

GUIDE TO ONLINE DASHBOARDS

SUPPLEMENT

TO

TRACKING THE DIGITAL FOOTPRINT IN LATIN AMERICA AND THE CARIBBEAN:

Lessons learned from using big data to assess the digital economy

ANÁLISIS DE LA HUELLA DIGITAL EN AMÉRICA LATINA Y EL CARIBE :

Enseñanzas extraídas del uso de los macrodatos para evaluar la economía digital

Report was prepared by Martin Hilbert (Hilbert[at]UCDavis.edu), Veronika Vilgis, Yu-Chang Ho, Xin Jin, Kangbo Lu, Karla Rascon-Garcia, and Matthew Reese.

Qlik Dashboards

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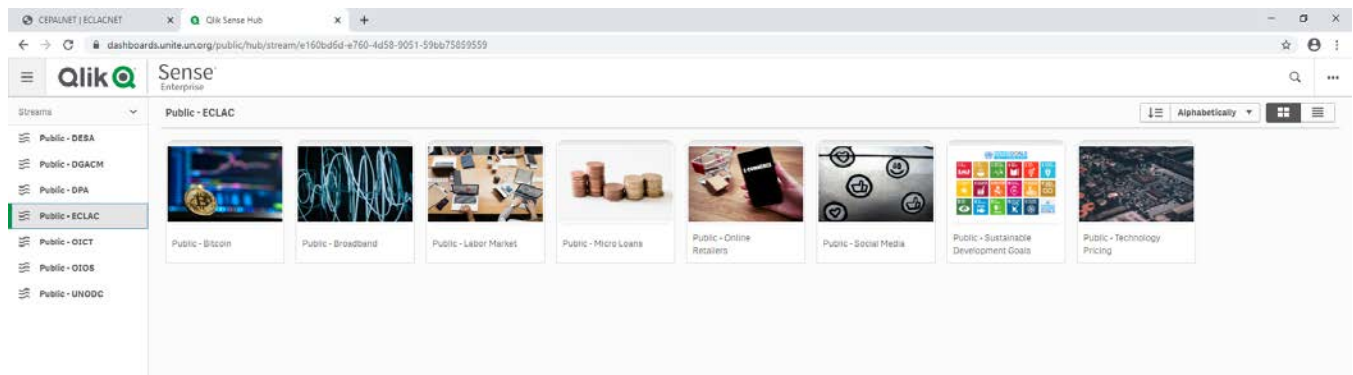
1. WORKANA – SUPPLY & DEMAND
2. FRELANCER – SUPPLY & DEMAND

3. FREELANCER SUBSET ANALYSIS EARNINGS
4. DEMAND ALL SOURCES
5. BOLSA NACIONAL DE EMPLEO (BNE) CHILE DEMAND
6. BUMERAN DEMAND

Location

All dashboards are currently published on the Public - ECLAC stream:

<https://dashboards.unite.un.org/public>



I. MICRO LOANS



MICRO LOANS

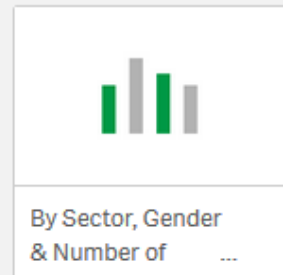
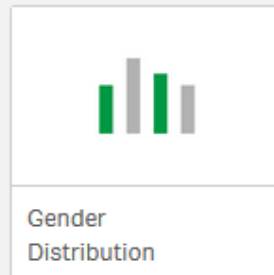
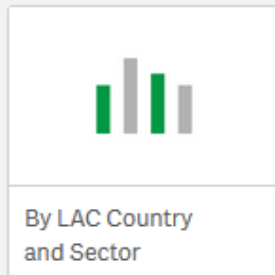
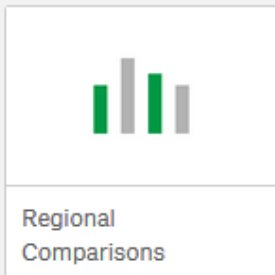
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Published: Jul 17, 2019, 2:25 PM

Published to: ECLAC Management Dashboard

Sheets Bookmarks Stories

▼ Base sheets (4)

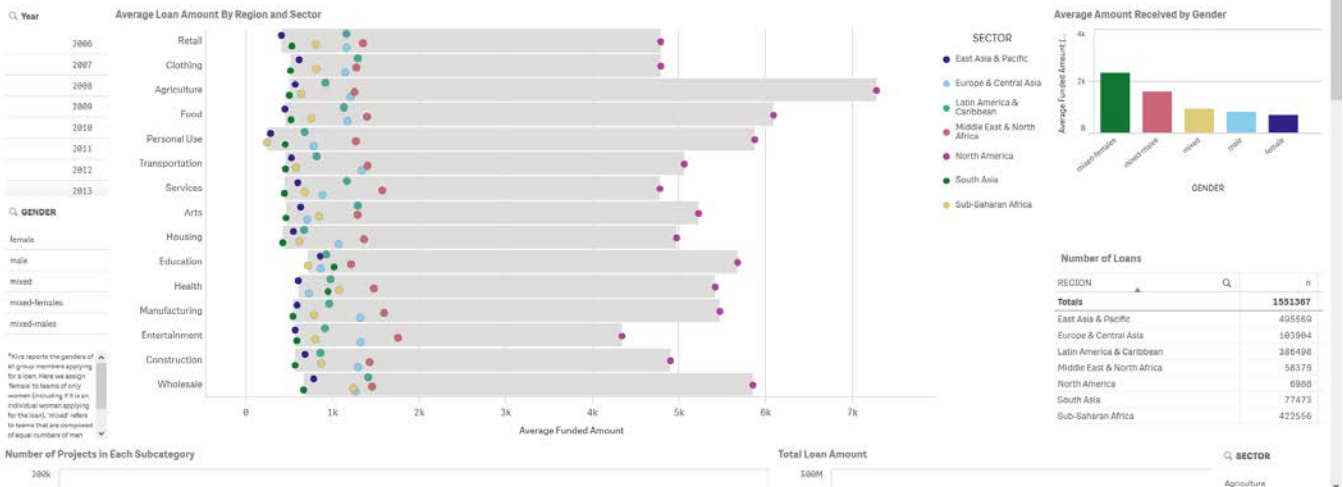


Regional Comparisons

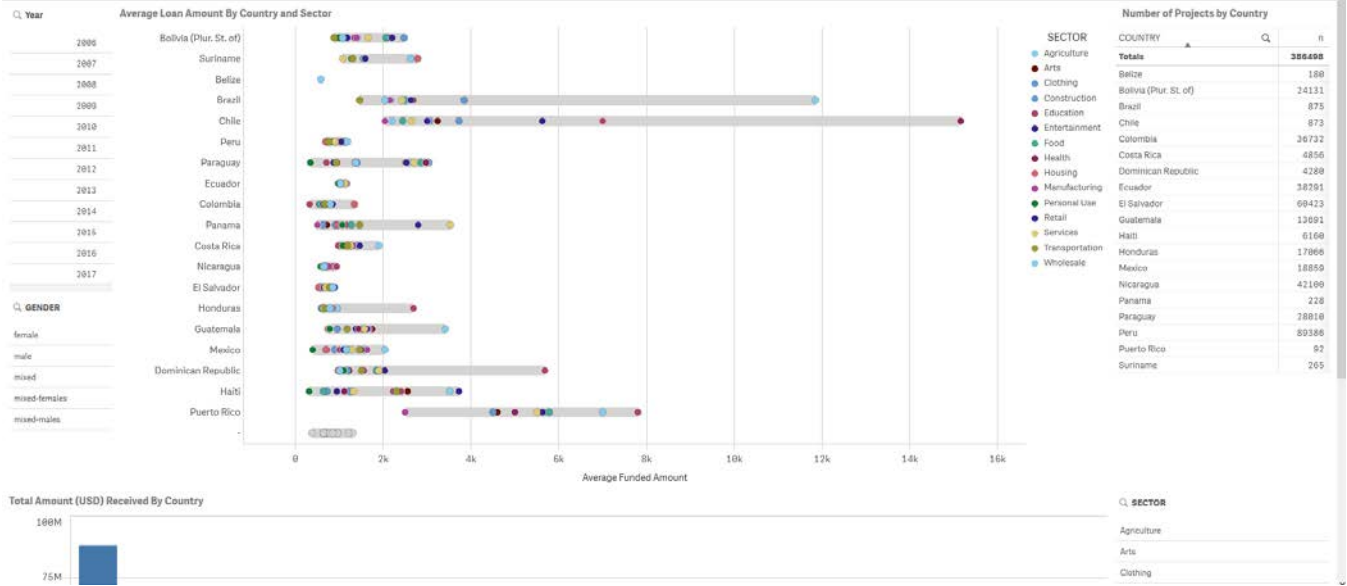
Kiva is a crowd-funding platform with a special focus on projects in developing countries. Its mission is "to connect people through lending to alleviate poverty" (Waghorn, 2013). It has crowd-funded over 1.7 million loans, with a repayment rate of over 98 percent (Price, 2017), raising about \$1 million every three days as early as 2013 (Waghorn, 2013). Kiva is active in 101 countries, 22 of them in Latin America and the Caribbean, with LAC representing 386,498 out of the worldwide 1,551,367 successfully financed projects (about a quarter). We work with 1.5 million successfully funded projects at the time of collection (March 2019), out of the 1.7 listed projects.

