Dell Women Entrepreneurs (WE) Cities Index Methodology: Measuring a city's ability to attract and support High-Potential Women Entrepreneurs

Introduction

As part of its thought leadership and commitment to Women Entrepreneurs, Dell has set out to benchmark and rate cities on their ability to attract and support High-Potential Women Entrepreneurs (HPWE), defined as women entrepreneurs who are scaling and growing existing businesses with the potential to break through the $1 million or more mark in annual revenue.

In 2016, Dell commissioned IHS Markit, now part of S&P Global, to develop an index that scored and ranked global cities on their ability to attract high potential women entrepreneurs. The WE Cities Index pilot included 25 global cities. In 2017 the Index was expanded to 50 global cities. For the 2023 WE Cities index 5 additional cities are added bringing the total cities scored and ranked to 55.

The 2023 Index is comprised of 90 indicators, over 90% of them are at the city level, over 50% are at the gender level and the vast majority of the data is from 2019-2022.[1]

Background on the construction: In order to gain more insight and perspective on what HPWEs need, Dell partnered with Dr. David S. Ricketts of the Technology and Entrepreneurship Center at Harvard (TECH), Palisades Media Ventures, and IHS Markit to host a research symposium on April 5, 2016, at the Harvard Club in New York City. The symposium was invitation-only and convened key stakeholders and experts including successful women entrepreneurs, policymakers with a focus on supporting women owned businesses, venture capitalists that invest in companies with female founders, organizations that train entrepreneurs and media professionals and researchers who study entrepreneurship, women's issues, and global cities' economic performance.

The symposium provided new insight into the ways that female entrepreneurs' needs differ from those of their male counterparts and the importance of specific aspects of the operating and enabling environment in which they live and work, e.g. access to crowdfunding, paternity leave policies, women's own expectations about their ability to succeed in business, and the collection of gendered data.

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[1] There are few cities for the tertiary education indicators for which the most recent data is 2016.

Building on themes highlighted in previous literature on this topic and the April NYC Dell Research Symposium, IHS Markit was commissioned by Dell to develop an index (WE Cities) to compare the following 25 global metropolitan areas on their ability to attract and support HPWE:

Austin	London	San Francisco	Stockholm
Beijing	Mexico City	Bay Area	Sydney
Delhi	Milan	Sao Paulo	Taipei
Hong Kong	Munich	Seattle	Tokyo
Istanbul	New York City	Seoul	Toronto
Jakarta	Paris	Shanghai	Washington DC
Johannesburg		Singapore	

In 2017 an additional 25 cities were added:

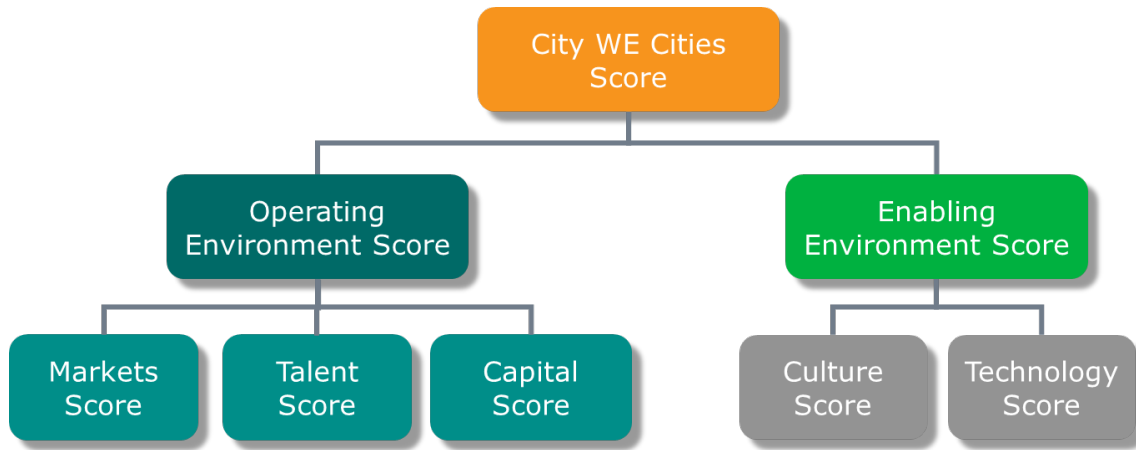|			
Pittsburgh	Portland (OR)	Copenhagen	Dubai
Boston	Houston	Dublin	Kuala Lumpur
Chicago	Atlanta	Barcelona	Bangalore
Los Angeles	Vancouver	Warsaw	Guadalajara
Miami/ Ft.	Amsterdam	Melbourne	Lima
Lauderdale	Belfast	Nairobi	
Minneapolis	Berlin	Tel Aviv	

