

# GLOBAL INNOVATION INDEX 2019

## EGYPT

**92nd** Egypt ranks 92nd among the 129 economies featured in the GII 2019.

The Global Innovation Index (GII) is a ranking of world economies based on innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.

The following table shows the rankings of Egypt over the past three years, noting that data availability and the GII model influence year-on-year comparisons of the GII ranks. The confidence interval for Egypt's ranking in the GII 2019 is between 83 and 96.

### Egypt's Rankings, 2017 - 2019

|             | GII | Innovation<br>Inputs | Innovation<br>Outputs |
|-------------|-----|----------------------|-----------------------|
| <b>2019</b> | 92  | 106                  | 74                    |
| <b>2018</b> | 95  | 105                  | 79                    |
| <b>2017</b> | 105 | 106                  | 97                    |

- Egypt performs better in Innovation Outputs than Inputs.
- This year Egypt ranks 106th in Innovation Inputs, worse than last year and the same compared to 2017.
- As for Innovation Outputs, Egypt ranks 74th. This position is better than last year and compared to 2017.

**14th** Egypt ranks 14th among the 26 lower middle-income economies.

**17th** Egypt ranks 17th among the 19 economies in Northern Africa and Western Asia.

Egypt moves up three positions, taking the 92nd spot in the GII 2019. Its improvement this year is largely due to its relative performance and less so to new GII data or methods (page 9).

The most notable improvements this year concern the indicators of the GII that capture the sophistication of the local market, and especially its credit and investment environment. Here indicators such as Ease of getting credit, Microfinance loans, Ease of protecting minority investors, and Market capitalization improve by several positions. Other indicators that gain several spots include State of cluster development, Patent families in two or more offices, ICT services imports, PCT patents by origin, and Printing & other media.

The Egyptian innovation profile presents a number of areas of relative strength, including in indicators Quality of scientific publications, Quality of universities, Knowledge-intensive employment, Labor productivity growth, and Computer software spending (pages 6 and 7).

Despite these achievements, areas of opportunity still remain. Several of them are in the GII areas that measure the quality of the institutional framework for innovation and the degree of sophistication of the business sector. These include indicators such as Regulatory quality and Firms offering formal training. Indicators Graduates in science & engineering and Global R&D companies are other notable relative weaknesses for this country (pages 6 and 7).