Price, S. (2017). Lending Pioneer Kiva Hits The One Billion Mark and Launches A Fund For Refugees. Retrieved March 28, 2019, from Forbes website: <https://www.forbes.com/sites/susanprice/2017/07/06/lending-pioneer-kiva-hits-the-one-billion-mark-and-launches-a-fund-for-refugees/>

Waghorn, T. (2013). Premier Donor Loans That Change Lives. Retrieved March 28, 2019, from Forbes website: <https://www.forbes.com/sites/terrywaghorn/2013/11/04/premier-donor-loans-that-change-lives/>



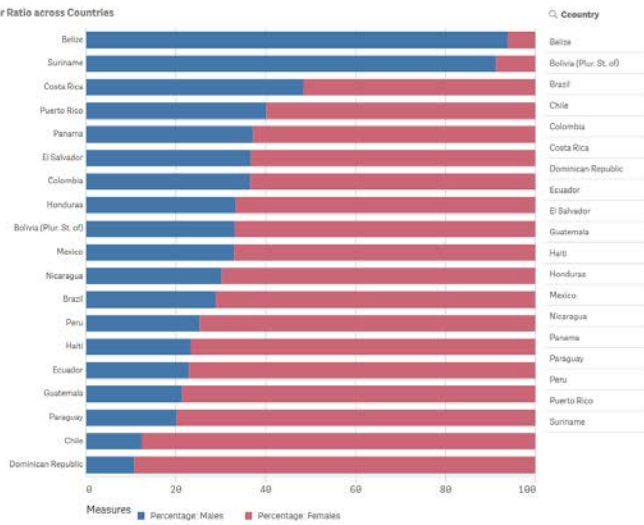
By LAC Country and Sector



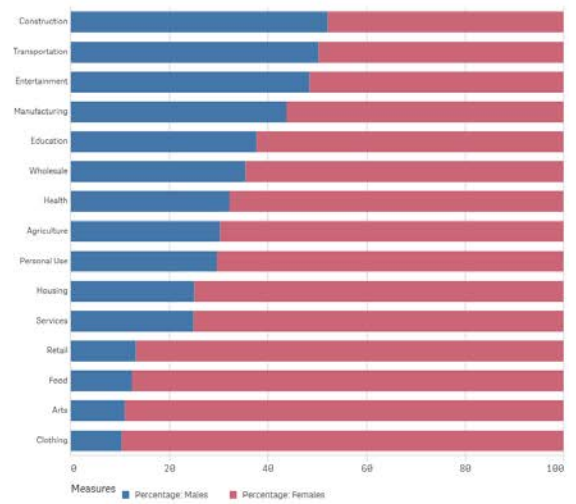
Gender Distribution

In this gender analysis we treat gender as a continuous variable in which we calculate the gender composition for each team. If the loan applicant is a single male the percentage assigned is (100% male - 0% female) the same is true for a team of five men. If a team consists of three women and one man the resulting composition would be 75% female - 25% male. We then calculate national averages for each LAC country and sector.

Average Gender Ratio across Countries

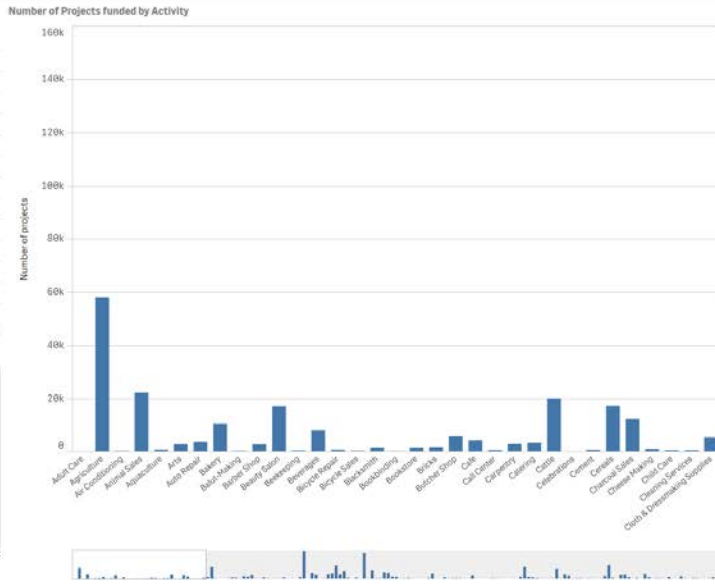
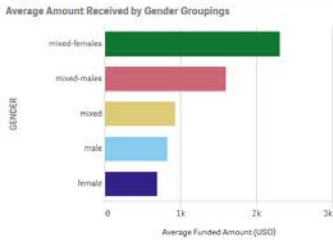


Average Gender Ratio across Sectors



By Sector, Gender & Number of Projects

COUNTRY	SECTOR
Belize	Agriculture
Bolivia (Plur. St. of)	Arts
Brazil	Clothing
Chile	Construction
Colombia	Education
Costa Rica	Entertainment
Dominican Republic	Food
Ecuador	Health
El Salvador	Housing
Guatemala	Manufacturing
Haiti	Personal Use
Honduras	Retail
Mexico	Services
Nicaragua	Transportation
Paraguay	Wholesale

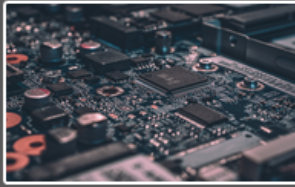


Total Number of Loans

COUNTRY	n
Totals	356488
Belize	189
Bolivia (Plur. St. of)	24131
Brazil	875
Chile	873
Colombia	36732
Costa Rica	4856
Dominican Republic	4289
Ecuador	38791
El Salvador	60423
Guatemala	15691
Haiti	6109
Honduras	17085
Mexico	18859
Nicaragua	42106

Total Loan Amount
\$1,226,591,775

II. TECHNOLOGY PRICING



TECHNOLOGY PRICING

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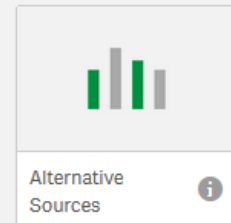
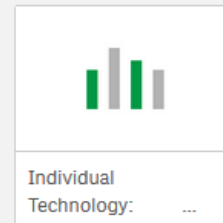
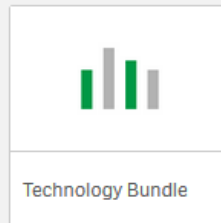
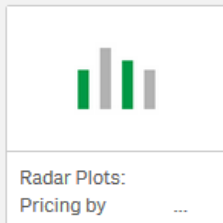
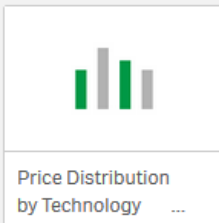
Published: Jul 17, 2019, 2:25 PM

Published to: ECLAC Management Dashboard

ANALYSIS OF TECHNOLOGY PRICES ACROSS 18 LAC COUNTRIES

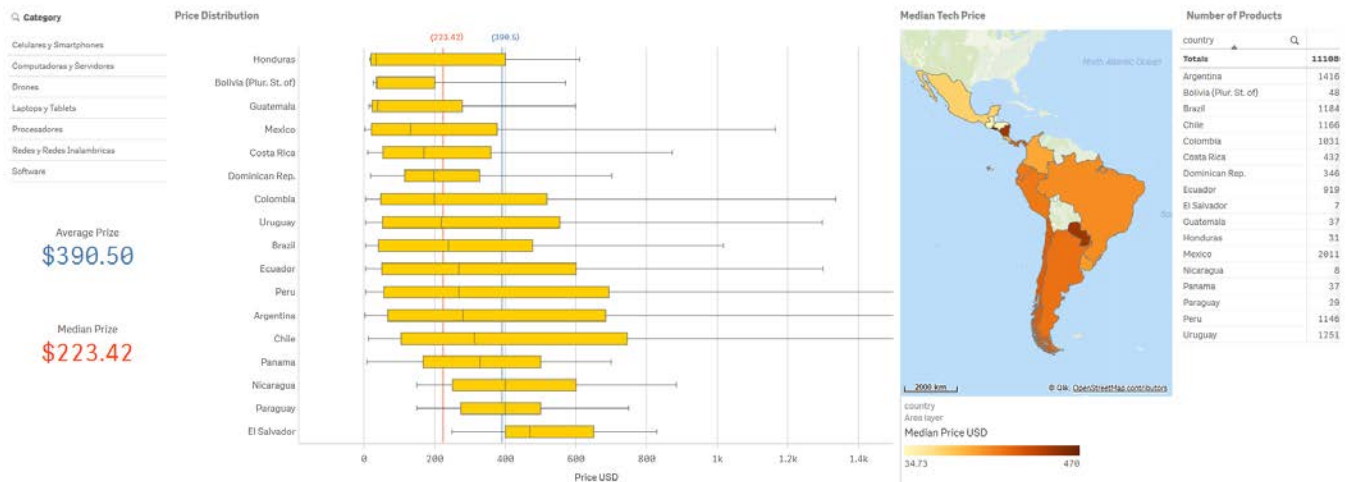
Sheets Bookmarks Stories

▼ Base sheets (5)



Price Distribution by Technology Category

In this analysis we tracked technology prices from 18 countries in Latin America and the Caribbean. We focus on seven categories, namely mobile phones, laptops & tablets, computers & servers, processors, networks and wireless products, software and drones. Data was collected in January / February 2019. (Source: mercadolibre.com)



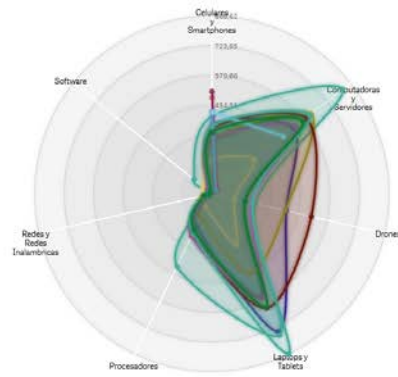
Radar Plots: Pricing by Category

Country

Argentina
Bolivia (Plur. St. of)
Brazil
Chile
Colombia
Costa Rica
Dominican Rep.
Ecuador
El Salvador
Guatemala
Honduras
Mexico
Nicaragua
Panama
Paraguay
Peru
Uruguay

Median Price in USD Across Categories

Argentina
Bolivia (Plur. St. of)
Brazil
Chile
Colombia
Costa Rica
Dominican Rep.
Ecuador
El Salvador
Guatemala
Honduras
Mexico
Nicaragua
Panama
Paraguay
Peru
Uruguay