In 2023 an additional 5 cities were added:

Montpellier, France
Mumbai, India
Hamburg, Germany
Auckland, New Zealand
Wellington, New Zealand

Previous research by Dell found four critical pillars for HPWE: Markets, Capital, Talent and Technology. Subsequent to the Symposium and IHS Markit' own research on the sub-components of these pillars (and corresponding metrics or indicators that could be used to measure each), IHS Markit proposed the inclusion of a fifth pillar: Culture. This pillar captures women's role models, networks, attitudes and expectations as well as the policies that help shape a culture where women are seen as equal and have a level playing field.

Construction of the Rating

The rating was constructed to measure the Operational and Enabling Environment each city provides for women entrepreneurs. Between these two foundational categories, more than 90 indicators are divided among 5 main pillars as follows:

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The data collected to support each of these indicators was undertaken by IHS Markit, now part of S&P Global, consultants, analysts, and country experts drawing from more than 10 global S&P Global offices and their own familiarity with that city or country's local language, culture and databanks. Further, to offset the challenge of finding globally comparable, government sanctioned, city-level, gender-specific data, IHS Markit developed proxy indicators where necessary, and used innovative social media analytics and website scraping techniques to draw information from, Factiva's database of news articles, and other websites that play a role in supporting the growth of women owned businesses.

In the 2017 Index, a few indicators were added and some replaced indicators in the 2016 index due to: (1) a better quality data source was found that was more comparable for all 50 cities or (2) a new data source was found that provided a better proxy measure of a sub-category (3) a new indicator was identified via our interview process

All data is standardized on a 0-100 scale and then weighted at the indicator, subpillar, pillar and environment levels. The overall enabling and operational environment, as well as the pillars, sub-categories, and individual indicators were weighted using four (4) criteria:

1. The relevance of the indicator for measuring what it is intended to measure (e.g. its ability to reflect city versus country level characteristics).
2. The quality of the underlying data for that indicator (e.g. comparability across cities, data collection methodology, etc.)
3. Its uniqueness in the index (e.g. whether it is measuring something that is also captured by other indicators included in the rating).
4. The gender-specific component (e.g. whether it is measuring something important to *women* entrepreneurs rather than entrepreneurs in general)

Differences between the 2017 and 2019 WE Cities Index
In 2019, due to changes in some sources some indicators needed to be adjusted or changed depending on the availability and comparability of data. However, all weights were kept the same and the index continues to have 71 indicators. The indicators that changed are noted below.

Additionally due to some changes in methodology, where we refined an indicator or changed the source 4 indicators are not directly comparable with the corresponding 2017 indicator. These are also noted in the descriptions below. However, given that each indicator is meant to proxy (give information about) the overall sub-pillar, we believe these rankings are still comparable between the two years.

Differences between the 2019 and 2023 WE Cities Index

As part of the 2023 WE Cities Index update, deeper dive research into the technology component of the ecosystem was conducted. This research not only confirmed how ubiquitous technology has become to scaling a business but also showed that the current indicators in the index were not picking up the major changes in technology that have occurred in the last few years as the global economy transitions from the information age to the digital age.

