National Assessments on Gender and Science, Technology and Innovation

Country Results: Republic of Korea

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:

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Health, social status, economic status, access to resources, agency, opportunity and capability</th>
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<tr>
<td>Enabling Policy Environment</td>
<td>National knowledge society policies; childcare, equal pay, flexible work, infrastructure; CEDAW status; gender mainstreaming in government institutions</td>
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<td>Outcomes</td>
<td>Knowledge society decision making; knowledge economy; S&amp;T decision making, STI participation</td>
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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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*Full papers and key findings are found at www.wisat.org/programs/national-assessments-on-gender-sti/*
Republic of Korea 2010-11

Key Indicators

<table>
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<th>Indicator</th>
<th>Value</th>
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<tr>
<td>Population</td>
<td>48,391,000</td>
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<tr>
<td>Number of females per 100 males</td>
<td>101</td>
</tr>
<tr>
<td>Level of Human Development (HDR) / Rank</td>
<td>High - 15</td>
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<tr>
<td>CEDAW signatory</td>
<td>Yes</td>
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<tr>
<td>Percentage of government spending on R&amp;D/STI¹</td>
<td>3.45</td>
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While it ranks first in health, the Republic of Korea is last in several sectors, including economic status, access to resources, enabling policy, knowledge economy and STI participation. This reflects the situation that even though it ranks third in opportunity and capability it sees a low level of female participation in public and economic life in both public and private sectors. This shows the country has failed to adequately support its women to participate actively in its economic success. It also shows the lack of correlation between a country’s GDP and gender equality. While an enabling policy environment for gender equality in the knowledge society is well established and several institutes are working to improve women’s status in diverse fields including STI, overall a low level of awareness exists in the country. Diverse laws and policies are encouraging considerable development and rapid advance in gender equality in the country over the past ten years. After the new millennium, female participation in STI system has made continual gradual progress, however the share of women in professional fields remains substantially lower than that of men and is well below the average for member countries of the OECD. In private enterprises where the laws and policies do not apply, women’s progress has been slow, and the percentage of female-run enterprises is also extremely low. In these areas countermeasures for stabilizing women’s access to knowledge society are needed. There are gaps between the law and social understanding and due to pro-active measures such as quotas for women, male backlash against the policies often emerges. This picture demonstrates a glaring lack of correlation between national GDP and gender equality.

¹ Battelle 2012 Global R&D Funding Forecast.
Dimension 1: Health Status. There are no great differences between males and females in the health and social status dimensions in the Republic of Korea. Women have high health and life expectancy status compared with most other countries of the world. Both men and women have gained 18 years in life expectancy since 1970 and the country is above the world average for both men and women. As is true elsewhere, woman have higher life expectancies (84 years to 77 years) than men. In other areas, malaria is not a concern for women, as most cases are soldiers – who are male. Tuberculosis, which is seven times higher than the OECD national average, is actually on the rise among Korean women, but men are 1.5 times more likely to be infected by it. The HIV/AIDS incidence rate is relatively low, with men 11 times more likely to become infected than women.

Dimension 2: Social Status. Gender equality action is centred in the government-led policies that support women to attain education and training. Many laws guarantee gender equality, in particular the Basic Women’s Development Act and the Act on Gender Equality. The sex ratio at birth went up to 110 in 2003, but has been falling, to 106.7 in 2010. The sex ratio at birth for the third child is 114, considerably exceeding the normal sex ratio, reflecting a traditional preference for sons realized through sex-selective abortion. While domestic violence is on the rise, the Republic of Korea is in the lowest quartile of countries globally in the incidence of women experiencing violence from their domestic partner. Women in the country spend many more hours than men in household work and family care, although the gap has decreased in recent years, including in dual-earner families. However, men in dual-career families are not doing any more housework than those in male single-earner families. As a result, women put in 116% of the total work time of men, far above the OECD average of 106%.
Dimension 3: Economic Status. Women’s paid economic activity has remained static over the decade with women accounting for about 40% of the total labor force. Over the last fifty years the gap between men’s and women’s labor force participation rates has been decreasing. Lower economic status for women is seen in several areas: there is a large gap in female to male wage ratios, with women earning less than two-thirds of male income for equivalent work; women comprise a high percentage of irregular workers, whose work situation is marked by low wages and unstable employment; and the proportion of economically active women with a university degree is markedly lower than that of other OECD countries. We also see that university-educated women are also more likely to be unemployed than their male counterparts and poverty rates for women are gradually increasing, with women comprising nearly three-fifths of those below the poverty level.