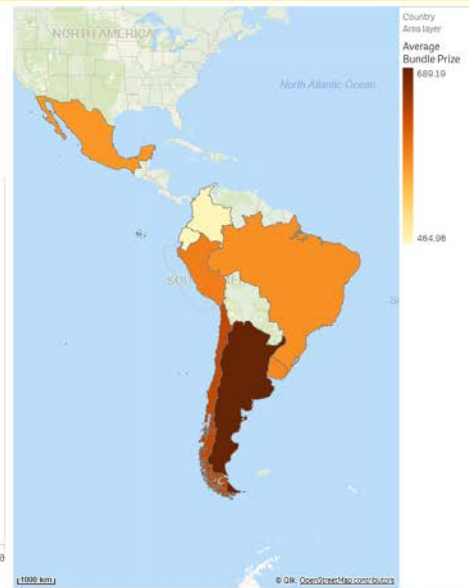
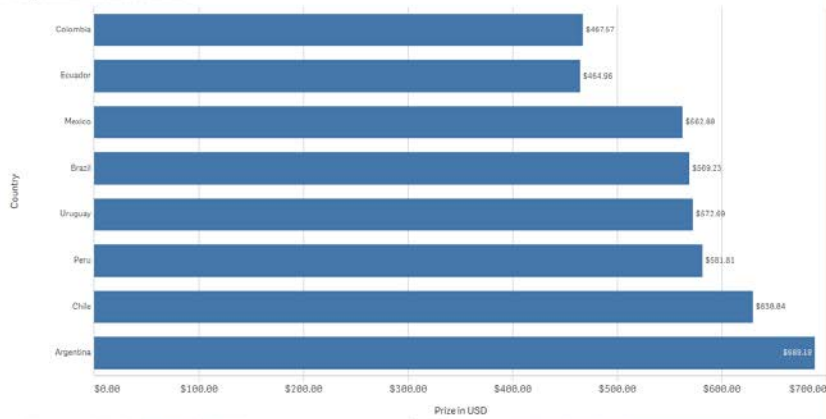
* Categories with less than 100 products in any country were excluded from the analysis

Technology Bundle



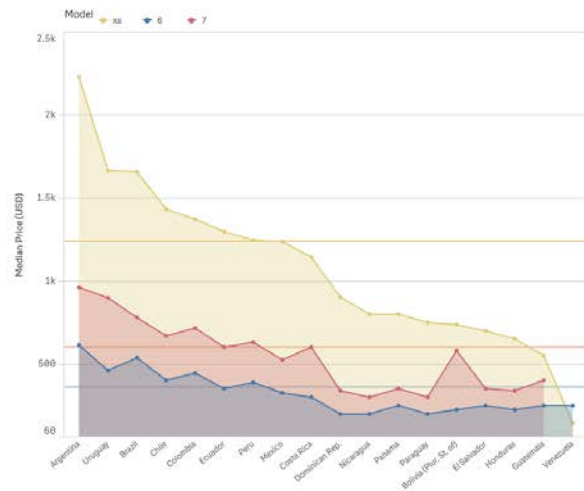
Bundle
Smartphone: Samsung Galaxy J2
Tablet: Apple iPad
Laptop: Acer Aspire

Average Bundle Price across Countries

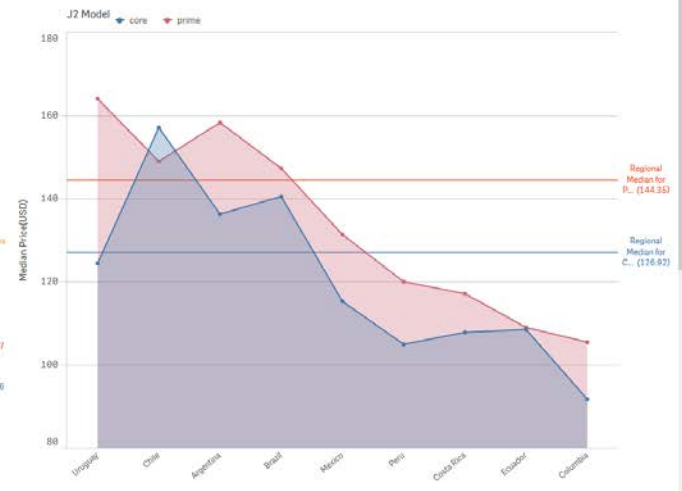


Individual Technology: iPhone & JPhone comparison

Mercado Libre - Median iPhone Prices Across Countries



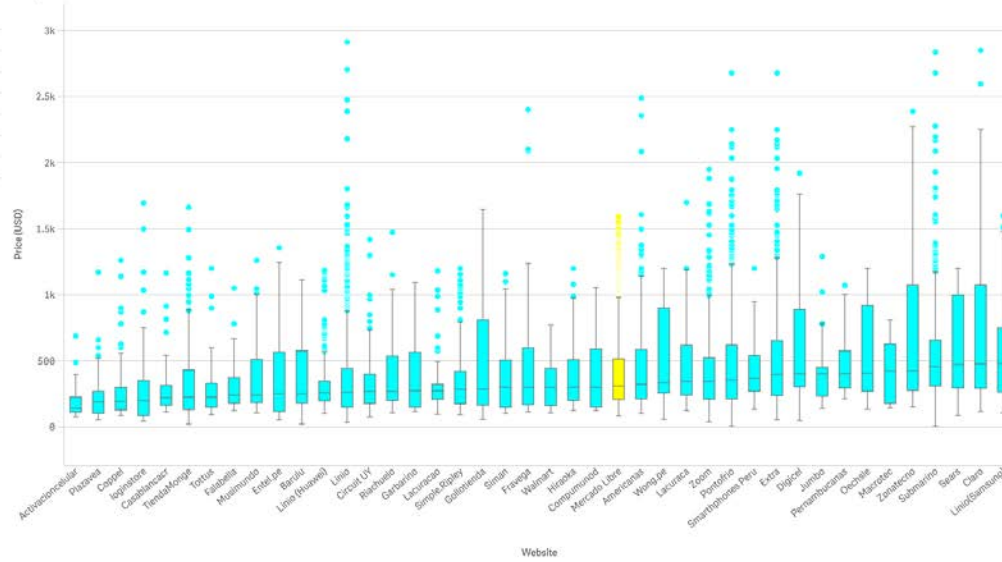
Mercado Libre - Median Samsung Smartphone Price for J2 Core (2018) and J2 Prime (2016)



Alternative Sources

Country

Smartphone Price Distribution



Total Products By Website

Website	Q	n
Totals		18898
Mercado Libre		8251
Pontorio		1240
Extra		1197
Lino		1098
Submarino		741
Lino(Samsung)		438
Americanas		328
TiendaMonge		298
Lino (Huawei)		278
Zoom		238
Zonatecno		116
Logistore		100
Barilla		91
Simple Ripley		68
Claro		79
Multimundo		78
Fravega		74
Rachuelo		73
Golotienda		72
Copel		71
Entel.pe		68
Plazavla		60
Lacuracao		59
Circuit UY		56
Digital		56
Lacuraca		54
Smartphones Peru		52
Pennamobuana		46
Garbarino		45
Siman		42
Compumund		41
Totus		39

III. SOCIAL MEDIA



SOCIAL MEDIA

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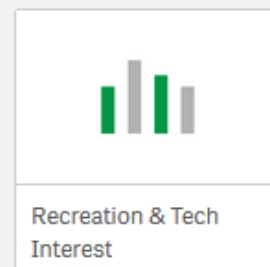
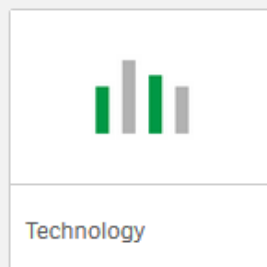
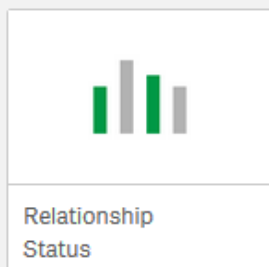
Published: Jul 17, 2019, 2:25 PM

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FACEBOOK AD MANAGER API ANALYSIS

Sheets Bookmarks Stories

▼ Base sheets (4)



Relationship Status

This analysis uses "potential reach" of monthly average users (MAU) reported by the Facebook-ads manager API. The reported default value by Facebook for MAU is 1,000 (often even if the daily average user is 0, 1 or 2 people per age group and gender, per country). Therefore, the data was collected twice, within one week, to get more reliable results, and report either the average of both collections for MAU, or the number that is different from the 1,000 default. If countries have more than 50 % of the reported fields filled with the unreliable 1,000 default, we exclude these countries from the analysis, due to small sample size (this is the often the case for some Caribbean countries). Data was collected in March 2019.