Thus, in 2023, new indicators in the technology pillar were added and a new subpillar that specifically looks at equality issues in technology use was added. Five new indicators were added, some that replaced previous country level world bank data. This data comes from GWI and utilizes their flagship survey, Core, which is the world's largest study on the digital consumer. The data represents over 2.7 billion internet users, offers 57k+ datapoints, and tracks 4k+ brands across 48 markets (and growing). Because it is survey-based data, it is statistically distributed to the population. The statistical distribution is based on the state or country level demographics and therefore may not be an exact representation at the city level. This data is also a survey of people that are already using the internet. Nonetheless it provides valuable insight into issues regarding how women and men are using the internet particularly in the digital age for business.

With the new subpillar, we re-weighted the other 3 subpillars in the technology category. We have also increased the weight on the technology pillar itself from 40% to 50% of the enabling environment.

In addition, due to some datasets no longer being supported, or changes in API systems, as well as new datasets that have become available, we have added, dropped and substituted indicators. Based on the four weighting criteria above individual indicators were re-weighted as needed due to indicators being dropped or substituted.

All indicators are proxies to help measure the subpillar of interest. Therefore, while direct comparisons between indicators may not be possible from year to year, at the subpillar and pillar level scores are comparable. Below is the 2023 list of indicators and sources.

Indicators and Sources

Pillar (subpillar)	Indicator	Description	Source
MARKETS (Size)	City population	This indicator gives a general size of the market.	UN, government statistical agencies (Eurostat, US Census Bureau, etc.)
MARKETS (Size)	GMP	This indicator gives a general size of the market and opportunity.	Government statistical agencies
MARKETS (Size)	Forecasted economic growth rate of city/region or country over next 5 years	This indicator gives a general size of the market and opportunity.	IHS Regional and Worldwide Forecasts
MARKETS (Cost)	Corporate Income Tax Rate	This indicator is inverted such that lower income tax rates are more beneficial for attracting and supporting entrepreneurship.	Deloitte, PWC
MARKETS (Cost)	Cost of Living (inverted)	This indicator is inverted such that higher values indicate lower cost.	Expatistan Cost of Living index
MARKETS (Cost)	Cost of Rent (Numbeo - inverted)	This indicator is inverted such that higher values indicate lower cost.	Numbeo
MARKETS (Cost)	Ease of starting a business - Cost (% income per capita)	Lower barriers to starting a business is a first step to scaling.	World Bank Doing Business, ASU Doing Business
MARKETS (Cost)	Ease of starting a business - Time (Days)	Lower barriers to starting a business is a first step to scaling.	World Bank Doing Business, ASU Doing Business
MARKETS (Cost)	Ease of starting a business – Procedures	Lower barriers to starting a business is a first step to scaling.	World Bank Doing Business, ASU Doing Business
MARKETS (Access)	Most female entrepreneurs as % of startups in city	Research and our interviews with women entrepreneurs show that having more women entrepreneurs in the city can help foster female entrepreneurship.	Crunchbase
MARKETS (Access)	Accelerators (with WOB)	Accelerators provide a powerful way for entrepreneurs to scale their business through networking, training, and access to capital.	Seed-DB Accelerators; F6S; Gan; Galidata Accelerator Directory
MARKETS (Access)	% Company Board members that are Female	The more women on boards of companies signals willingness of companies to engage diversity.	S&P Global CapIQ