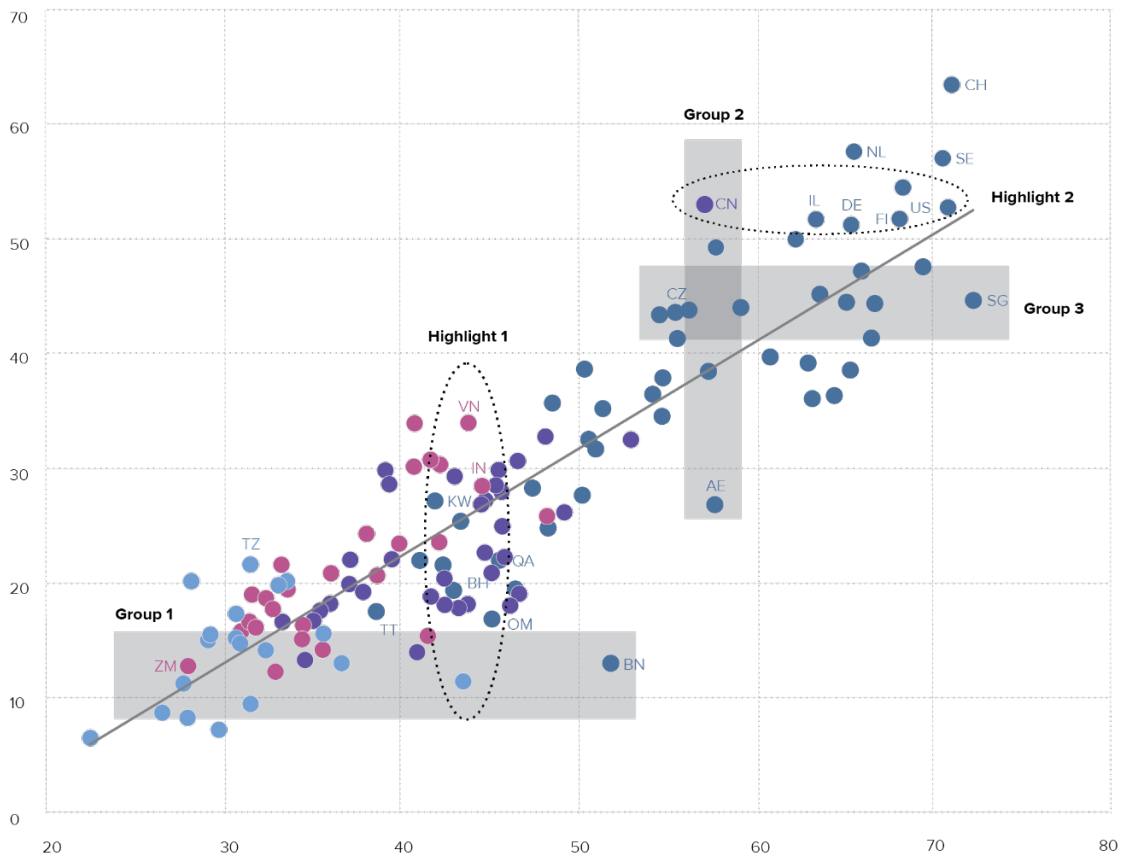


# EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

The chart below shows the relationship between innovation inputs and innovation outputs, indicating which economies best translate innovation inputs into innovation outputs. Economies appearing above the line are effectively translating their costly innovation investments into more and higher-quality outputs. In contrast, those below the line are not effectively translating innovation inputs into outputs.

Egypt produces more innovation outputs relative to its level of innovation investments.

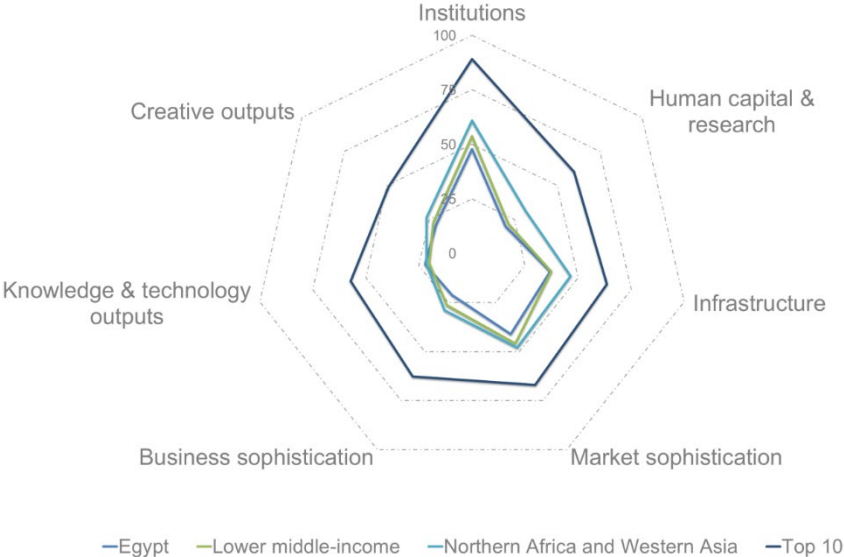
**Innovation input/output performance by income group, 2019**



- ▲ Output score
  - ▶ Input score
  - High income
  - Upper-middle income
  - Lower-middle income
  - Low income
  - Fitted values
- 
- |                         |                   |                        |                                |
|-------------------------|-------------------|------------------------|--------------------------------|
| AE United Arab Emirates | CZ Czech Republic | NL Netherlands         | TZ United Republic of Tanzania |
| BH Bahrain              | DE Germany        | OM Oman                | US United States of America    |
| BN Brunei Darussalam    | FI Finland        | QA Qatar               | VN Viet Nam                    |
| CH Switzerland          | IL Israel         | SE Sweden              | ZM Zambia                      |
| CN China                | IN India          | SG Singapore           |                                |
|                         | KW Kuwait         | TT Trinidad and Tobago |                                |

# BENCHMARKING EGYPT TO OTHER LOWER MIDDLE-INCOME ECONOMIES AND THE NORTHERN AFRICA AND WESTERN ASIA REGION

**Egypt’s scores in the seven GII pillars**



## Lower middle-income economies

Egypt has high scores in one out of the seven GII pillars: Knowledge & technology outputs, which is above the average of the lower middle-income group.

