

# WiSTEM<sup>2</sup>D Market Insights

BRAZIL

## Women in STEM<sup>2</sup>D

Launched in 2015, Johnson & Johnson's WiSTEM<sup>2</sup>D (**W**omen in **S**cience, **T**echnology, **E**ngineering, **M**ath, **M**anufacturing, and **D**esign) initiative is a multifaceted approach that supports and inspires girls and women of all ages in their pursuit of STEM<sup>2</sup>D studies and careers.

**Market Insights** was developed by FHI 360 to arm volunteers with critical, country-specific data and information that can be used in their efforts to inform and broaden understanding among young girls and women about the endless possibilities of STEM<sup>2</sup>D.

## Why Women in STEM<sup>2</sup>D?

### LACK OF GENDER DIVERSITY

For many girls who start out strong in mathematics and science, interest wanes along the way. Clear evidence supports the fact that girls and young women receive social cues—regularly reinforced in conscious and subconscious ways by parents, teachers, university professors, and even managers on the job—that they cannot compete with male counterparts and, therefore, should not pursue their goals in STEM fields. The result is what is often referred to as a leaky pipeline, in which talented girls eventually steer away from careers in STEM and pursue work in fields where they will receive more positive reinforcement and will not have to fight as hard to carve out their places in the world.

Women represent a significant percentage of STEM graduates and researchers in Brazil. Forty-two percent (**42%**) of graduates with bachelor's degrees in STEM are women,<sup>1</sup> and UNESCO estimates that women represent **approximately half (45–55%) of all researchers.**<sup>2</sup> **The percentage of women holding degrees in science at the doctoral level in 2015 was 54%**—up 10 percent over the past two decades.<sup>3</sup>

At the university level, however, representation of women varies in STEM disciplines. Women comprise just **17% of social/behavioral science** graduates, **20% of mathematics/computer science** graduates, **32% of agricultural science** graduates, and **28% of engineering/manufacturing** graduates. Women are much more highly represented in the **physical sciences (62%).**<sup>4</sup>

<sup>1</sup> National Science Board. First university degrees, by field, sex, and selected region, country, or economy: 2014 or most recent year. See: <https://www.nsf.gov/statistics/seind14/content/chapter-2/at02-38.pdf>

<sup>2</sup> United Nations Educational, Scientific and Cultural Organization (UNESCO). (2017). Women in science. See: <http://uis.unesco.org/sites/default/files/documents/fs43-women-in-science-2017-en.pdf>

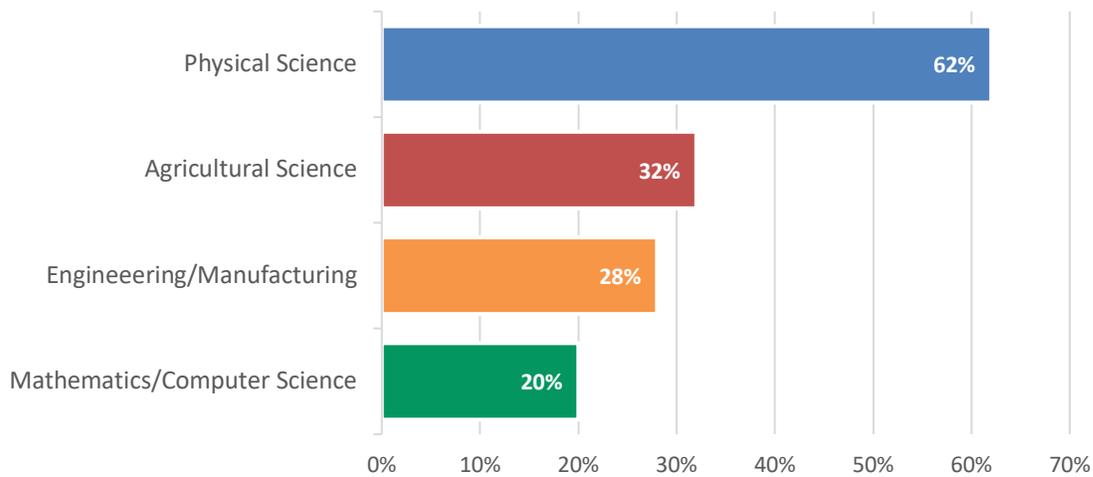
<sup>3</sup> DeNegri, F. (2015). Women in science: Still invisible? In A snapshot of the status of women in Brazil 2019. Washington, DC: Brazil Institute, The Wilson Center. See: [https://www.scribd.com/document/408175159/The-Status-of-Women-in-Brazil-2019#download&from\\_embed](https://www.scribd.com/document/408175159/The-Status-of-Women-in-Brazil-2019#download&from_embed)

<sup>4</sup> National Science Board. First university degrees, by field, sex, and selected region, country, or economy: 2014 or most recent year. See: <https://www.nsf.gov/statistics/seind14/content/chapter-2/at02-38.pdf>

### PROPORTION OF WOMEN WITH STEM HIGHER EDUCATION DEGREES

TYPE OF HIGHER EDUCATION DEGREE	PERCENT WOMEN
Bachelor's Graduates in STEM	42%
Doctoral Graduates in STEM	54%

### PROPORTION OF WOMEN WITH BACHELOR'S DEGREES IN STEM DISCIPLINES



Although Brazilian women are well-represented in tertiary STEM education, they are not well-recognized in STEM careers. Women make up only 24% of recipients of a Brazilian government grant awarded to the most productive scientists in the country and only 14% of the Brazilian Academy of Sciences members. Several government programs aim to encourage and support women to enter science, including the *Meninas na Ciência* (Young Women in Science), which is fighting gender stereotypes and provides graduate training to women to teach astronomy, robotics, and physics in public schools, to encourage more young women to enter STEM fields.<sup>5</sup>