MARKETS (Policy)	Presence of a city portal/website for business creation (transparent process, centralized information, etc.)	A hurdle for starting and growing a business is often just knowing how to obtain the right permits and registration as well as knowing what resources the city provides. Many cities are providing portals as one stop shops for business owners to find all the relevant information they need.	Google search and search of city government websites
MARKETS (Policy)	Private sector – corporate vendor programs that try to get women owned businesses as vendors	Many entrepreneurs reach scale by becoming a supplier for a larger company. A hindrance is that women owned businesses are often discriminated against (intentionally or unintentionally) when it comes to winning lucrative contracts. Large companies in a city that are committed to diverse supply chains can help women entrepreneurs reach scale.	Largest five companies in city
MARKETS (Policy)	Government goals for WOB procurement	Like private sector companies, many city governments are passing ordinances to ensure they have a diverse supply chain and give women owned businesses the opportunity to secure contracts.	Google search and search of city government websites
MARKETS (Policy)	Government Online Services Index	Like the importance of having an accessible way to register a business, comprehensive government services that are accessible online can make an entrepreneur's life and running a business easier.	UN Local Online Services Index (LOSI)
TALENT (Women's Skill and Experience)	Labor force participation rate (women age 15+)	Women's ability to participate in the labor force is often a first step to gaining the experience required to run a business.	Eurostat; Government statistical agencies; IHS Markit; OECD; World Bank
TALENT (Women's Skill and Experience)	Business management or finance training courses or programs for WE or women executives	Women's ability to scale often requires skills in finance and business management.	Professional Women's Network (PWN) City Networks; Goldman Sachs 10,000 Small Businesses; US Small Business Administration District Offices; 100 Women in Finance Locations, Google searches
TALENT (Women's Skill and Experience)	Ratio of Female/Male Individuals with MBA's	Dropped	Dropped
TALENT (Women's Skill and Experience)	% of female population with tertiary education or above	This is an indication of both women's own education and educational equality that signals whether women are getting educational opportunities that could help them scale a business.	Eurostat; Government statistical agencies; IHS Markit; OECD; World Bank

TALENT (Women's Skill and Experience)	Ratio of Women/Men with executive Experience	This indicator shows whether women are proportionately gaining executive experience that could be transferred to scaling a business.	LinkedIn
TALENT (Women's Skill and Experience)	Female Faculty in top business schools (%)	Studies have shown that one reason women drop out of business school programs is due to a lack of female faculty role models.	The Financial Times Business School Rankings; Business school websites
TALENT (Women's Skill and Experience)	Percent Female enrollment in top universities	This is an indication of the equality of opportunity for women in higher education. It is a proxy for the attractiveness of the city for women in general and women entrepreneurs specifically.	The Times Higher Education World Reputation Rankings; US News and World Report Best Universities in the World
TALENT (Access to Qualified Personnel)	% of population with tertiary education or above	An educated workforce is often a pre-requisite to getting the talent a women owned business needs to scale.	Eurostat; Government statistical agencies; IHS Markit; OECD; World Bank
TALENT (Access to Qualified Personnel)	% of Labor Force in Professional Services (finance, marketing, accounting, law) within city	This is an indication of whether necessary talent is available for women that want to scale their business.	LinkedIn
TALENT (Access to Qualified Personnel)	Number of accredited business schools in city	Many new businesses are birthed in business schools where writing business plans and running a business is part of the curriculum.	Find-MBA
TALENT (Access to Qualified Personnel)	Number of globally top-ranked business schools in city	Topped ranked business schools tend to attract people with talent and vision that can be catalysts for scaling a business.	The Financial Times Business School Rankings
TALENT (Access to Qualified Personnel)	Number of top ranked global universities in city	Top ranked universities attract talent to the city.	US News and World Report Best Universities in the World
TALENT (Access to Qualified Personnel)	Top Ranked University in that City (out of 2000 globally) (inverted)	Top-ranked universities attract talent to a city. This indicator is inverted so that cities with higher-ranked universities receive higher scores.	US News and World Report Best Universities in the World
TALENT (Access to Qualified Personnel)	% of Labor Force who are IT professionals	In today's internet and enterprise software driven environment, businesses that want to scale need a sophisticated IT staff.	LinkedIn
TALENT (Access to Qualified Personnel)	Number of accredited business schools in city with higher international accreditation	Many new businesses are birthed in business schools where writing business plans and running a business is part of the curriculum. This only includes programs who have AACSB, AMBA and/or EQUIS accreditation.	Find-MBA