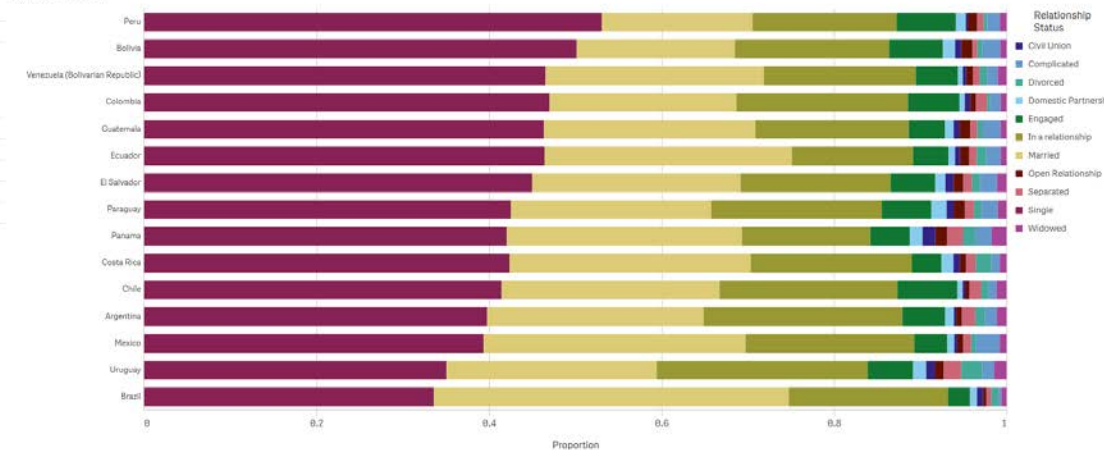
Gender

female
male

Age Group

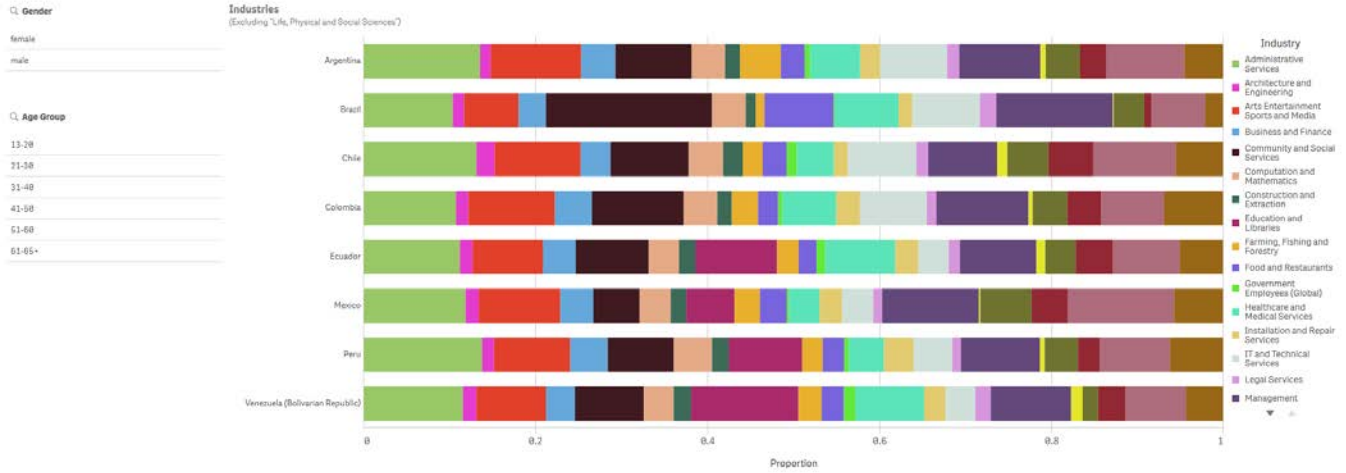
15-19
20-29
30-39
40-49
50-59
60-69
70-79

Relationship Status (Excluding "Unspecified")



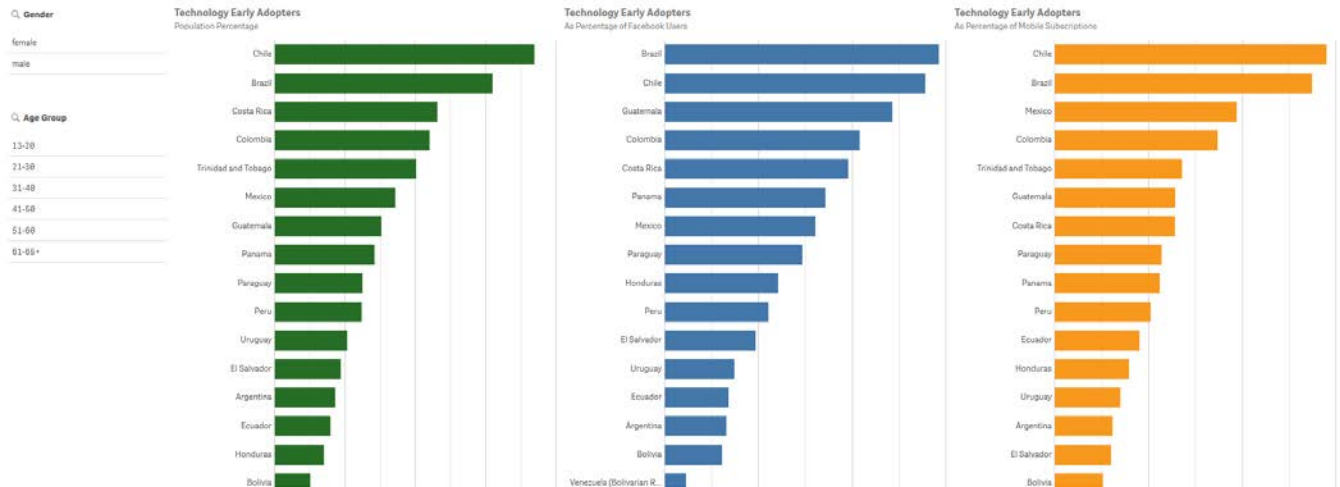
Industries

This analysis uses "potential reach" of monthly average users (MAU) reported by the Facebook-ads manager API. The reported default value by Facebook for MAU is 1,000 (often even if the daily average user is 0, 1 or 2 people per age group and gender, per country). Therefore, the data was collected twice, within one week, to get more reliable results, and report either the average of both collections for MAU, or the number that is different from the 1,000 default. If countries have more than 50 % of the reported fields filled with the unreliable 1,000 default, we exclude these countries from the analysis, due to small sample size (this is the often case for some Caribbean countries). Data was collected in March 2019.



Technology

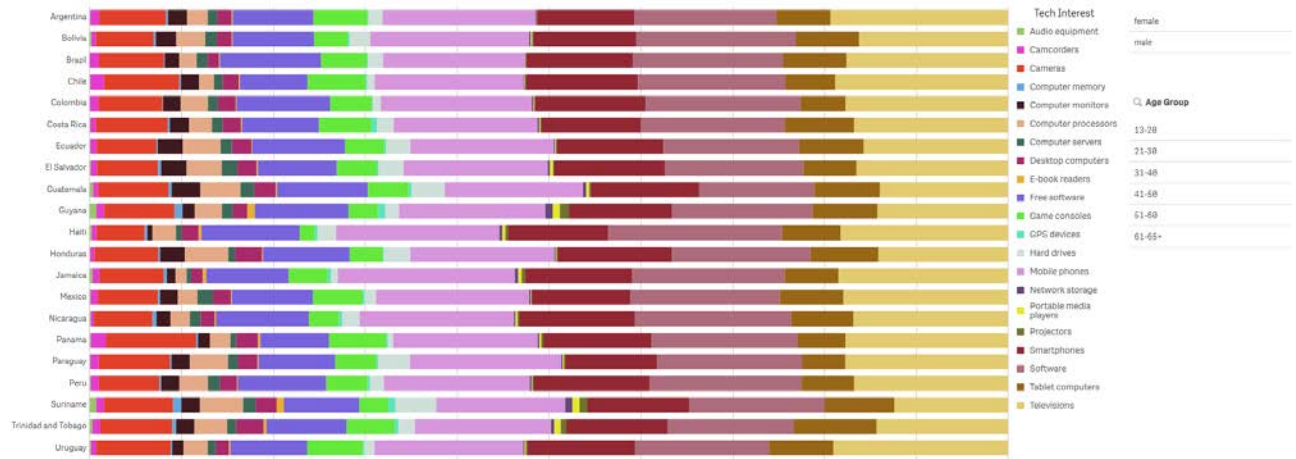
This analysis uses "potential reach" of monthly average users (MAU) reported by the Facebook-ads manager API. The reported default value by Facebook for MAU is 1,000 (often even if the daily average user is 0, 1 or 2 people per age group and gender, per country). Therefore, the data was collected twice, within one week, to get more reliable results, and report either the average of both collections for MAU, or the number that is different from the 1,000 default. If countries have more than 50 % of the reported fields filled with the unreliable 1,000 default, we exclude these countries from the analysis, due to small sample size (this is the often case for some Caribbean countries). Data was collected in March 2019.



Recreation & Tech Interest

This analysis uses "potential reach" of monthly average users (MAU) reported by the Facebook-ads manager API. The reported default value by Facebook for MAU is 1,000 (often even if the daily average user is 0, 1 or 2 people per age group and gender, per country). Therefore, the data was collected twice, within one week, to get more reliable results, and report either the average of both collections for MAU, or the number that is different from the 1,000 default. If countries have more than 50 % of the reported fields filled with the unreliable 1,000 default, we exclude these countries from the analysis, due to small sample size (this is the often case for some Caribbean countries). Data was collected in March 2019.

Technology Interests



IV. SUSTAINABLE DEVELOPMENT GOALS

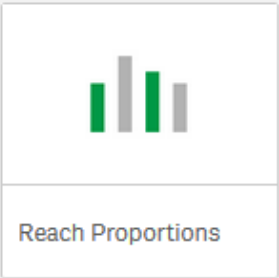
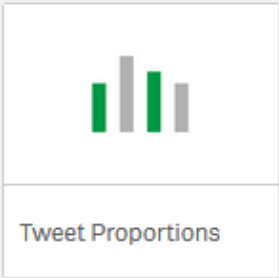


SUSTAINABLE DEVELOPMENT GOALS

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Published to: ECLAC Management Dashboard

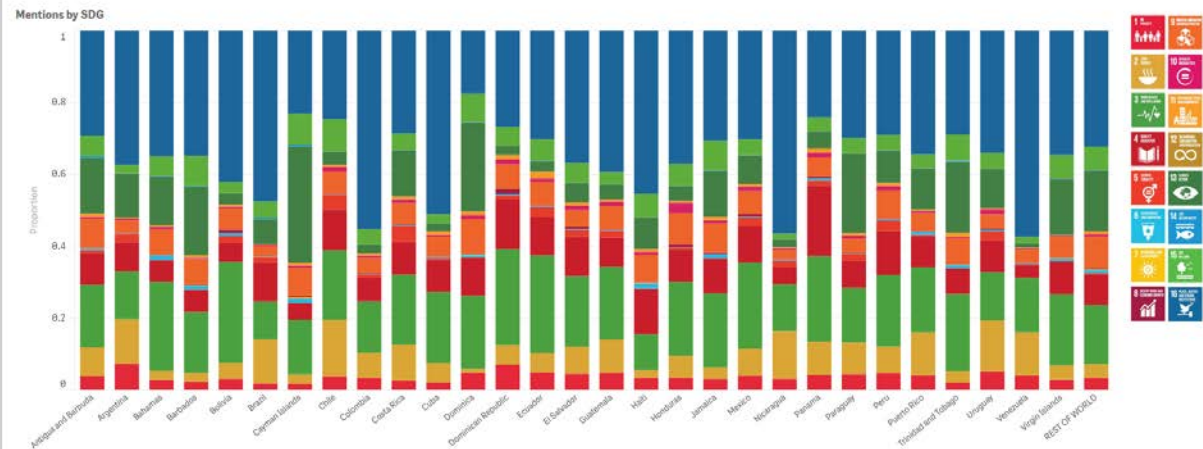
Sheets Bookmarks Stories

▼ Base sheets (2)