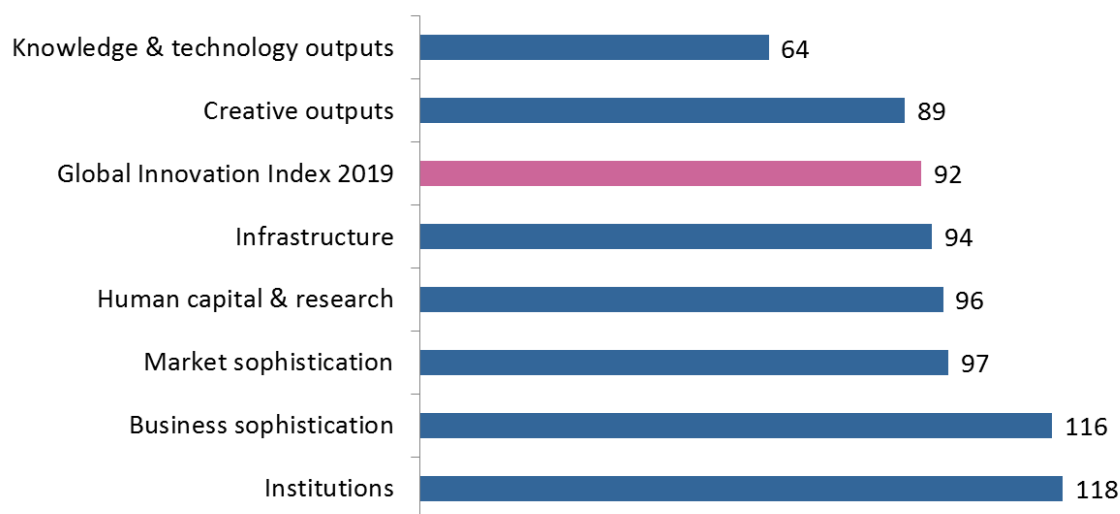
## Northern Africa and Western Asia Region

Compared to other economies in the Northern Africa and Western Asia region, Egypt performs above average in the same GII pillar - Knowledge & technology outputs.

Top ranks are found in areas such as Research and development (R&D), Ecological sustainability, Trade, competition, & market scale, and Knowledge impact, where the country ranks in the top 60 worldwide.

## OVERVIEW OF EGYPT'S RANKINGS IN THE 7 GII AREAS

Egypt performs the best in Knowledge & technology outputs and its weakest performance is in Institutions.



\*The highest possible ranking in each pillar is 1.

## EGYPT'S INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of Egypt's strengths and weaknesses in the GII 2019.

| Strengths |  |      |
|-----------|--|------|
| Code      | Indicator name                                     | Rank |
| 2.3.4     | QS university ranking, average score top 3*        | 48   |
| 3.3.1     | GDP/unit of energy use                             | 39   |
| 4.3       | Trade, competition, & market scale                 | 48   |
| 4.3.3     | Domestic market scale, bn PPP\$                    | 21   |
| 5.1.1     | Knowledge-intensive employment, %                  | 43   |
| 5.2.2     | State of cluster development*                      | 38   |
| 6.1.5     | Citable documents H index                          | 48   |
| 6.2       | Knowledge impact                                   | 32   |
| 6.2.1     | Growth rate of PPP\$ GDP/worker, %, 3-year average | 32   |
| 6.2.3     | Computer software spending, % GDP                  | 21   |
| 7.2.4     | Printing & other media, % manufacturing            | 35   |
| 7.2.5     | Creative goods exports, % total trade              | 41   |

| Weaknesses |  |      |
|------------|--|------|
| Code       | Indicator name                             | Rank |
| 1          | Institutions                               | 118  |
| 1.2        | Regulatory environment                     | 120  |
| 1.2.1      | Regulatory quality*                        | 120  |
| 1.2.3      | Cost of redundancy dismissal, salary weeks | 121  |
| 2.2.2      | Graduates in science & engineering, %      | 99   |
| 2.3.3      | Global R&D companies, top 3, in mn US\$    | 43   |
| 3.2        | General infrastructure                     | 116  |
| 3.2.3      | Gross capital formation, % GDP             | 118  |
| 4.2        | Investment                                 | 119  |
| 5          | Business sophistication                    | 116  |
| 5.1.2      | Firms offering formal training, % firms    | 89   |
| 5.2.3      | GERD financed by abroad, %                 | 101  |
| 5.2.4      | JV-strategic alliance deals/bn PPP\$ GDP   | 98   |
| 7.2.3      | Entertainment & Media market/th pop. 15-69 | 61   |
| 7.3.2      | Country-code TLDs/th pop. 15-69            | 123  |

## STRENGTHS

- GII strengths for Egypt are found in six of the seven GII pillars.
- Several of these strengths are in Knowledge & technology outputs (64). Here Egypt's strengths are sub-pillar Knowledge impact (32) and indicators Quality of scientific publications (48), Labor productivity growth (32), and Computer software spending (21).
- In Human capital & research (96), Egypt exhibits strength in indicator Quality of universities (48).
- In Infrastructure (94), Egypt shows strength in indicator GDP per unit of energy use (39).
- In Market sophistication (97), sub-pillar Trade, competition, & market scale (48) and its indicator Domestic market scale (21) are relative strengths for Egypt.
- In Business sophistication (116), indicators Knowledge-intensive employment (43) and State of cluster development (38) are GII strengths for the country.
- In Creative outputs (89), Egypt's strengths are found in two indicators: Printing & other media (35) and Creative goods exports (41).

