THE SITUATION OF WOMEN IN STEM IN VIETNAM

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Senegal

Area: 196,712 km^2

Population: 17,196,308 (2022)

Vietnam

Area: 331,699 km^2

Population: 103,808,319 (2022)

Vietnam

Flag

Emblem

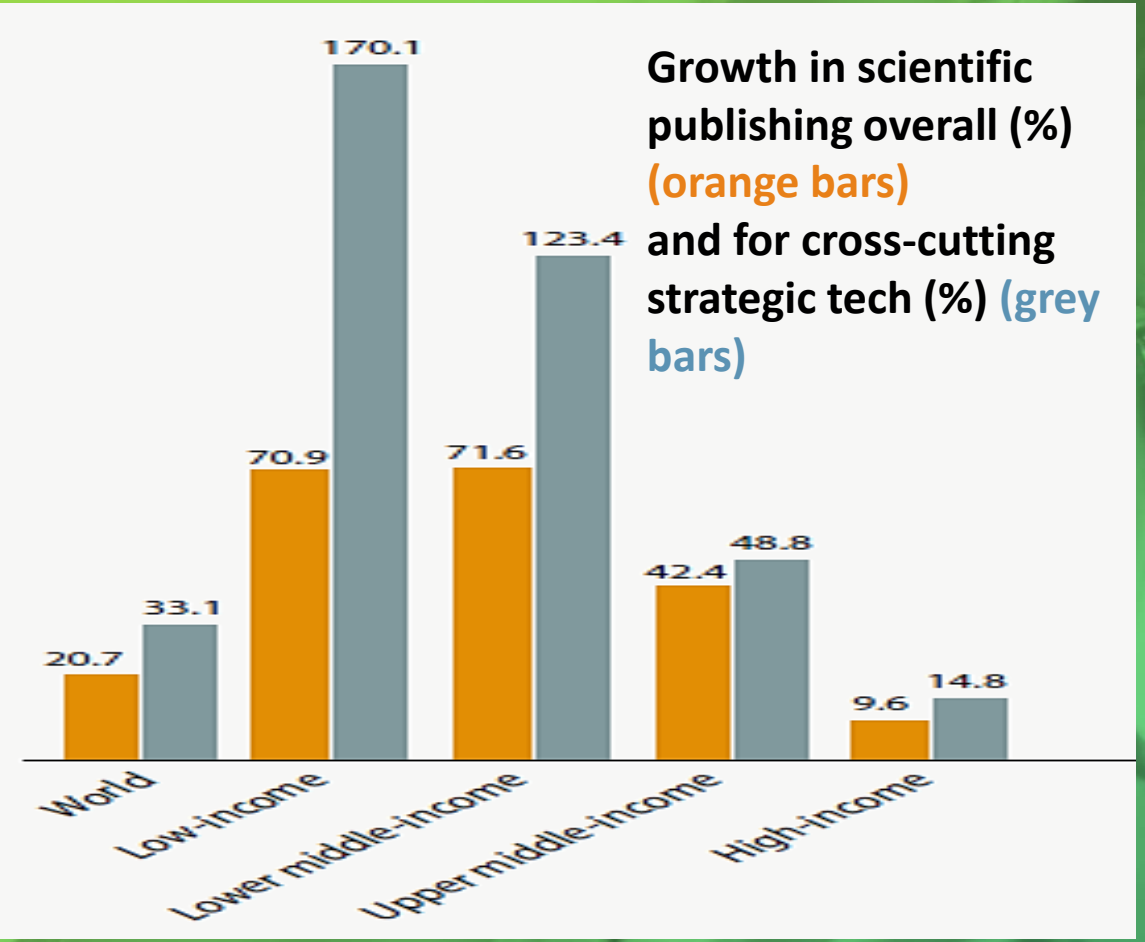
Education

- Literacy of population: 94.52% in 2022
- Most universities are in Hanoi and Ho Chi Minh City
- Vietnam is among the countries with the largest share of household contribution to total education spending
- Basic education in the country is relatively free for the poor (very low tuition fees)
- Vietnam's school enrolment is among the highest in the world