Tweet Proportions

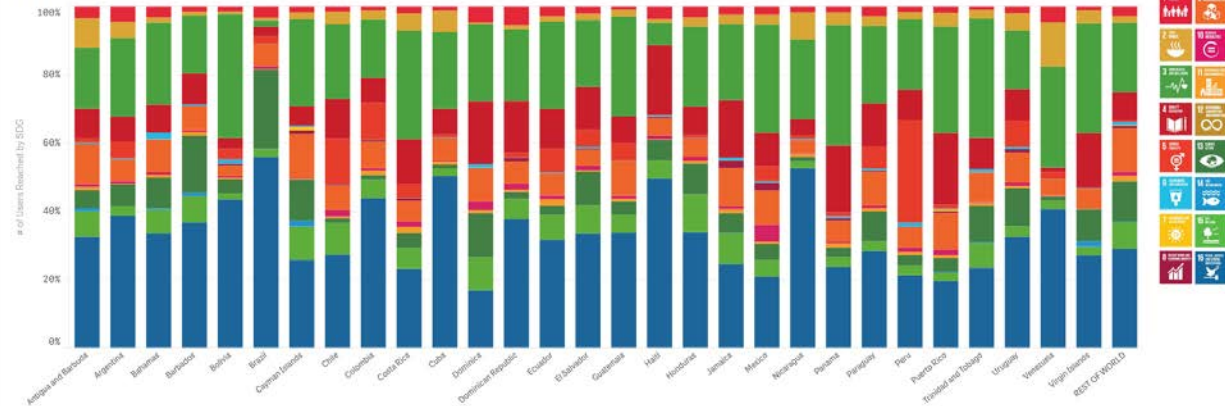
This analysis focused on tweets and a set of keywords related to the 17 SDGs. Keywords included all 17 SDGs and related words in English, Spanish, and Portuguese (mainly words of the main SDG title). Location information was also obtained. 4,612,966 tweets were allocated to one of 29 countries from Latin America and the Caribbean (countries with less than < 1000 tweets were excluded from the analysis). 31,206,467 tweets were from the rest of the world, and therefore serve as a global benchmark for purposes of comparison. SDG 17 was excluded due to lack of specificity and overlap with other SDGs. Data was collected between February and March 2019. (Source: Twitter)



Reach Proportions

In addition to collecting tweets (see dashboard on tweet proportions), we also obtain the number of followers of the sender. We use this as a rough approximation for the "potential reach" of a tweet. If one topic is tweeted by a group of social media hermits, while another topic is promoted by a group that occupy a central leadership role in the Twitter network, the later has potentially more visibility. Therefore, we multiply each tweet with the number of followers of its sender and sum up the result. Note that the resulting number can be much larger than the global population, since, in our approximation, we account for the reach of each tweet, and a single person can receive several tweets from the same person.

Potential Reach (number tweets * number followers per sender) by SDG



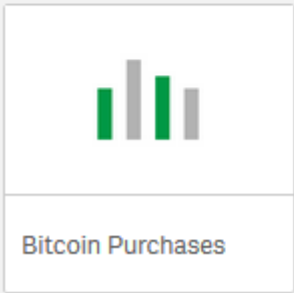
V. BITCOIN



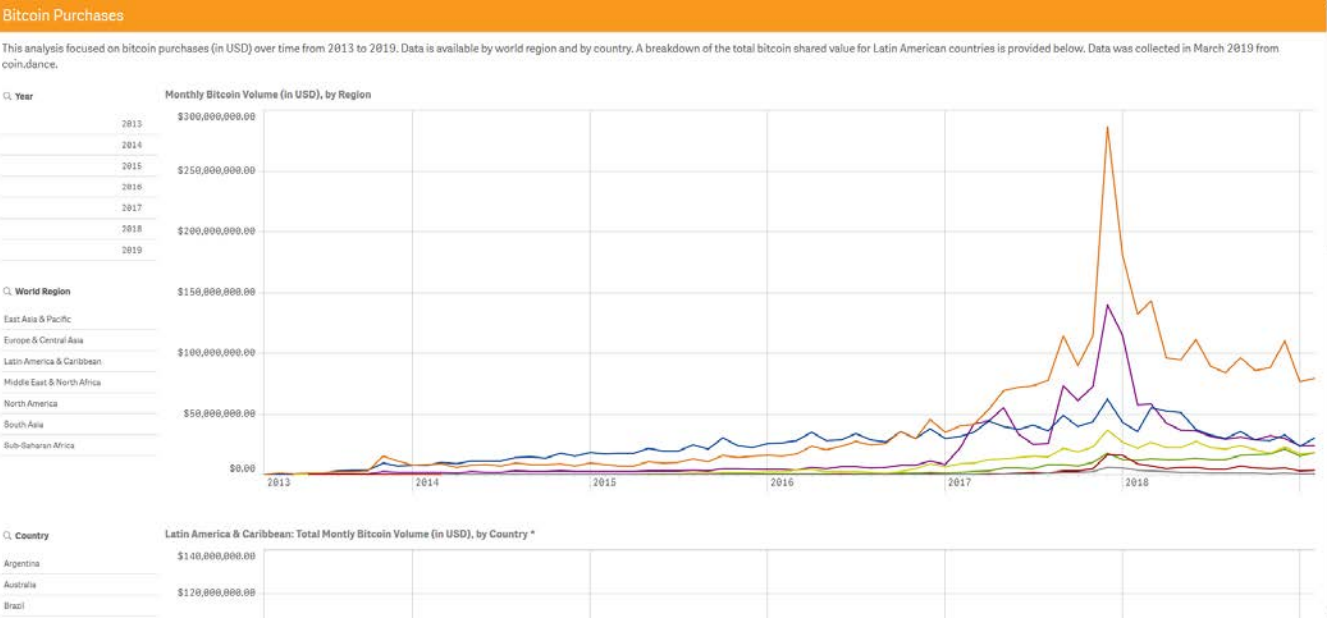
BITCOIN
Data last loaded: Mar 21, 2019, 12:36 PM
Published: Jul 17, 2019, 2:25 PM
Published to: ECLAC Management Dashboard

Sheets Bookmarks Stories

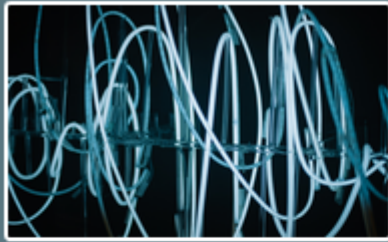
▼ Base sheets (1)



Bitcoin Purchases



VI. BROADBAND



BROADBAND

Data last loaded: Mar 28, 2019, 12:23 PM

Published: Jul 17, 2019, 2:25 PM

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 Sheets  Bookmarks  Stories

▼ Base sheets (2)



Global and
Regional



Country
Comparison

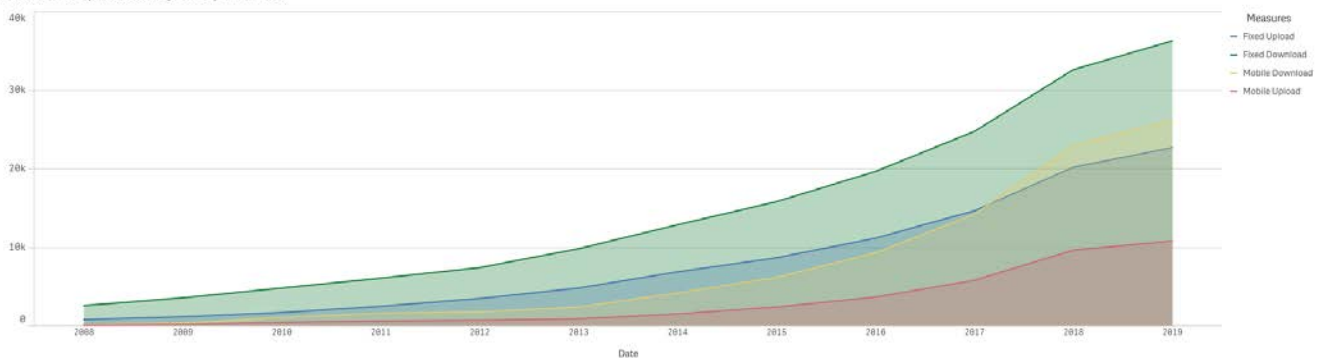
Global and Regional Comparison

The following data is based on crowd-sourced speedtests collected by Ookla (collected in January - March 2019). It represents the speed obtained during standardized speed tests, executed by users across the world. Historical estimates pre-2018 are taken from (Hilbert, 2019a, 2019b).

Hilbert, H. (2019a). Digital Divide Database (DDDD) Scholarly Paper No. 10 2447386. Retrieved from Social Science Research Network website: https://papers.ssrn.com/sol3/cfabstract.cfm?abstract_id=3447386
Hilbert, H. (2019b). Digital Divide Database. <https://doi.org/10.21203/rs.3.rs-2447386/v1>

Broadband Speeds by Type over Time (in Kbps)