## WEAKNESSES

- Egypt's weaknesses in the GII are found in all GII pillars, except for Knowledge and technology outputs (64).
- Pillars Institutions (118) and Business sophistication (116) are GII weaknesses for Egypt.
- In Institutions (118), additional weaknesses are sub-pillar Regulatory environment (120) and two of its indicators - Regulatory quality (120) and Cost of redundancy dismissal (121).
- In Business sophistication (116), GII weaknesses are indicators Firms offering formal training (89), R&D financed by abroad (101), and JV-strategic alliance deals (98).
- In Human capital & research (96), relative weaknesses are found in indicators Graduates in science & engineering (99) and Global R&D companies (43).
- In Infrastructure (94), Egypt's weaknesses are sub-pillar General infrastructure (116) and its indicator Gross capital formation (118).
- In Market sophistication (97), sub-pillar Investment (119) is a relative weakness for the country.
- In Creative outputs (89), GII weaknesses for Egypt are indicators Entertainment & Media market (61) and Country-code TLDs (123).

| Output rank                                    | Input rank  | Income              | Region      | Population (mn) | GDP, PPP\$     | GDP per capita, PPP\$ | GII 2018 rank |
|--|---|---------------------|-------------|-----------------|----------------|-----------------------|---------------|
| <b>74</b>                                      | <b>106</b>  | <b>Lower middle</b> | <b>NAWA</b> | <b>99.4</b>     | <b>1,297.0</b> | <b>13,366.5</b>       | <b>95</b>     |
|  |   |                     |             | Score/Value     | Rank           |                       |               |
| <b>INSTITUTIONS.....</b>                       |   |                     |             | <b>47.9</b>     | <b>118</b>     |                       |               |
| <b>1.1</b>                                     | <b>Political environment.....</b>                               |                     | <b>39.7</b> | <b>106</b>      |                |                       |               |
| 1.1.1  | Political and operational stability*.....                       |                     | 56.1        | 105             |                |                       |               |
| 1.1.2  | Government effectiveness*.....                                  |                     | 31.5        | 104             |                |                       |               |
| <b>1.2</b>                                     | <b>Regulatory environment.....</b>                              |                     | <b>40.8</b> | <b>120</b>      |                |                       |               |
| 1.2.1  | Regulatory quality*.....  |                     | 18.8        | 120             | ○ ◇            |                       |               |
| 1.2.2  | Rule of law*.....   |                     | 32.2        | 95              |                |                       |               |
| 1.2.3  | Cost of redundancy dismissal, salary weeks.....                 |                     | 36.8        | 121             | ○              |                       |               |
| <b>1.3</b>                                     | <b>Business environment.....</b>                                |                     | <b>63.2</b> | <b>90</b>       |                |                       |               |
| 1.3.1  | Ease of starting a business*.....                               |                     | 84.1        | 84              |                |                       |               |
| 1.3.2  | Ease of resolving insolvency*.....                              |                     | 42.3        | 89              |                |                       |               |
| <b>HUMAN CAPITAL &amp; RESEARCH.....</b>       |   |                     |             | <b>19.7</b>     | <b>96</b>      |                       |               |
| <b>2.1</b>                                     | <b>Education.....</b>   |                     | <b>37.0</b> | <b>94</b>       |                |                       |               |
| 2.1.1  | Expenditure on education, % GDP.....                            |                     | 3.8         | 89              |                |                       |               |
| 2.1.2  | Government funding/pupil, secondary, % GDP/cap... ..            |                     | 14.0        | 86              |                |                       |               |
| 2.1.3  | School life expectancy, years.....                              |                     | 13.1        | 80              |                |                       |               |
| 2.1.4  | PISA scales in reading, maths, & science.....                   |                     | n/a         | n/a             |                |                       |               |
| 2.1.5  | Pupil-teacher ratio, secondary.....                             |                     | 15.2        | 68              |                |                       |               |
| <b>2.2</b>                                     | <b>Tertiary education.....</b>                                  |                     | <b>11.4</b> | <b>108</b>      |                |                       |               |
| 2.2.1  | Tertiary enrolment, % gross.....                                |                     | 34.4        | 77              |                |                       |               |
| 2.2.2  | Graduates in science & engineering, %.....                      |                     | 11.2        | 99              | ○ ◇            |                       |               |
| 2.2.3  | Tertiary inbound mobility, %.....                               |                     | 1.8         | 77              |                |                       |               |
| <b>2.3</b>                                     | <b>Research &amp; development (R&amp;D).....</b>                |                     | <b>10.7</b> | <b>55</b>       |                |                       |               |
| 2.3.1  | Researchers, FTE/mn pop.....                                    |                     | 669.4       | 61              |                |                       |               |
| 2.3.2  | Gross expenditure on R&D, % GDP.....                            |                     | 0.6         | 51              | ◆              |                       |               |
| 2.3.3  | Global R&D companies, avg. exp. top 3, mn US\$.....             |                     | 0.0         | 43              | ○ ◇            |                       |               |
| 2.3.4  | QS university ranking, average score top 3*.....                |                     | 21.9        | 48              | ◆ ◆            |                       |               |
| <b>INFRASTRUCTURE.....</b>                     |   |                     |             | <b>36.8</b>     | <b>94</b>      |                       |               |
| <b>3.1</b>                                     | <b>Information &amp; communication technologies (ICTs).....</b> |                     | <b>49.4</b> | <b>96</b>       |                |                       |               |
| 3.1.1  | ICT access*.....  |                     | 55.6        | 78              |                |                       |               |
| 3.1.2  | ICT use*.....   |                     | 34.7        | 95              |                |                       |               |
