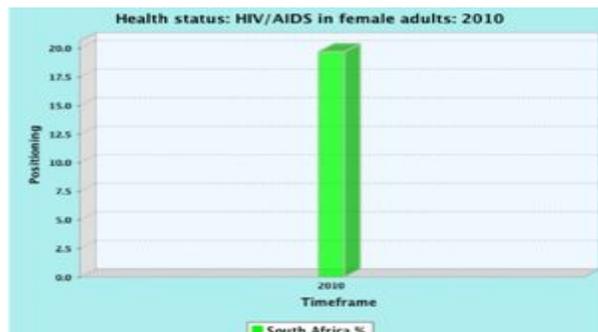
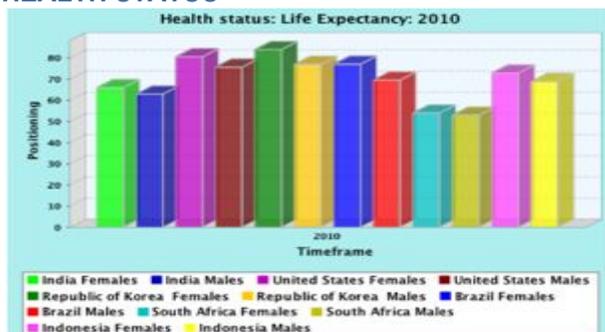


Dimension 9: Women in the knowledge economy. Larger percentages of women occupy administrative and technical support positions relative to managerial and professional positions, and women workers are still predominantly represented in community and social services. The ICT labour force is strongly gendered, with men making up more than four-fifths of the core ICT labour force. Women's share decreased between 2000 and 2005 even as general employment in the ICT sector was increasing. Women comprise three-fourths of ICT end users (in administrative support and secondary ICT work). A legacy remains of women staying away from things technical. Factors include lower levels of access to ICTs by women and girls – especially in rural areas; absence of female role models; lack of guidance on ICT as a career area; and the fast-moving pace of IT that mitigates against workforce re-entry.

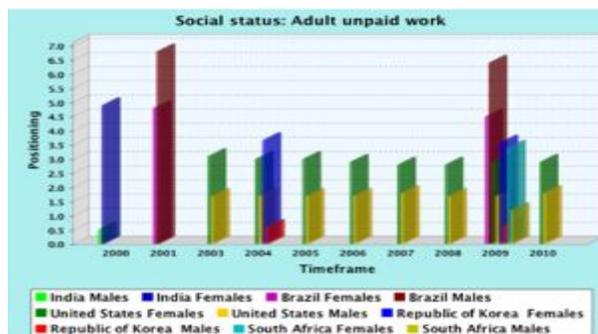
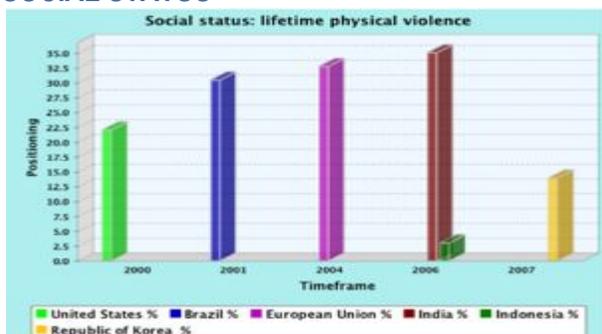
Dimension 10: Women in S&T innovation systems. The Department of Science and Technology set up a special programme for promotion of women in science in 2002 (SET4W). By 2009 women still made up only 22% of those with undergraduate degrees in SET while comprising 57% of all university enrolments. As elsewhere, women are very well represented among doctoral graduates in both health and social science, with very few women graduates in engineering (15% in 2007). While women comprise only 16% of the engineering professionals working in the country, they make up 52% in biotechnology. The share of female academic staff is growing but women tend to be appointed and concentrated at lower levels. Most women researchers work in nonprofits, with the smallest number working in the business sector. The percentage of women researchers in higher education is much lower among African than white women. Women comprise only about 1/3 of publishing scientists, tending to show a stronger commitment to teaching over academic research. There are several initiatives to support the development of female science students, academics and researchers by the National Research Foundation (NRF), as well as awards and support organizations (e.g. the Association of South African Women in Science and Engineering). In entrepreneurial activity women comprise around 40% of all classes (early-stage, new, established) entrepreneurs and owners of about 8% of nascent businesses. In relation to the population, there is an overall low level of entrepreneurial activity. A number of Initiatives are underway to develop and strengthen female entrepreneurship.