CAPITAL (Number/ Value)	Value of VC funds given to businesses with at least 25% female executives	Indicates relatively how well women owned businesses are attracting funding from VCs (a powerful source of capital for scaling and where women have historically not done comparatively well).	S&P Capital IQ Pro
CAPITAL (Number/ Value)	Number of female founders or executives in 2nd round or higher funding round in the city	Indicates relatively how many women in the city are trying to scale and their success at getting to higher rounds of funding.	S&P Capital IQ Pro
CAPITAL (Number/ Value)	Most active Corporate VC Firms (top 25)	Corporate VC is another source of capital and their prevalence in a city indicates an additional access point for capital.	S&P Capital IQ Pro
CAPITAL (Number/ Value)	Number of Women founded VC firms	Research shows that investment companies or VCs with women executives or partners tend to invest more in women entrepreneurs.	Crunchbase
CAPITAL (Number/Value)	Amount Raised on Crowdfunding Sites	Crowdfunding may help level the playing field for women entrepreneurs when it comes to attracting capital. The relative amounts funded in the city is a proxy for greater access to capital for WE.	Kickstarter; Web Robot Kickstarter Dataset
CAPITAL (Gender Proportion)	% of city businesses in 2nd round or higher funding round with a woman founder or executive	This indicates whether women are proportionately getting to higher rounds of funding (scaling).	S&P Capital IQ Pro
CAPITAL (Gender Proportion)	% of VC funds given to businesses with at least 25% female executives (Weight = 0. 25)	This indicates whether women are getting proportional access to funding.	S&P Capital IQ Pro
CAPITAL (Gender Proportion)	% of total investment companies with at least 1 female executive	Research shows that investment companies or VCs with women executives or partners tend to invest more in women entrepreneurs.	S&P Capital IQ Pro
CAPITAL (Gender Proportion)	Measure of Equality: Estimated earned income int'l $ 1,000	The indicator is a proxy for how much command women have over a country's economic resources.	World Economic Forum; UNDP; World Bank; Eurostat; government statistical websites; S&P calculations
CAPITAL (Women's Capital Base)	Number of weeks of paid maternity leave (full pay or partial pay)	Taking time off to start and grow a family causes women to lose income that provides a base to build wealth. To the extent that this income is not disrupted women are better able to accumulate wealth to invest in their own business or in others.	Government websites; OECD; google searches; news articles

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CAPITAL (Women's Capital Base)	Number of potential investors (population of HNWI)	Women often rely on friends and family for funding. This indicates the prevalence of qualified investors in the city that could be potential investors for women entrepreneurs.	Knight Frank
CAPITAL (Gender Proportion)	Measure of Equality: Saved at a financial institution or using a mobile money account (% age 15+)	The indicator measures the percentage of respondents who report saving or setting aside any money at a bank or another type of financial institution or using a mobile money account to save in the past year.	World Bank's Global Findex Database; S&P calculations
CAPITAL (Women's Capital Base)	Total Projects on Crowdfunding Sites	Crowdfunding may help level the playing field for women entrepreneurs when it comes to attracting capital. To the extent sites are active in the city is a proxy for greater access to capital for WE.	Kickstarter; Web Robot Kickstarter Dataset
CULTURE (Access to Mentors & Role Models)	Presence of role models: # of globally recognized successful WE	Women often don't dream big because they don't see other women scaling businesses. This indicates how many local role models women in the city have when it comes to being a successful entrepreneur.	Forbes
CULTURE (Access to Mentors & Role Models)	Female Mayors in last 3 terms	Females in political leadership can be both role models and help influence legislation that provides a level playing field for women.	Municipal websites, wikipedia
CULTURE (Access to Mentors & Role Models)	Entrepreneurial Network (population with entrepreneurial experience)	Our research found that having other entrepreneurs nearby was valuable for networking and providing help and advice.	LinkedIn
CULTURE (Access to Mentors & Role Models)	Number of national level networking, advocacy, or supplier development groups specifically for WE or businesswomen	Organizations that advocate for WE and/or help WE secure contracts with governments and larger companies helps WE scale and helps to change the perception about WE. Cities do not operate in a vacuum and often national level policies and culture can permeate to cities.	Online searches
CULTURE (Access to Mentors & Role Models)	Number of city level organizations specifically for WE or businesswomen	City level organizations can provide valuable networking, education and advocacy that can help WE scale.	Online searches
CULTURE (Access to Mentors & Role Models)	% of women on boards of major business associations' (e.g. Chamber or other influential business group)	Having women on boards of business associations helps women better network with other businesses and helps foster a more diverse business environment in the city.	Online searches