| 3.1.3  | Government's online service*.....                               |                     | 53.5        | 101             |                |                       |               |
| 3.1.4  | E-participation*.....   |                     | 53.9        | 100             |                |                       |               |
| <b>3.2</b>                                     | <b>General infrastructure.....</b>                              |                     | <b>21.1</b> | <b>116</b>      | ○              |                       |               |
| 3.2.1  | Electricity output, kWh/mn pop.....                             |                     | 2,030.8     | 76              | ◆              |                       |               |
| 3.2.2  | Logistics performance*.....                                     |                     | 35.6        | 66              |                |                       |               |
| 3.2.3  | Gross capital formation, % GDP.....                             |                     | 15.5        | 118             | ○ ◇            |                       |               |
| <b>3.3</b>                                     | <b>Ecological sustainability.....</b>                           |                     | <b>39.9</b> | <b>55</b>       | ◆              |                       |               |
| 3.3.1  | GDP/unit of energy use.....                                     |                     | 11.2        | 39              | ●              |                       |               |
| 3.3.2  | Environmental performance*.....                                 |                     | 61.2        | 59              | ◆              |                       |               |
| 3.3.3  | ISO 14001 environmental certificates/bn PPP\$ GDP..             |                     | 0.6         | 81              |                |                       |               |
| <b>MARKET SOPHISTICATION.....</b>              |   |                     |             | <b>41.0</b>     | <b>97</b>      |                       |               |
| <b>4.1</b>                                     | <b>Credit.....</b>  |                     | <b>25.8</b> | <b>103</b>      |                |                       |               |
| 4.1.1  | Ease of getting credit*.....                                    |                     | 65.0        | 54              |                |                       |               |
| 4.1.2  | Domestic credit to private sector, % GDP.....                   |                     | 28.5        | 99              |                |                       |               |
| 4.1.3  | Microfinance gross loans, % GDP.....                            |                     | 0.1         | 58              |                |                       |               |
| <b>4.2</b>                                     | <b>Investment.....</b>  |                     | <b>30.8</b> | <b>119</b>      | ○              |                       |               |
| 4.2.1  | Ease of protecting minority investors*.....                     |                     | 58.3        | 68              |                |                       |               |
| 4.2.2  | Market capitalization, % GDP.....                               |                     | 15.5        | 63              |                |                       |               |
| 4.2.3  | Venture capital deals/bn PPP\$ GDP.....                         |                     | 0.0         | 63              |                |                       |               |
| <b>4.3</b>                                     | <b>Trade, competition, &amp; market scale.....</b>              |                     | <b>66.4</b> | <b>48</b>       | ●              |                       |               |
| 4.3.1  | Applied tariff rate, weighted avg., %.....                      |                     | 7.4         | 101             |                |                       |               |
| 4.3.2  | Intensity of local competition*.....                            |                     | 65.7        | 77              |                |                       |               |
| 4.3.3  | Domestic market scale, bn PPP\$.....                            |                     | 1,297.0     | 21              | ◆ ◆            |                       |               |
| <b>BUSINESS SOPHISTICATION.....</b>            |   |                     |             | <b>21.2</b>     | <b>116</b>     | ○ ◇                   |               |
| <b>5.1</b>                                     | <b>Knowledge workers.....</b>                                   |                     | <b>21.1</b> | <b>106</b>      |                |                       |               |
| 5.1.1  | Knowledge-intensive employment, %.....                          |                     | 30.3        | 43              | ◆ ◆            |                       |               |
| 5.1.2  | Firms offering formal training, % firms.....                    |                     | 10.0        | 89              | ○ ◇            |                       |               |
| 5.1.3  | GERD performed by business, % GDP.....                          |                     | 0.0         | 76              |                |                       |               |
| 5.1.4  | GERD financed by business, %.....                               |                     | 5.4         | 79              |                |                       |               |
| 5.1.5  | Females employed w/advanced degrees, %.....                     |                     | 5.5         | 89              |                |                       |               |
| <b>5.2</b>                                     | <b>Innovation linkages.....</b>                                 |                     | <b>17.5</b> | <b>110</b>      |                |                       |               |
| 5.2.1  | University/industry research collaboration*.....                |                     | 30.0        | 106             |                |                       |               |
| 5.2.2  | State of cluster development*.....                              |                     | 53.9        | 38              | ◆ ◆            |                       |               |
| 5.2.3  | GERD financed by abroad, %.....                                 |                     | 0.0         | 101             | ○              |                       |               |
| 5.2.4  | JV-strategic alliance deals/bn PPP\$ GDP.....                   |                     | 0.0         | 98              | ○              |                       |               |
| 5.2.5  | Patent families 2+ offices/bn PPP\$ GDP.....                    |                     | 0.0         | 88              |                |                       |               |
| <b>5.3</b>                                     | <b>Knowledge absorption.....</b>                                |                     | <b>24.9</b> | <b>103</b>      |                |                       |               |
| 5.3.1  | Intellectual property payments, % total trade.....              |                     | 0.4         | 71              |                |                       |               |