Detailed results by dimension

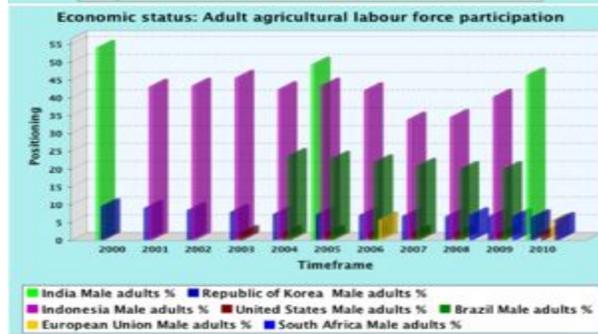
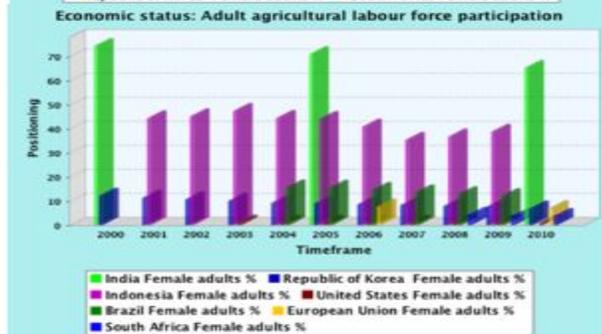
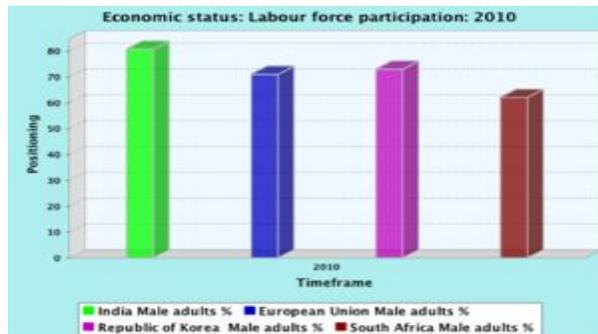
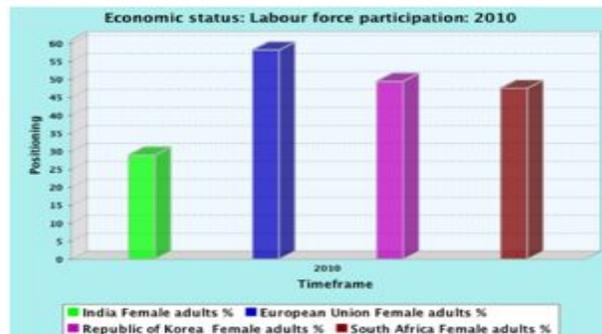
HEALTH STATUS



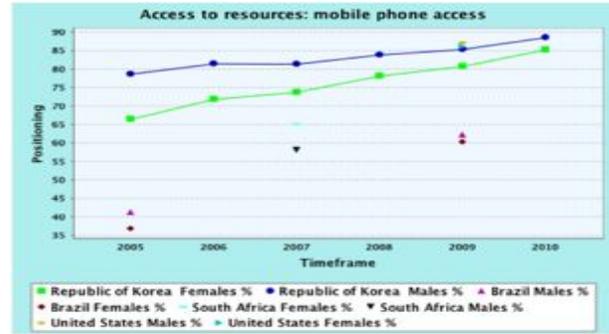
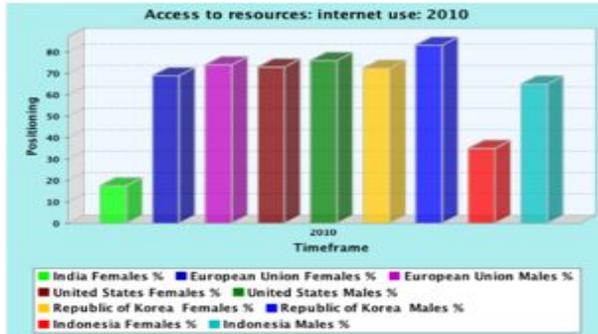
SOCIAL STATUS