CULTURE (Access to Mentors & Role Models)	**Number of female leaders of major city business associations**	Having female leaders of business associations helps women better network with other businesses and helps foster a more diverse business environment in the city.	Online searches
CULTURE (Access to Mentors & Role Models)	**% of major city business associations headed by female leaders**	While absolute numbers are important, representation is also key. This shows whether women are proportionately represented in leadership in the business community of the city.	Google searches
CULTURE (Attitudes & Expectations)	**Frequency of City events for WE or businesswomen**	City level events for WE or businesswomen help women network and gain critical skills.	Meetup.com; online searches
CULTURE (Attitudes & Expectations)	**% of relevant articles on successful "women entrepreneurs " in Media for that city**	Hearing about role models in the media is another way that helps women dream big.	Factiva
CULTURE (Attitudes & Expectations)	**"% respondents who believe it is hardly or ever acceptable ""using sexist or misogynistic language"**	This is a measure of the overall attitude of the city towards women. Often negative messages can have a bigger influence on women's aspirations and self-perceptions than positive messages. This indicator measures the ratio of positive to negative messages towards women.	IPSOS
CULTURE (Attitudes & Expectations)	**Numbeo.com Crime Level (inverted)**	Crime and Safety are key concerns for any business, but women tend to evaluate their safety more when deciding whether to scale a business.	Numbeo.com
CULTURE (Attitudes & Expectations)	**Numbeo.com Safety Scale**	Crime and Safety are key concerns for any business, but women tend to evaluate their safety more when deciding whether to scale a business.	Numbeo.com
CULTURE (Attitudes & Expectations)	**Numbeo.com Worry about being attacked (inverted)**	Crime and Safety are key concerns for any business, but women tend to evaluate their safety more when deciding whether to scale a business.	Numbeo.com
CULTURE (Policy)	**Collection of city level data on income or employment by gender**	This provides an indication of whether the city is concerned about gender equality - particular on economic issues which are critical for WE. What gets measured gets managed - so we include this indicator as a measure of a culture that values gender equality.	Municipal websites; open data platforms; online searches

CULTURE (Policy)	**Presence of city and/or national level policy advocacy organization specifically for women's equality issues**	Organizations committed to women's equality and rights have helped to change the culture and provided women with more freedom - a prerequisite for scaling a business.	Online searches
CULTURE (Policy)	**Policy for "equal remuneration for work of equal value" (fair pay)**	This is another indication of a culture that values gender equality. It is also critical that women earn their economic worth so they can build their savings and wealth.	World Bank
CULTURE (Policy)	**Policy for "nondiscrimination based on gender in hiring**	This is another indication of a culture that values gender equality. It is also critical that women have equal opportunity in the workplace so they can gain critical skills and experience needed to scale a business.	World Bank
CULTURE (Policy)	**Paid maternity leave**	This is a binary (y/n) indicator that proxies for a culture that is trying to level the playing field for women.	World Bank
CULTURE (Policy)	**Paid paternity leave policy**	This is a binary (y/n) indicator that proxies for a culture that is trying to level the playing field for women.	World bank
CULTURE (Policy)	**% of women in parliament**	Women in leadership are both role models and can put forth legislation that helps level the playing field for women.	IPU
CULTURE (Policy)	**% of women on city councils**	Women elected to city or municipal council (council has authority to make policies and the city/metro level)	Local government websites
CULTURE (Policy)	**Policy on pay transparency**	This is a policy at the national or local level that requires companies to make the pay for each job publicly available	Government websites
TECHNOLOGY (Connected)	**% of women who use the internet**	Access to the internet is becoming a necessity for fully engaging with the global economy. This indicator measures the extent that women have access.	ITU; World Telecommunication ICT Indicators Database; Google Digital Development Dashboard; Statista data (country-level) "Internet usage penetration in the United States in Nov 2021 by state." for non-US cities
TECHNOLOGY (Connected)	**Median mobile download speed (mbps)**	Download speed refers to how many megabits of data per second it takes to download data from a server. Given that businesses and startups operate increasingly online and through mobile devices, slow download speeds can diminish productivity and ultimately hurt the bottom line.	Speed Test Performance