| 5.3.2  | High-tech imports, % total trade.....                           |                     | 6.8         | 73              |                |                       |               |
| 5.3.3  | ICT services imports, % total trade.....                        |                     | 1.1         | 68              |                |                       |               |
| 5.3.4  | FDI net inflows, % GDP.....                                     |                     | 2.6         | 69              |                |                       |               |
| 5.3.5  | Research talent, % in business enterprise.....                  |                     | 6.5         | 69              |                |                       |               |
| <b>KNOWLEDGE &amp; TECHNOLOGY OUTPUTS.....</b> |   |                     |             | <b>22.1</b>     | <b>64</b>      |                       |               |
| <b>6.1</b>                                     | <b>Knowledge creation.....</b>                                  |                     | <b>11.1</b> | <b>66</b>       |                |                       |               |
| 6.1.1  | Patents by origin/bn PPP\$ GDP.....                             |                     | 0.8         | 68              |                |                       |               |
| 6.1.2  | PCT patents by origin/bn PPP\$ GDP.....                         |                     | 0.0         | 81              |                |                       |               |
| 6.1.3  | Utility models by origin/bn PPP\$ GDP.....                      |                     | n/a         | n/a             |                |                       |               |
| 6.1.4  | Scientific & technical articles/bn PPP\$ GDP.....               |                     | 7.1         | 61              |                |                       |               |
| 6.1.5  | Citable documents H-index.....                                  |                     | 15.5        | 48              | ●              |                       |               |
| <b>6.2</b>                                     | <b>Knowledge impact.....</b>                                    |                     | <b>43.7</b> | <b>32</b>       | ●              |                       |               |
| 6.2.1  | Growth rate of PPP\$ GDP/worker, %.....                         |                     | 2.5         | 32              | ●              |                       |               |
| 6.2.2  | New businesses/th pop. 15-64.....                               |                     | n/a         | n/a             |                |                       |               |
| 6.2.3  | Computer software spending, % GDP.....                          |                     | 0.4         | 21              | ◆ ◆            |                       |               |
| 6.2.4  | ISO 9001 quality certificates/bn PPP\$ GDP.....                 |                     | 1.8         | 89              |                |                       |               |
| 6.2.5  | High- & medium-high-tech manufactures, %.....                   |                     | 0.2         | 52              |                |                       |               |
| <b>6.3</b>                                     | <b>Knowledge diffusion.....</b>                                 |                     | <b>11.6</b> | <b>94</b>       |                |                       |               |
| 6.3.1  | Intellectual property receipts, % total trade.....              |                     | n/a         | n/a             |                |                       |               |
| 6.3.2  | High-tech net exports, % total trade.....                       |                     | 0.1         | 113             |                |                       |               |
| 6.3.3  | ICT services exports, % total trade.....                        |                     | 1.2         | 73              |                |                       |               |
| 6.3.4  | FDI net outflows, % GDP.....                                    |                     | 0.1         | 102             |                |                       |               |
| <b>CREATIVE OUTPUTS.....</b>                   |   |                     |             | <b>21.1</b>     | <b>89</b>      |                       |               |
| <b>7.1</b>                                     | <b>Intangible assets.....</b>                                   |                     | <b>35.8</b> | <b>95</b>       |                |                       |               |
| 7.1.1  | Trademarks by origin/bn PPP\$ GDP.....                          |                     | 11.2        | 104             |                |                       |               |
| 7.1.2  | Industrial designs by origin/bn PPP\$ GDP.....                  |                     | 1.7         | 56              |                |                       |               |
| 7.1.3  | ICTs & business model creation*.....                            |                     | 61.0        | 59              |                |                       |               |
| 7.1.4  | ICTs & organizational model creation*.....                      |                     | 56.0        | 57              |                |                       |               |
| <b>7.2</b>                                     | <b>Creative goods &amp; services.....</b>                       |                     | <b>12.1</b> | <b>77</b>       |                |                       |               |
| 7.2.1  | Cultural & creative services exports, % total trade.....        |                     | 0.1         | 80              |                |                       |               |
| 7.2.2  | National feature films/mn pop. 15-69.....                       |                     | 0.6         | 93              |                |                       |               |
| 7.2.3  | Entertainment & Media market/th pop. 15-69.....                 |                     | 0.5         | 61              | ○              |                       |               |
| 7.2.4  | Printing & other media, % manufacturing.....                    |                     | 1.4         | 35              | ●              |                       |               |
| 7.2.5  | Creative goods exports, % total trade.....                      |                     | 1.1         | 41              | ●              |                       |               |
| <b>7.3</b>                                     | <b>Online creativity.....</b>                                   |                     | <b>0.7</b>  | <b>103</b>      |                |                       |               |
| 7.3.1  | Generic top-level domains (TLDs)/th pop. 15-69.....             |                     | 1.2         | 91              |                |                       |               |
| 7.3.2  | Country-code TLDs/th pop. 15-69.....                            |                     | 0.0         | 123             | ○              |                       |               |
| 7.3.3  | Wikipedia edits/mn pop. 15-69.....                              |                     | 2.5         | 97              |                |                       |               |
| 7.3.4  | Mobile app creation/bn PPP\$ GDP.....                           |                     | 0.1         | 82              |                |                       |               |