ALL REGIONS. Values Captured Reflect January 01 of each year indicated below



Broadband Speeds by Region and Type

JANUARY 2018



Connection Type

- Fixed Download
- Fixed Upload
- Mobile Download

YEAR

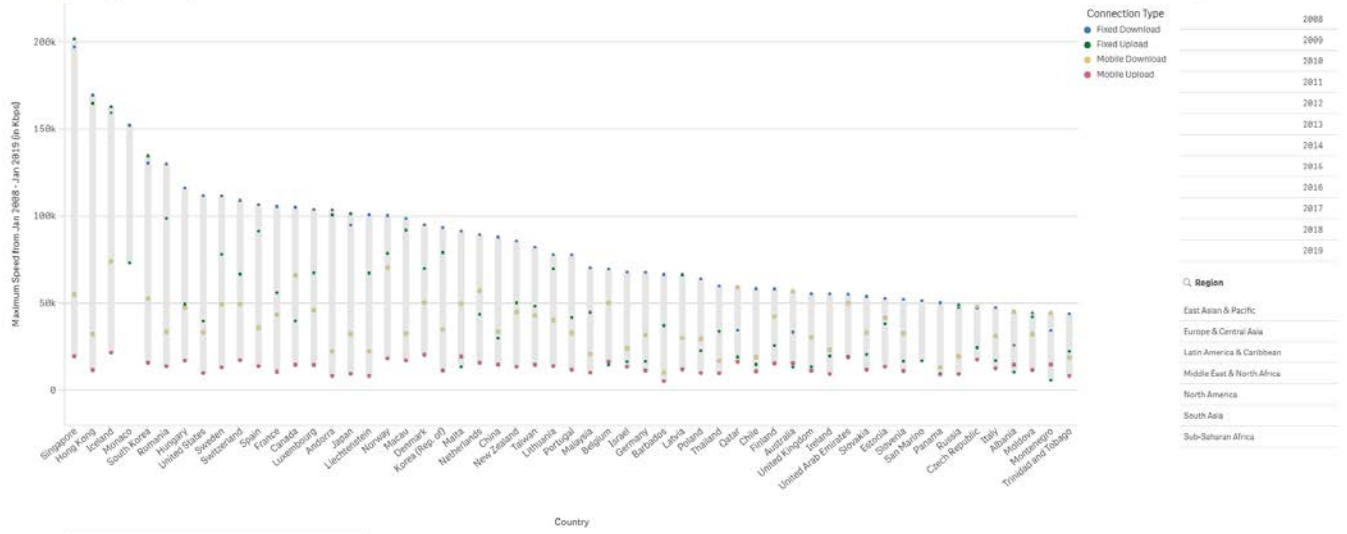
2008

2009

2010

Country Comparison

Broadband Speeds by Type and Country



VII. ONLINE RETAILERS



ONLINE RETAILERS

Data last loaded: Jul 15, 2019, 4:16 PM

Published: Jul 17, 2019, 2:25 PM

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Sheets Bookmarks Stories

▼ Base sheets (6)



Overview Vendors
Across Countries



Geography



Payment Methods



Vendor Evaluations



Internet Users and
Transactions



HHI

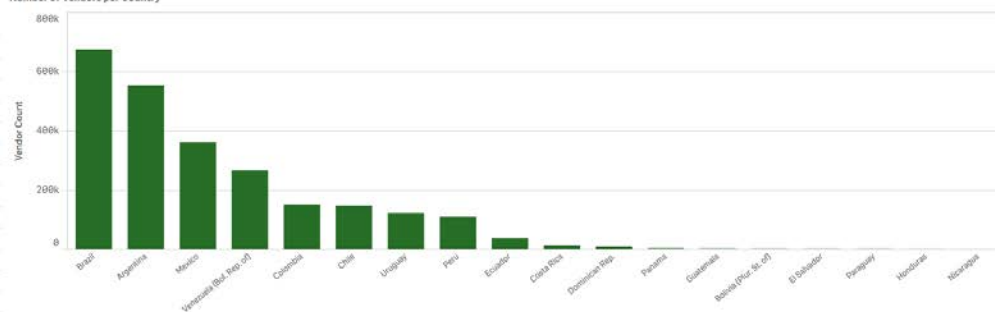
Overview Vendors Across Countries

MercadoLibre is the largest online retail platform in the region (MercadoLibre, 2018). We track 2,473,977 retailers from 18 countries. The sample was derived by retrieving information of the 'most relevant items' sold in early March 2019, sampled from all available product categories. Other sampling methodologies will lead to a different dataset and might lead to different results. Among the 2,473,977 sellers, we further concentrate our analysis on vendors that are labelled as "normal" and "active" on the platform and exclude international sellers, large brands, car dealers, franchises and real estate agencies.

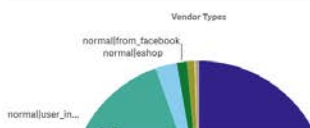
Country

Argentina
Bolivia (Plur. St. of)
Brazil
Chile
Colombia
Costa Rica
Dominican Rep.
Ecuador
El Salvador
Guatemala
Honduras
Mexico
Nicaragua
Panama
Paraguay

Number of Vendors per Country



Vendor Types



Average Transactions Completed by Vendor Type



Geography

Vendor Density *



* Currently showing a limited data set.