Dimension 4: Access to resources. There are no legal barriers to women’s ownership of homes and land, but the trend is for registration under male ownership. With expanded awareness of gender equality, more property is being held jointly, a practice that is encouraged by tax laws. Since loans are granted on the basis of property ownership and level of employment, women have less access to credit and loans than men. To correct this, government loans are available to low-income women for enterprise start-ups. The rate of mobile phone usage is very high, with females close to males in access rates. In contrast to other countries, women are more likely than men to own smartphones in the country, probably because even though women’s Internet use is high, it is lower than that of men. Women have less access to private transport, with one-third of women commuting on foot, nearly twice the rate of men. Half of male workers travel by car or van, while women are more likely to travel by bus.
Dimension 5: Women's agency. Although the percentage of female members in the national assembly remains low at 13.7%, this is more than double the representation in 2000, and the result of a 2004 law requiring 50% quotas in proportional representation. At the district level, female representation is almost non-existent at 5.7%. Women make up a small share of cabinet members: 17.6% of ministers where legislative gender quotas apply. Where such quotas do not apply, at the deputy and vice-minister level, none are female. The share of women in decision-making positions in the civil service and political parties is also very low. Contraceptive prevalence is high, with nearly 80% of women using any method – among the highest in the world.

Dimension 6: Opportunity and capability: Female literacy is almost universal in the country at 97% (and 5.5% higher than rates for males). There is complete parity between girls and boys at elementary to high school levels, with a slight drop off for females in higher education – with nevertheless a very high rate of tertiary participation in comparison to the global average, of over 2/3 for both males and females. The gender gap at this level continues to narrow, but overall, girls average 10.5 years of formal education compared to 12 years for boys.

An interesting gender disparity in vocational training shows females participating in on-the-job training at a much lower rate than their representation in the labor force would indicate, while comprising 60% of enrollments in vocational training for the unemployed. This implies that women are eager for training opportunities but may not be given that opportunity by their employers. The government also runs short-term training to encourage housewives to engage in economic opportunities, as well as a number of other programs that target women’s entry and re-entry into the labor force.
**Dimension 7: Enabling Policy Environment.** The Ministry of Gender Equality was established – relatively late compared to other countries – in 2001. Since 2002 when government policy began actively to support women’s participation in engineering, science and technology, the share of women in almost all aspects of S&T study – research, employment and government representation – has increased. The government has also taken positive steps to facilitate work-life balance for working women, with provisions for parental leave for husbands and shortened working hours for mothers with young children. Since 2006 there has been an affirmative action policy on women’s employment to eradicate discrimination in employment and advancement. Subsidies for childcare are also provided, based on family income. The country has ratified CEDAW. In 2007, the government established the Third Basic Plan for Women’s Policies (2008-2012) with the vision of ‘a society with sustainable gender equality,’ and set up the goals of ‘women’s empowerment’, ‘balance between work and life’ and ‘respect for diversity and differences’. It also instituted gender impact assessment (in 2005) and gender-responsive budgeting (in 2010). Legislation stipulates that gender be a main unit of analysis in all national and local government statistics.

**Dimension 8: Women in Knowledge Society Decision Making.** Although it remains very low at 9.4%, the share of women legislators and senior officials and managers has been increasing since 2004. Women are particularly absent as chief executives and senior government officials at 3.5%. At 1%, the rate of female representation on boards of major companies is one of the world’s lowest.
Dimension 9: Women in the knowledge economy. The national labor market continues to depend upon male workers in most positions. Though female employers are inclined to hire more women than do male employers, the general tendency is a preference for males. As in most other countries, women predominate in health, social welfare and education employment. They comprise fewer than 10% of engineering professionals and one-eighth of those in working in ICT – a figure which has been falling. Within education, women are far more likely to be teaching at early childhood and primary levels. Nearly 40% of women lack even basic computer skills.

Dimension 10: Women in S&T innovation systems. Despite improvements in women’s status over the last 10 years – a result of enlightened law and policy as well as increases in women’s educational enrolments – women continue to participate at low levels in the realm of science, technology and innovation. The situation is worse in the private sector – with women almost entirely absent in STI related positions and industries – because national equality laws tend not to cover private enterprise. In all aspects of engineering women are poorly represented. As university undergraduates, women comprise 14% (reflecting a recent rise in numbers) of students in contrast to natural sciences, where they are 44% of those enrolled. In professional engineering jobs, women make up 11.3% of the STI workforce, compared to 31.4% in scientific professions. Participation of females is dismally low in engineering research (8.7%) and in university teaching positions (4.9%). In general women’s levels of computer skills are lower than men’s. In all these fields the figures for women’s participation are well below the OECD averages. There is no significant international brain drain of women from the country, but there is a domestic brain drain in the number of educated women in STI who do not enter the labor force. Government-implemented equalization of education opportunities provides some potential for increasing these low numbers.
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

Summary Data

Profile Chart: Republic of Korea, 2010