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; \* an index; † a survey question. ⊙ indicates that the economy's data are older than the base year; see Appendix II for details, including the year of the data, at <http://globalinnovationindex.org>. Square brackets [ ] indicate that the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level.



## DATA AVAILABILITY AND GII MODEL

The following tables list data that are missing or are outdated for Egypt.

Indicators Government funding per pupil and Cultural & creative services exports, which were not available in the GII 2018, become available this year. Indicator Intellectual property receipts was available in the GII 2018 but becomes unavailable in the GII 2019.

### Missing data

| Code  | Indicator name                                | Country year | Model year | Source   |
|-------|---|--------------|------------|--|
| 2.1.4 | PISA scales in reading, maths & science       | n/a          | 2015       | OECD Programme for International Student Assessment (PISA) |
| 6.1.3 | Utility models by origin/bn PPP\$ GDP         | n/a          | 2017       | World Intellectual Property Organization                   |
| 6.2.2 | New businesses/th pop. 15–64                  | n/a          | 2016       | World Bank   |
| 6.3.1 | Intellectual property receipts, % total trade | n/a          | 2017       | World Trade Organization                                   |

### Outdated data

| Code  | Indicator name                           | Country year | Model year | Source   |
|-------|--|--------------|------------|--|
| 2.1.1 | Expenditure on education, % GDP          | 2008         | 2015       | UNESCO Institute for Statistics                    |
| 2.2.1 | Tertiary enrolment, % gross              | 2016         | 2017       | UNESCO Institute for Statistics                    |
| 6.1.1 | Patents by origin/bn PPP\$ GDP           | 2016         | 2017       | World Intellectual Property Organization           |
| 6.2.5 | High- & medium-high-tech manufactures, % | 2015         | 2016       | United Nations Industrial Development Organization |
| 7.1.1 | Trademarks by origin/bn PPP\$ GDP        | 2016         | 2017       | World Intellectual Property Organization           |
| 7.2.2 | National feature films/mn pop. 15–69     | 2016         | 2017       | UNESCO Institute for Statistics                    |
| 7.2.4 | Printing & other media, % manufacturing  | 2015         | 2016       | United Nations Industrial Development Organization |

### Model changes

The table below provides a summary of the adjustments to the GII 2019 framework.