TECHNOLOGY (Connected)	Median mobile upload speed (mbps)	Upload speed refers to how many megabits of data per second it takes to send information from a computer or mobile device to another device or server on the Internet. Given that businesses and startups operate increasingly online, slow upload speeds can diminish productivity and ultimately hurt the bottom line.	Speed Test Performance
TECHNOLOGY (Connected)	Inverse of median mobile latency (ms)	Latency is the time it takes for data to pass from one point on a network to another. Given that businesses and startups operate increasingly online and through mobile devices, high latency creates bottlenecks in communication and networks, which can hurt the bottom line.	Speed Test Performance
TECHNOLOGY (Connected)	Median fixed download speed (mbps)	Download speed refers to how many megabits of data per second it takes to download data from a server. Given that businesses and startups operate increasingly online, slow download speeds can diminish productivity and ultimately hurt the bottom line.	Speed Test Performance
TECHNOLOGY (Connected)	Median fixed upload speed (mbps)	Upload speed refers to how many megabits of data per second it takes to send information from a computer or mobile device to another device or server on the Internet. Given that businesses and startups operate increasingly online, slow upload speeds can diminish productivity and ultimately hurt the bottom line.	Speed Test Performance
TECHNOLOGY (Connected)	Inverse of median fixed latency (ms)	Latency is the time it takes for data to pass from one point on a network to another. Given that businesses and startups operate increasingly online, high latency creates bottlenecks in communication and networks, which can hurt the bottom line.	Speed Test Performance
TECHNOLOGY (Connected)	Population covered by at least a 3G mobile network (note while we collect this data we do not weight it in the index)	Third generation (3G) mobile communication technology launched around 2002, and succeeded 2G. It provided better speed, capacity, bandwidth, and security than its predecessor. 3G networks are increasingly being shut down as 4G has become the dominant mobile communications standard.	ITU Digital Development Dashboard (note, while we collect this data, we do not put weight on this indicator)

TECHNOLOGY (Connected)	Population covered by at least a 4G mobile network	Fourth generation (4G) mobile communication technology launched around 2009, and succeeded 3G. It provided better speed, capacity, bandwidth, and security than its predecessor. It is the most widely used and supported mobile communications standard in the world. Thus, reliable 4G can be viewed as an indicator of whether a city has the necessary mobile infrastructure required to start a business.	ITU Digital Development Dashboard
TECHNOLOGY (Cost)	Inverse of Average Monthly Cost of Internet (8MB speed) USD	Cost can be a hindrance to access, as well as a hindrance to scaling a business, this measures the relative cost of basic technology.	Expatistan Cost of Living Index
TECHNOLOGY (Cost)	Inverse of Average Cost 1 min. of prepaid mobile tariff (no discounts or plans) USD	Cost can be a hindrance to access, as well as a hindrance to scaling a business, this measures the relative cost of basic technology.	Expatistan Cost of Living Index
TECHNOLOGY (Cost)	Per capita number of open development users	Open development platforms provide a place for developers and users of software applications to meet. These development platforms have allowed entrepreneurs to scale their businesses more quickly and/or at lower cost.	Github.com - search users in each city
TECHNOLOGY (Cost)	Average Datacenter kw/rack	Datacenters are a key infrastructure piece of the digital economy. The kw/rack measures the efficiency of the datacenter. Higher numbers signify higher efficiency and helps lower costs for applications like cloud, smart cities, IoT, etc.	S&P Global Technology
TECHNOLOGY (Policy)	Open Government Data Index	This indicator measures the extent to which the government provides access to data, including online data sets, access to online services, data tools, public procurement notifications, and other online information.	Open Government Data Index OGDI; UN Public Administration EGov City Data
TECHNOLOGY (Policy)	Per capita technology training organizations for women (max = 10)	Technology can be intimidating for anyone. Women who want to scale their business need to have basic skills in utilizing technology. Classes specifically for women are also less intimidating/more inviting for women.	Pyladies Locations; Women Who Code Networks; Girls in Tech Network; Rails Girls Events; Girls Who Code Locations; Django Girls Events