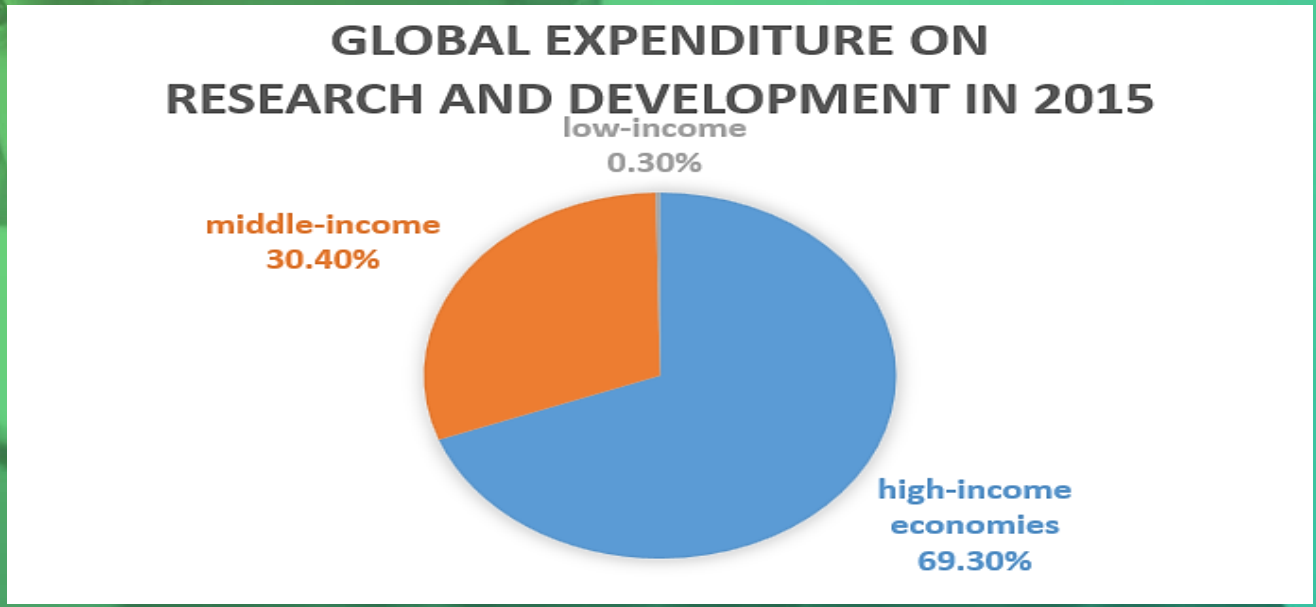
Science and technology

- Total state spending on science and technology ~ 0.45% of GDP
- 44th in the Global Innovation Index in 2021
- Scientific publications increased at a rate above the average for Southeast Asia
- Publications focus mainly on life sciences, physics and engineering

Growth in scientific publishing, 2015–2019



- Low- and lower middle-income countries show strongest growth
- Output highest for **artificial intelligence**, **energy** and **materials science**



- Developing high-quality education in STEM fields, especially for developing countries, would be a suitable direction that develop a foundational to sustainable development

UNESCO Science Report (2015 & 2021)

Science Technology Engineering Math

Gender imbalance in science and engineering

Women remain a minority in:

- ❖ digital information technology,
- ❖ computing,
- ❖ physics,
- ❖ mathematics
- ❖ engineering.

In academia, female researchers

- have shorter, less well-paid careers,
- obtain less research funding than men.

In industry, women underrepresented in company leadership and technical roles.

- ❖ 53% female bachelor's and master's graduates
- ❖ 44% female PhDs
- ❖ 33% female researchers
- ❖ 12% women in academies of science
- ❖ 2% venture capital for led start-ups

UNESCO Science Report (2021) - The race against time for smarter development

Study: STEM education and outcomes in Vietnam

Methods

- Uses a dataset of 4967 observations of junior high school students from a rural area in a transition economy until July 2018.
- Identifies the association between gender, socio-economic status, and students' STEM academic achievements

Results

- Gender has negligible correlation with students' STEM results at schools.
- Female students can achieve better results than male students.
- Students with better family educational and economical background tend to achieve better results.
- Students with one sibling are correlated with higher study results.

Ho, M.T., La, V.P., Nguyen, M.H., Pham, T.H., Vuong, T.T., Vuong, H.M., Pham, H.H., Hoang, A.D. and Vuong, Q.H., 2020. An analytical view on STEM education and outcomes: Examples of the social gap and gender disparity in Vietnam. *Children and Youth Services Review*, *119*, p.105650

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- The result goes against a common stereotype in a culture that views males as naturally more attracted to natural science and more capable at it than females.
  - ❖ Common cultural stereotypes and biased practices in classroom and workplace devalue women's competence and creates environments that discourage female's pursuing and continuing STEM careers.

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  - ❖ Common cultural stereotypes and biased practices in classroom and workplace devalue women's competence and creates environments that discourage female's pursuing and continuing STEM careers.
- Parental resources tend to favor boys over girls in many Asian cultures, especially in a deeply Confucian culture such as Vietnam in which men had more opportunities and privileges than women.
  - ❖ The reverse gender gap in Vietnam education might result from the reality that women have to work harder for the same outcomes compared to men.

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SOLUTION

How can schools and teachers encourage young women to pursue science, technology, engineering, and math (STEM)?

- Dismantling Gender Stereotypes
- Female Role Models
- STEAM-Based Classroom Projects
  - IEEE-NPSS REALTIME SCHOOLS
- Targeted Outreach at All Grade Levels
- Grants & Fellowships
- WOMEN IN STEM Organizations
  - WOMEN IN ENGINEERING

THANK YOU