Payment Methods

Payment Method

3rd-party Payment Companies

Bank/ATM Transfer

Cash

Check

Contact Seller

Credit Card

Debit Card

MercadoLibre-owned Methods

Category Payment Methods/Cats. by MercadoPago

MercadoLibre-owned Methods account, money, digital, commerce, prepaid card

Bank/ATM Transfer atm, bank, transfer, Procredencia, Depósito bancario

Credit Card credit_card, tarjeta de crédito, Tarjeta de Débito

Debit Card credit_card

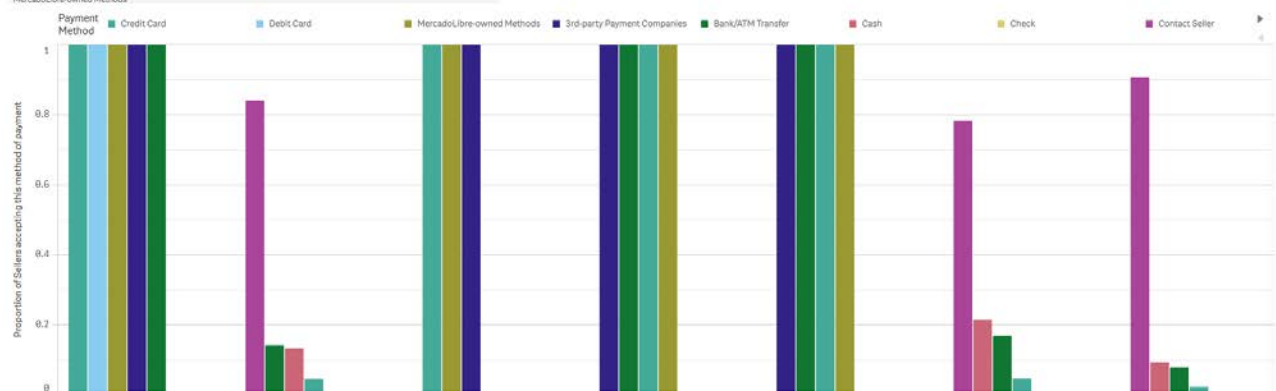
Cash efectivo

Check Cheque de garantía, Cheque

3rd-party Payment Companies none

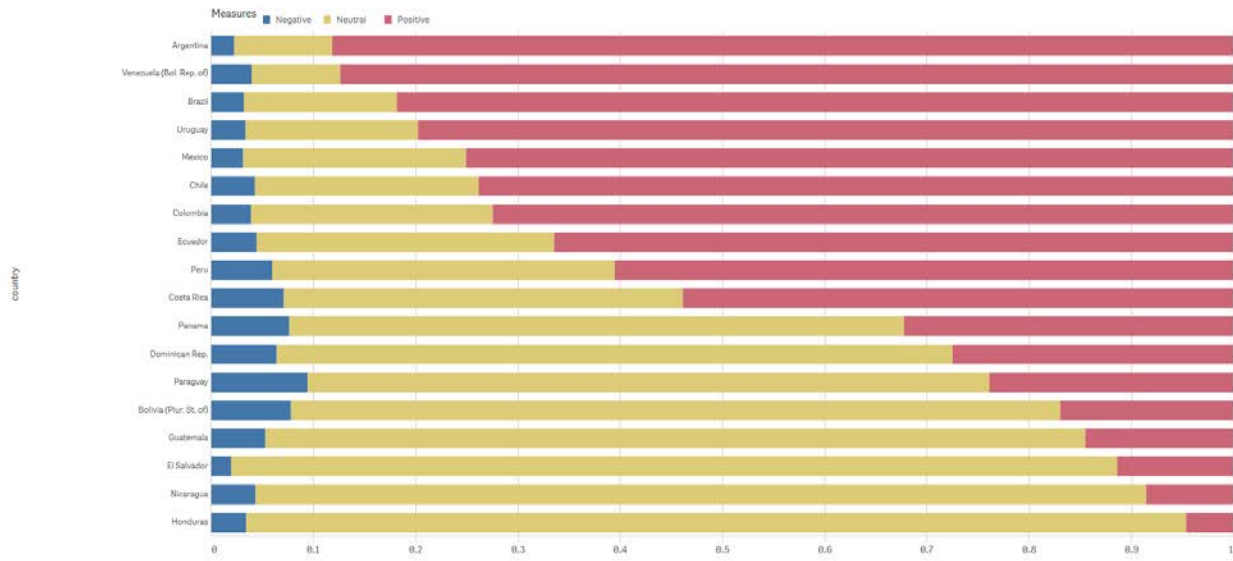
Others Page, métodos, método automático

Contact Seller Cheque



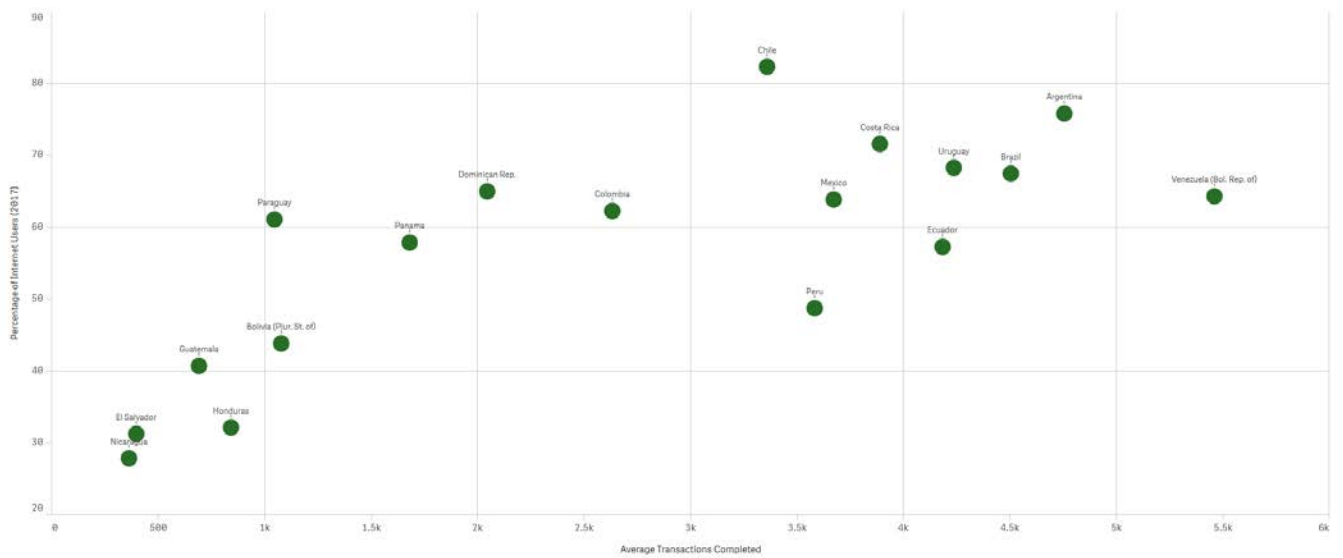
Vendor Evaluations

Vendor Evaluations



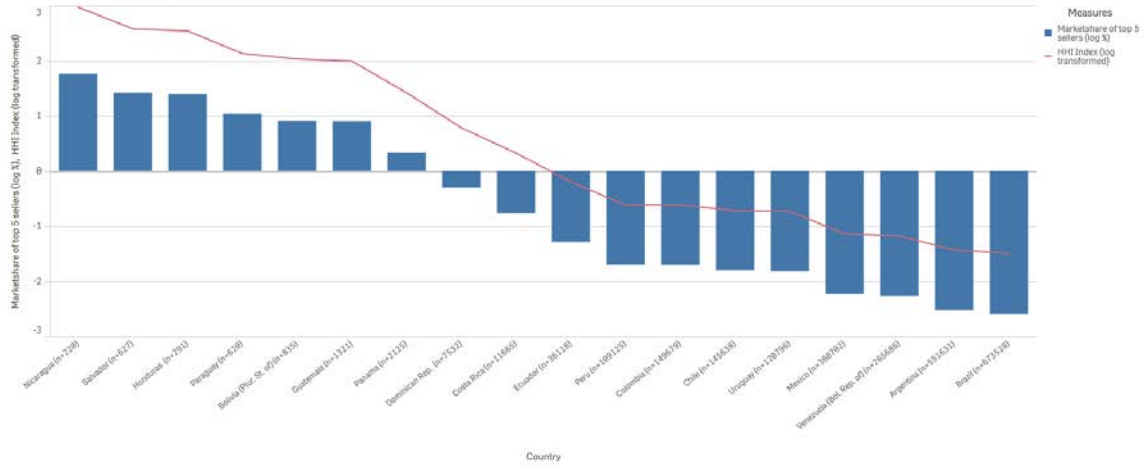
Internet Users and Transactions

Internet Users by Average Transactions

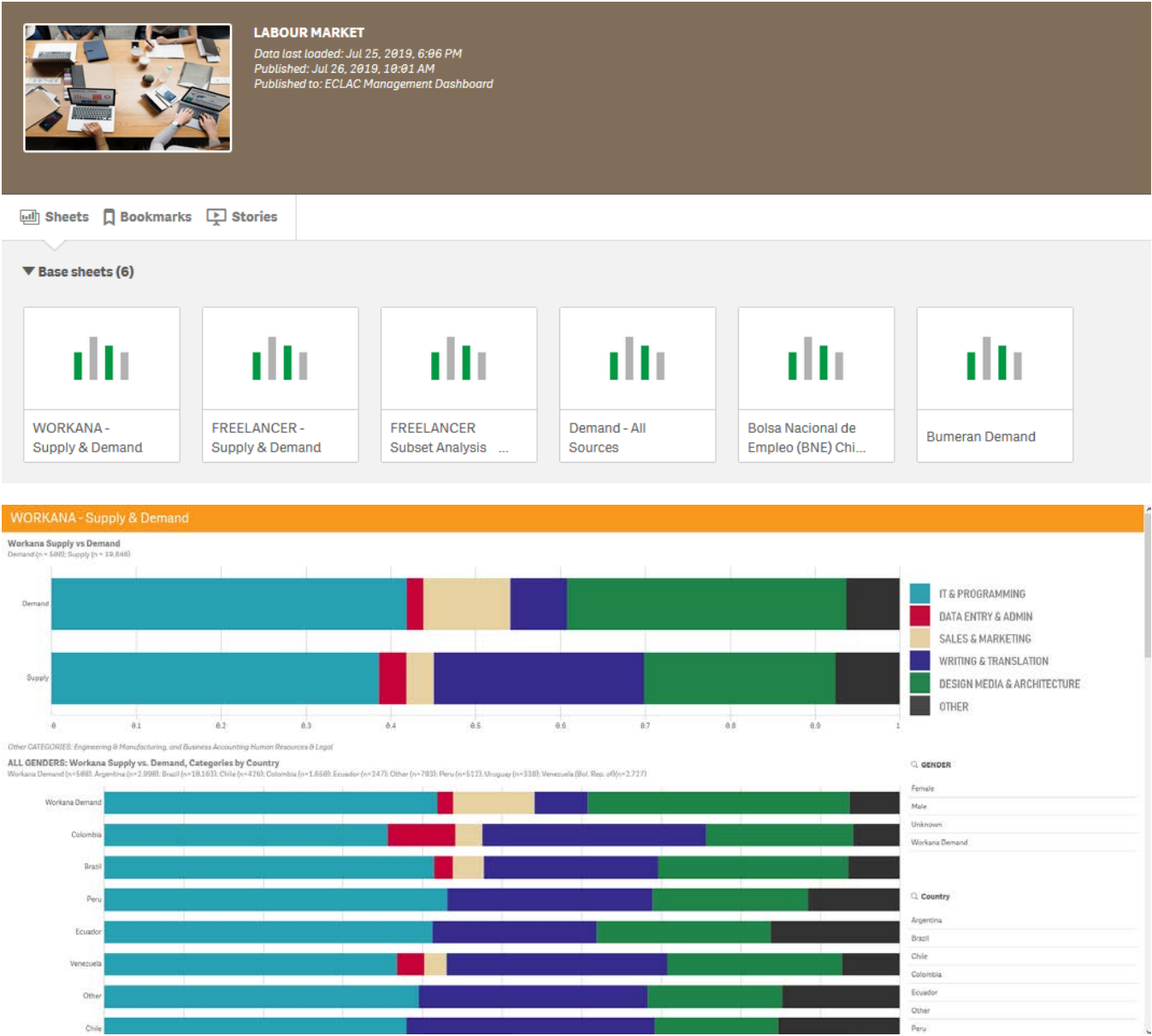


HHI

Market Share and HHI for Each Country

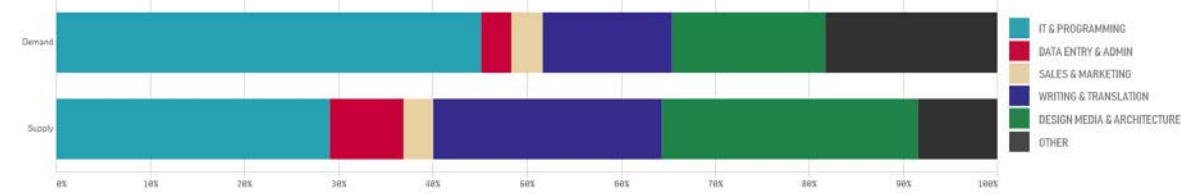


VIII. LABOR MARKET



FREELANCER - Supply & Demand

Freelancer Supply and Freelancer Global Demand
Demand (n = 98,023); Supply (n = 73,778)



Other CATEGORIES: Local Jobs & Services, Freight Shipping & Transportation, Engineering & Manufacturing, and Business Accounting Human Resources & Legal

Q. GENDER

ALL GENDERS: Freelancer Supply vs. Demand, Categories by Country

Freelancer Demand (n=98,023); Argentina (n=11,773); Bolivia (Plur. St. of) (n=848); Brazil (n=14,889); Chile (n=2,484); Colombia (n=8,171); Costa Rica (n=1,863); Dominican Republic (n=1,881); Ecuador (n=1,565); El Salvador (n=947); Guatemala (n=881); Honduras (n=578); Mexico (n=9,883); Nicaragua (n=724); Other (n=784); Panama (n=641); Peru (n=3,983); Uruguay (n=1,592); Venezuela (Bol. Rep. of) (n=11,248)

female

Global/Freelancer Demand

male

unknown

Q. COUNTRY

Argentina

Bolivia (Plur. St. of)

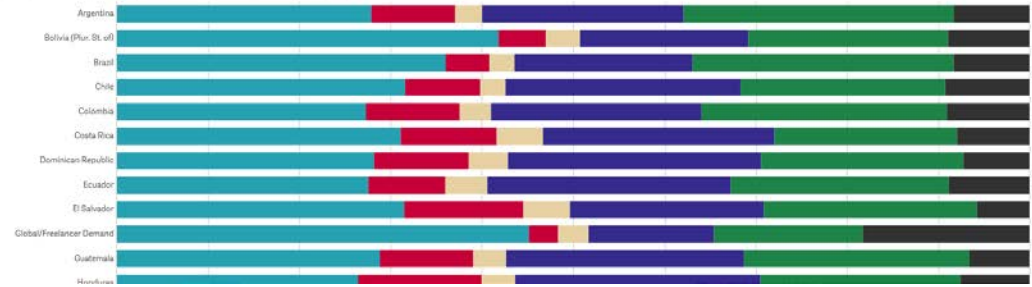
Brazil

Chile

Colombia

Costa Rica

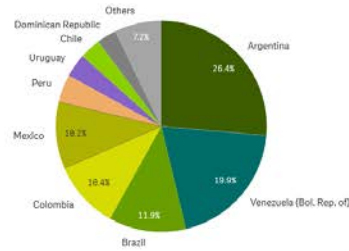
Dominican Republic



FREELANCER - Subset Analysis Earnings

Country Shares of Freelancer Total Earnings

Total Number of Projects: Argentina (n=16,804); Bolivia (Plur. St. of) (n=850); Brazil (n=9,792); Chile (n=1,581); Colombia (n=8,165); Costa Rica (n=883); Dominican Republic (n=1,748); Ecuador (n=964); El Salvador (n=1,847); Guatemala (n=671); Honduras (n=337); Mexico (n=8,837); Nicaragua (n=581); Other (n=217); Panama (n=249); Peru (n=3,928); Uruguay (n=1,889); Venezuela (Bol. Rep. of) (n=1,762)