TECHNOLOGY (Policy)	Technology training organizations for women	Technology can be intimidating for anyone. Women who want to scale their business need to have basic skills in utilizing technology. Classes specifically for women are also less intimidating/more inviting for women.	Pyladies Locations; Women Who Code Networks; Girls in Tech Network; Rails Girls Events; Girls Who Code Locations; Django Girls Events
TECHNOLOGY (Policy)	Baseline cyber security score	This indicator scores governments on how well they enact baseline cyber security measures. Data protection, e-verification, and protection of digital services are critical as more business and communication are conducted virtual.	National Cyber Security Index
TECHNOLOGY (Policy)	Inverse of smart city rank (Number of smart city projects)	These cities were ranked out of 118 total cities based on Structures and Technology within several key categories (health and safety; mobility; activities; opportunities; and governance).	Plan Be Smart City Index
TECHNOLOGY (Policy)	Per capita commercial deployments of 5G	This indicator measures the number of commercial 5G deployments available and running in cities. 5G provides faster and better connectivity, and thus this indicator provides a glimpse at which cities are providing entrepreneurs access to the latest and fastest connectivity technology.	Speed Test Ookla 5G Map
TECHNOLOGY (Policy)	Is commercial 5G available?	This indicator measures the number of commercial 5G deployments available and running in cities. 5G provides faster and better connectivity, and thus this indicator provides a glimpse at which cities are providing entrepreneurs access to the latest and fastest connectivity technology.	Speed Test Ookla 5G Map
TECHNOLOGY (Equality)	Ratio of female/male that say they are confident using new technology (max = 1)	This provides an indication of how confident women are using technology	GWI
TECHNOLOGY (Equality)	Ratio of male/female that do not use online payment services (max = 1)	This provides an indicator of whether women use online payment services	GWI
TECHNOLOGY (Equality)	Gender equality in tech industry (ratio of women/men in key roles)	Working in the technology industry provides key skills that can be applied to many different businesses. The industry has traditionally been male-dominated, which limits skill building for females.	S&P Global CapIQ

TECHNOLOGY (Equality)	**LinkedIn ad audience, % women**	This provides an indication of how equally women are engaging with social media, which is increasingly becoming a place to exchange ideas and information.	Datareportal
TECHNOLOGY (Equality)	**Ratio of female/male that use the internet to manage finances/savings (max = 1)**	This provides an indication of whether women are using technology to manage finances and savings.	GWI
TECHNOLOGY (Equality)	**Ratio of female/male that use the internet for business-related research (max=1)**	This provides an indication of how equally women are engaging with the internet for business relate research.	GWI
TECHNOLOGY (Equality)	**Ratio of female/male that use the internet for business-related networking**	This provides an indication of how women are using the internet for networking.	GWI
TECHNOLOGY (Equality)	**Gender equality in LinkedIn ad audience: ratio of female/male (max = 1.0) (Gender equality in LinkedIn use: ratio of female/male (max = 1.0))**	This is an indication of whether women are equally engaging in professional social media.	Datareportal

About IHS Markit, now part of S&P Global

IHS Markit, now part of S&P Global (NYSE: SPGI) provides Essential Intelligence: the powerful combination of the right data, connected technologies, and experts that enables our customers to make decisions with conviction.

S&P Market Intelligence brings together the deepest intelligence across the widest set of capital-intensive industries and markets. By connecting data across variables, our analysts and industry specialists present our customers with a richer, highly integrated view of their world. We're able to isolate cause and effect, risk and opportunity in new ways that empower our customers to make well-informed decisions with greater confidence. Our dynamic team includes more than 5,000 analysts, data scientists, financial experts and industry specialists with expertise spanning numerous industries including leading positions in finance, energy and transportation. Our team of experts delivers leading data and technology solutions, partnering with customers to provide them with unrivaled insights to expand their perspectives, operate with confidence and make decisions with conviction.