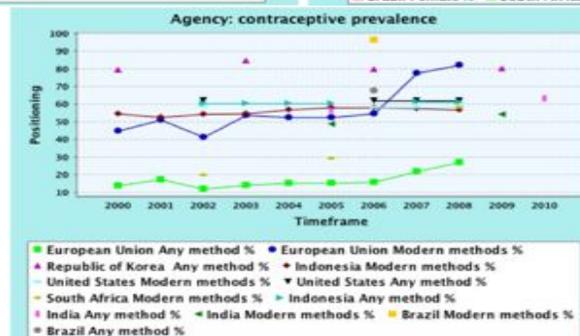
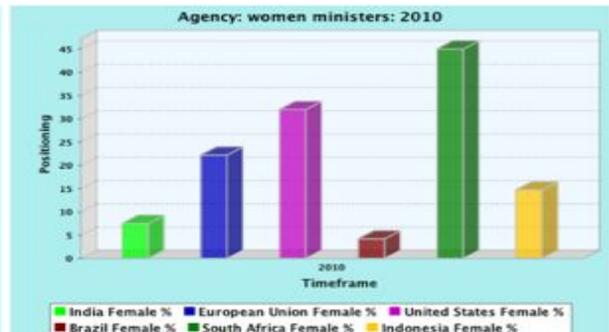
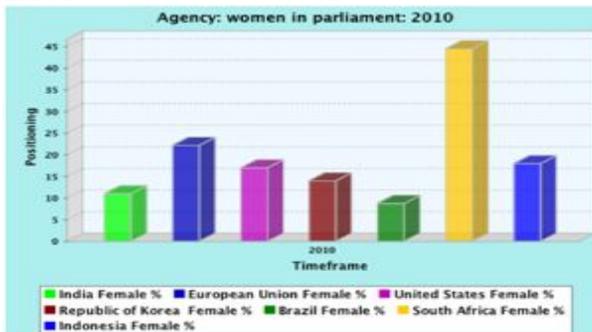
ECONOMIC STATUS



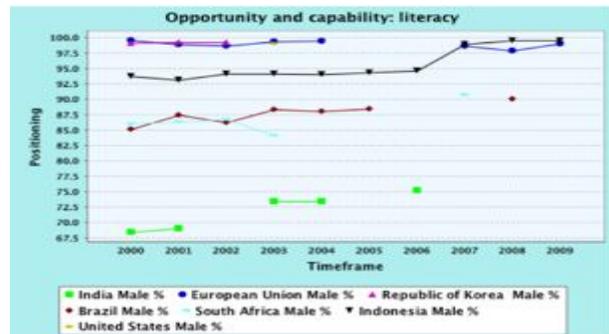
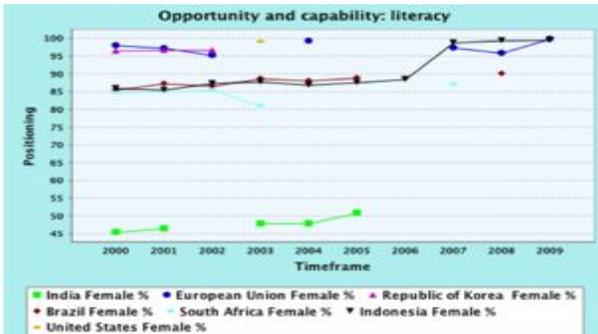
ACCESS TO RESOURCES

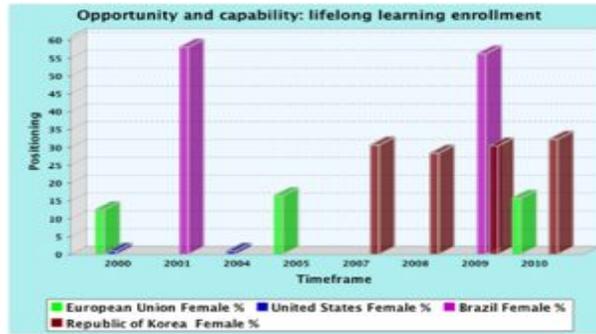
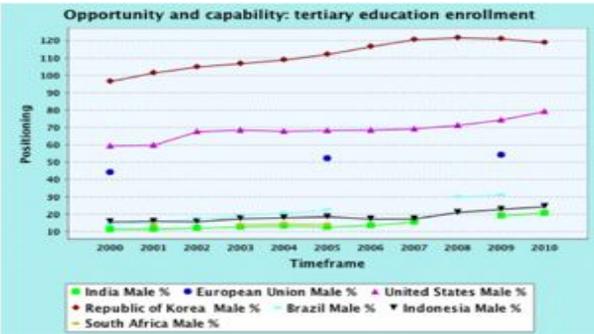
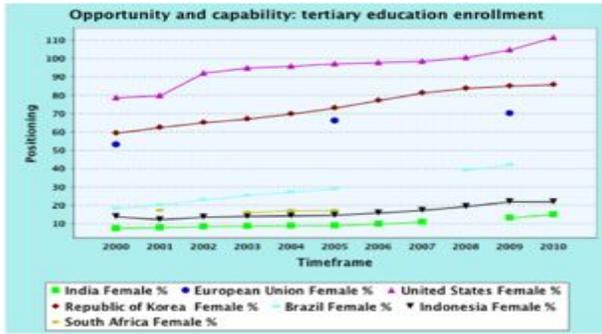