NUMBER OF FREELANCERS WITH REPORTED INCOME, PER COUNTRY: Argentina (n=1,188); Bolivia (Plur. St. of) (n=61); Brazil (n=1,181); Chile (n=144); Colombia (n=688); Costa Rica (n=53); Dominican Republic (n=125); Ecuador (n=95); El Salvador (n=88); Guatemala (n=63); Honduras (n=32); Mexico (n=878); Nicaragua (n=37); Other (n=62); Panama (n=33); Peru (n=192); Uruguay (n=153); Venezuela (Bol. Rep. of) (n=176)

Total Earnings, by Country

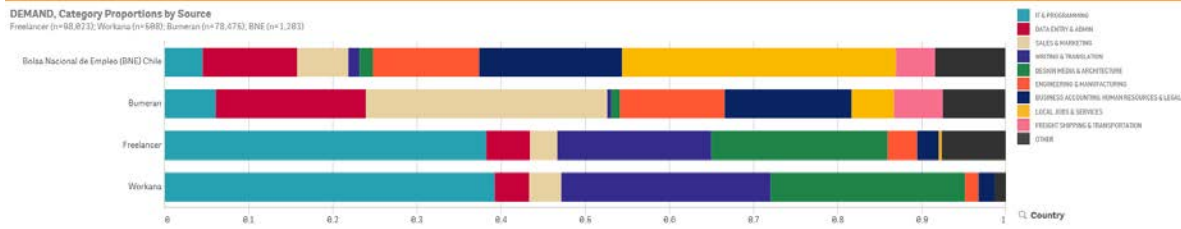
Total Number of Projects: Argentina (n=16,804); Bolivia (Plur. St. of) (n=850); Brazil (n=9,792); Chile (n=1,581); Colombia (n=8,165); Costa Rica (n=883); Dominican Republic (n=1,748); Ecuador (n=964); El Salvador (n=1,847); Guatemala (n=671); Honduras (n=337); Mexico (n=8,837); Nicaragua (n=581); Other (n=217); Panama (n=249); Peru (n=3,928); Uruguay (n=1,889); Venezuela (Bol. Rep. of) (n=1,762)



Demand - All Sources

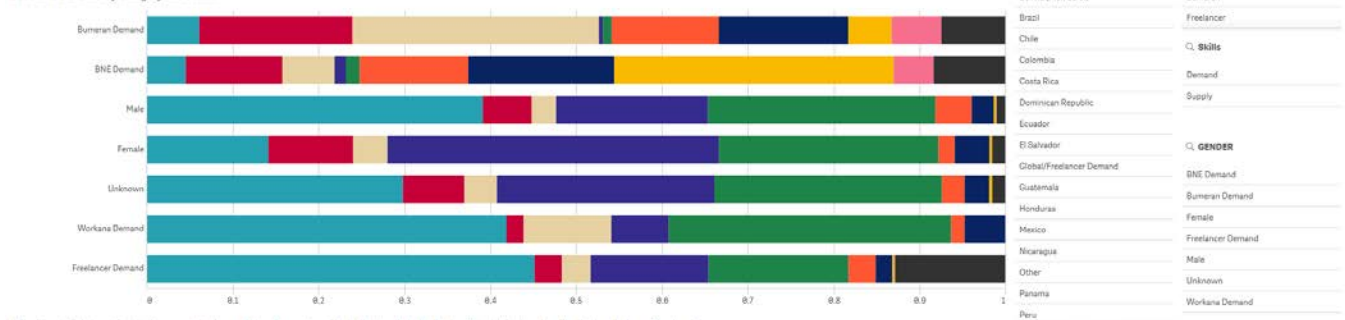
DEMAND, Category Proportions by Source

Freelancer (n=68,873), Workana (n=588), Bumeran (n=78,473), BNE (n=1,283)



Other CATEGORY: Farming, Fishing and Forestry, Government Employees, Military, Community and Social Services, Protective Services, Cleaning Services, Chauffeur Services, Restaurant Services, etc.

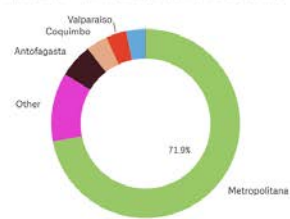
SUPPLY & DEMAND by Category and Gender



Bolsa Nacional de Empleo (BNE) Chile Demand

BNE: Region Proportions

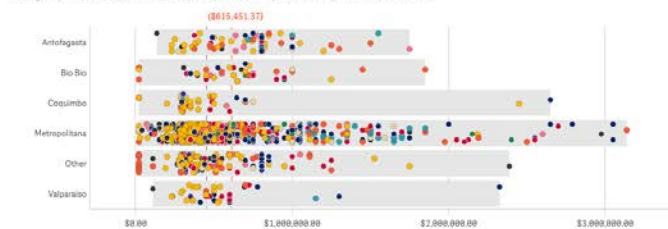
Antofagasta (n=78), Bio Bio (n=48), Coquimbo (n=44), Metropolitana (n=865), Other (n=142), Valparaíso (n=42)



Other REGION: Arica y Parícutas, Atacama, La Araucanía, Los Lagos, Maule, O'Higgins, Aysén, Los Ríos, Magallanes y Antártica Chilena, Tarapacá, and Nuble

BNE: Average Salary, by Category and Region

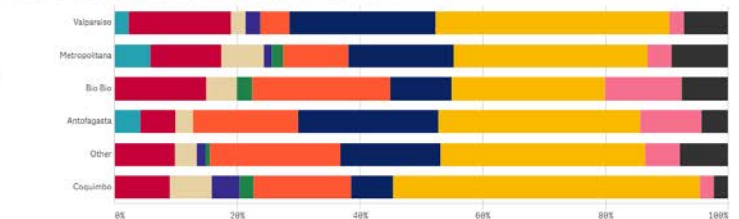
Antofagasta (n=78), Bio Bio (n=48), Coquimbo (n=44), Metropolitana (n=865), Other (n=142), Valparaíso (n=42)



Other REGION: Arica y Parícutas, Atacama, La Araucanía, Los Lagos, Maule, O'Higgins, Aysén, Los Ríos, Magallanes y Antártica Chilena, Tarapacá, and Nuble; Other CATEGORY: Janitorial Services, Restaurant Services, Hotel/Hospitality Services, etc.

BNE: Category Proportions, by Region

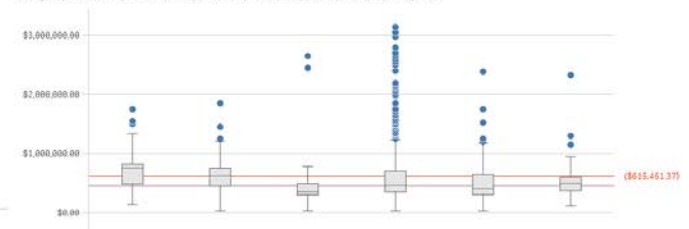
Antofagasta (n=78), Bio Bio (n=48), Coquimbo (n=44), Metropolitana (n=865), Other (n=142), Valparaíso (n=42)



Other REGION: Arica y Parícutas, Atacama, La Araucanía, Los Lagos, Maule, O'Higgins, Aysén, Los Ríos, Magallanes y Antártica Chilena, Tarapacá, and Nuble; Other CATEGORY: Janitorial Services, Restaurant Services, Hotel/Hospitality Services, etc.

BNE: Average Salary, by Region

Antofagasta (n=78), Bio Bio (n=48), Coquimbo (n=44), Metropolitana (n=865), Other (n=142), Valparaíso (n=42)

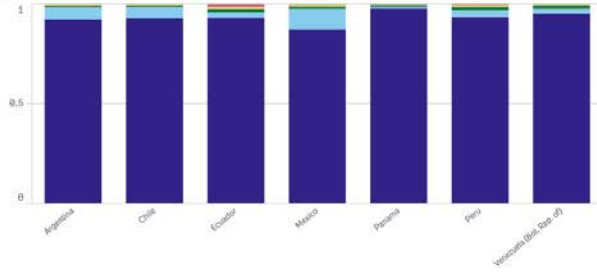


Other REGION: Arica y Parícutas, Atacama, La Araucanía, Los Lagos, Maule, O'Higgins, Aysén, Los Ríos, Magallanes y Antártica Chilena, Tarapacá, and Nuble

Bumeran Demand

Proportions, Job Types

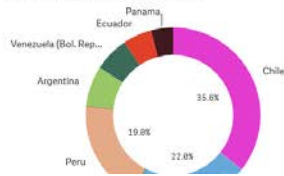
Argentina (n=5,917); Chile (n=27,939); Ecuador (n=4,198); Mexico (n=17,247); Panama (n=3,192); Peru (n=14,986); Venezuela (Bol. Rep.) (n=5,886)



Type of Employment
 Contract/Temporary Internship Part-Time
 Full-Time Other

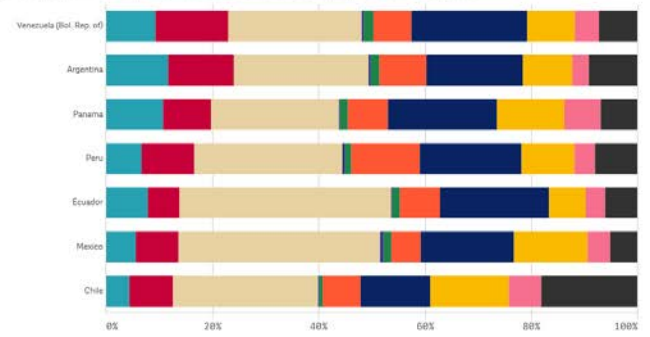
Other: Weekends, Volunteer, Telecommunication, First Job, and Hourly-Contract

Bumeran Job Posts, Country Proportions



Bumeran Category Proportions, by Country

Argentina (n=5,917); Chile (n=27,939); Ecuador (n=4,198); Mexico (n=17,247); Panama (n=3,192); Peru (n=14,986); Venezuela (Bol. Rep.) (n=5,886)



Other: Farming, Fishing and Forestry, Government Employees, Military, Community and Social Services, Protective Services, Cleaning Services, Chauffeur Services, Restaurant Services, etc.

Bumeran Sub-Categories, by Country