<sup>5</sup> DeNegri, F. (2015). Women in science: Still invisible? In A snapshot of the status of women in Brazil 2019. Washington, DC: Brazil Institute, The Wilson Center. See: [https://www.scribd.com/document/408175159/The-Status-of-Women-in-Brazil-2019#download&from\\_embed](https://www.scribd.com/document/408175159/The-Status-of-Women-in-Brazil-2019#download&from_embed)

## Demand is Growing

The Brazilian economy is ranked **9th in the world** and is predicted to remain steady at 9th up to 2023.<sup>6</sup> The labor force in Brazil currently includes 92.95 million people,<sup>7</sup> and according to the World Bank, 43% are women.<sup>8</sup> Thirty-nine percent of the population is below 24 years of age.<sup>9</sup> Experts indicate that, in the next decade, almost all of the occupations in the fastest-growing sectors will require at least some background in STEM. The three main economic sectors and largest companies include:

### MAIN ECONOMIC SECTORS

SECTOR	SHARE OF EMPLOYMENT <sup>10</sup>	SHARE OF GROSS DOMESTIC PRODUCT <sup>11</sup>		
		2007	2012	2017
Agriculture	9%	4%	4%	5%
Industry	20%	23%	22%	18%
Services	70%	58%	59%	63%

### LARGEST COMPANIES<sup>12</sup>

COMPANY	SECTOR	MARKET CAPITALIZATION (U.S. DOLLARS)
Petroleo Brasileiro S.A. Petrobras	Oil & Gas	\$98 billion
Itau Unibanco	Banking	\$85 billion
Banco Bradesco	Banking	\$75 billion
Ambev S.A.	Brewing & Alcoholic Beverages	\$73 billion
Vale Company	Metals and Mining	\$69 billion
Banco Santander Brasil	Banking	\$44 billion
Banco do Brasil	Banking	\$39 billion
ITAUSA Investimentos Itau	Financial/Investing	\$29 billion
JBS	Meat Processing	\$16 billion
Pageseguro Digital	Technology	\$13 billion

<sup>6</sup> Statistics Times. (2019). List of Countries by projected GDP. See: <http://statisticstimes.com/economy/countries-by-projected-gdp.php>

<sup>7</sup> Trading Economics. (2019). Brazil employed persons. See: <https://tradingeconomics.com/brazil/employed-persons>

<sup>8</sup> The World Bank. (2018). Labor force, female (% of total labor force). See: <https://data.worldbank.org/indicator/SL.TLF.TOTL.FE.ZS>

<sup>9</sup> Index Mundi. (2018). Brazil demographics profile 2018. See: [https://www.indexmundi.com/brazil/demographics\\_profile.html](https://www.indexmundi.com/brazil/demographics_profile.html)

<sup>10</sup> Statista (2018). Brazil. Distribution of employment by economic sector: 2008-2018. See: <https://www.statista.com/statistics/271042/employment-by-economic-sector-in-brazil/>

<sup>11</sup> Statista. (2017). Brazil: Distribution of gross domestic product (GDP) across economic sectors from 2007 to 2017." See: <https://www.statista.com/statistics/254407/share-of-economic-sectors-in-the-gdp-in-brazil/>

<sup>12</sup> Value Today. (2019). Top Brazil companies by market capitalization as on July-01-2019. See: <https://www.value.today/headquarters/brazil>

# The Diversity of STEM<sup>2</sup>D Careers

## STEM<sup>2</sup>D CAREERS COVER A BROAD SPECTRUM OF OCCUPATIONS

Professionals in STEM occupations generally enjoy higher average salaries than those employed in non-STEM jobs; however, within each STEM field, there is wide variation. Depending on where their interests lie, girls can opt for one of hundreds of different careers. Average 2019 salaries in Sao Paulo for STEM jobs are outlined in the table below.

### AVERAGE SALARY RANGES FOR STEM JOBS<sup>13</sup>

OCCUPATION	SALARY RANGE (U.S. DOLLARS, 2019)	
	MINIMUM	MAXIMUM
<b>BANKING/FINANCE</b>		
Accountant	\$25,804	\$49,597
Account Manager	\$17,739	\$54,331
Data Scientist	\$32,047	\$65,716
<b>ENGINEERING/MANUFACTURING</b>		
Civil Engineer	\$17,172	\$58,154
Electrical Engineer	\$20,803	\$90,458
System Administrator	\$16,722	\$33,807
<b>SCIENCE</b>		
Nurse	\$13,798	\$20,688
Pharmacist	\$27,594	\$41,592
Physician	\$32,850	\$106,412
Research Scientist	\$21,018	\$53,963

## Get Involved!

### USE YOUR TALENT FOR GOOD

There are many ways to engage with this initiative—whether you want to help plan an event, share your career journey, present material in a school setting, facilitate a hands-on activity with students, organize a learning experience at your company for girls, or become part of a strategy team. With more than 1,600 volunteers to date, we are excited to grow this movement with your support and participation.

### TO LEARN MORE, VISIT [STEM2D.ORG](https://stem2d.org)

<sup>13</sup> Teleport. (2018). Salaries in Sao Paulo, Brazil. See: <https://teleport.org/cities/sao-paulo/salaries/#salaries>