AGENCY

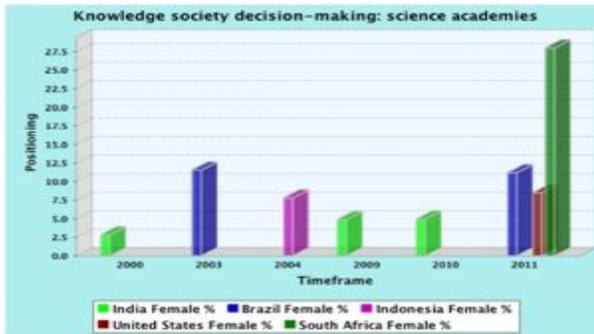
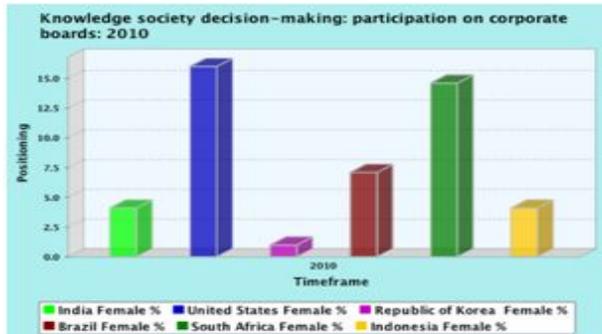


OPPORTUNITY AND CAPABILITY

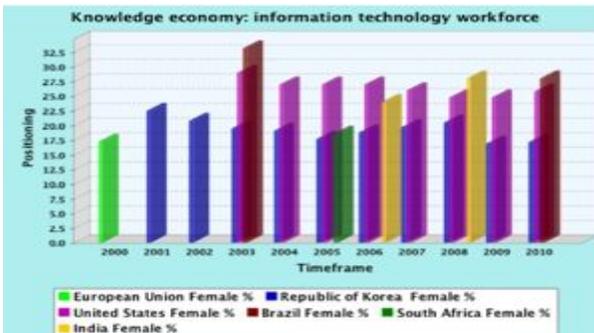
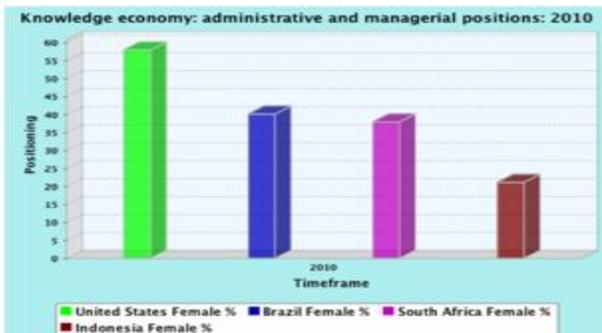




KNOWLEDGE SOCIETY DECISION-MAKING

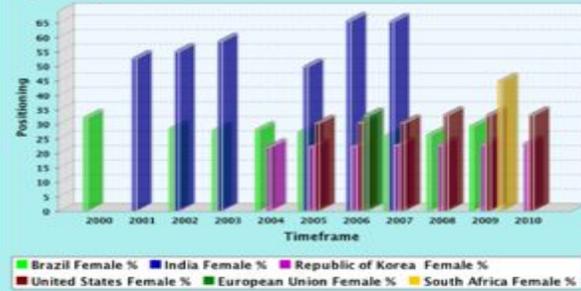


KNOWLEDGE ECONOMY

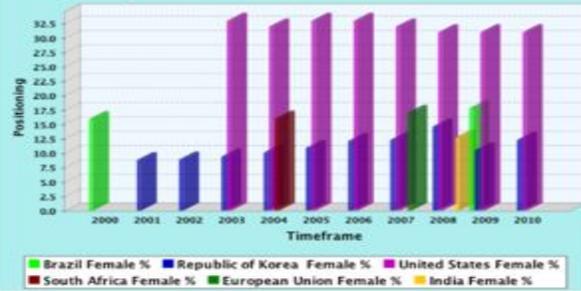


SCIENCE, TECHNOLOGY AND INNOVATION PARTICIPATION

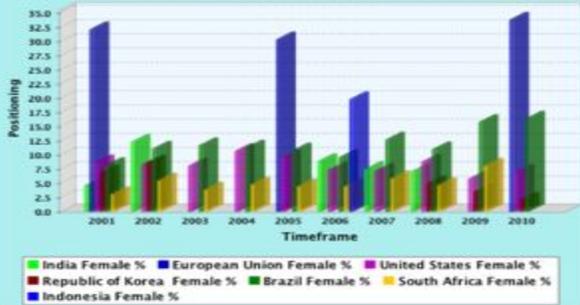
Science, technology and innovation participation: tertiary science and engineering enrollment



Science, technology and innovation participation: science and engineering labour force



Science, technology and innovation participation: entrepreneurship



Summary Data