#### Changes to the GII 2019 framework

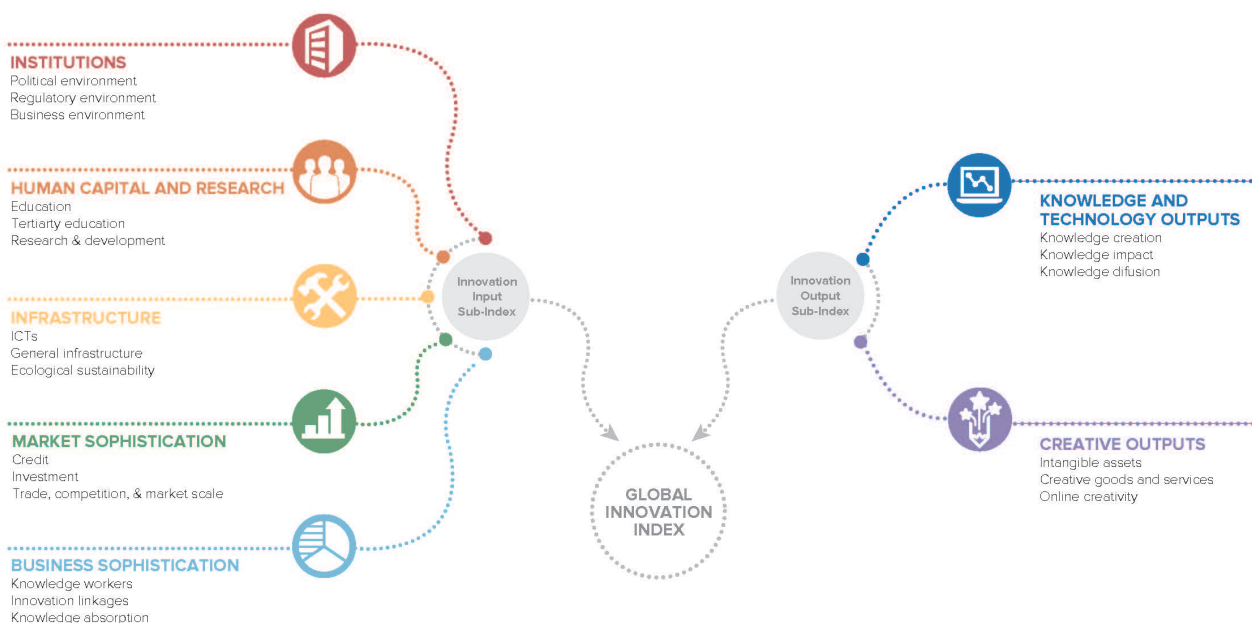
| GII 2018  | Adjustment                  | GII 2019  |
|---|-----------------------------|---|
| 1.1.1 Political stability & safety                  | Replaced                    | 1.1.1 Political & operational stability                           |
| 3.3.2 Environmental performance                     | Indicator changed at source | 3.3.2 Environmental performance                                   |
| 5.3.1 Intellectual property payments, % total trade | Methodology change          | 5.3.1 Intellectual property payments, % total trade (3 year avg.) |
| 5.3.2 High-tech imports, % total trade              | Methodology change          | 5.3.2 High-tech imports, % total trade                            |
| 6.2.1 Growth rate of PPP\$ GDP/worker, %            | Methodology change          | 6.2.1 Growth rate of PPP\$ GDP/worker, % (3 year avg.)            |
| 6.3.1 Intellectual property receipts, % total trade | Methodology change          | 6.3.1 Intellectual property receipts, % total trade (3 year avg.) |
| 7.3.4 Mobile app creation/bn PPP\$ GDP              | Methodology change          | 7.3.4 Mobile app creation/bn PPP\$ GDP                            |

# ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is co-published by Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations. In 2019, the GII presents its 12<sup>th</sup> edition devoted to the theme **Creating Healthy Lives—The Future of Medical Innovation**.

Recognizing that innovation is a key driver of economic development, the GII aims to provide a rich innovation ranking and analysis referencing around 130 economies. Over the last decade, the GII has established itself as both a leading reference on innovation and a “tool for action” for countries that incorporate the GII into their innovation agendas.

## Framework of the Global Innovation Index 2019



The Index is a ranking of the innovation capabilities and results of world economies. It measures innovation based on criteria that includes institutions, human capital and research, infrastructure, credit, investment, linkages; the creation, absorption and diffusion of knowledge; and creative outputs.

The GII has two sub-indices: the Innovation Input Sub-Index and the Innovation Output Sub-Index, and seven pillars, each containing three sub-pillars.

