



Data Jobs Salaries in Mexico in August 2022

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Executive Summary

With the emergence of the big data, novel jobs have appeared demanding new sets of skills and expertise for extracting value from often raw and unstructured information. To cope with this challenge, several data profiles have evolved: Business Analysts, Data Analysts, Data Architects, Data Engineers and Data Scientists.

For job seekers and recruiters, it is relevant to know what the salaries for each of those categories are. So, the question guiding the present analysis was: Which data job category has the highest salary in the Mexican labor market in August 2022 according to the OCC website? Thus, in the present study, data about job titles, salaries, employers, and locations was collected from the OCC website (Mexico) through web scraping. Then, the data was cleaned, analyzed and visualized using Python 3 and its libraries. It was found that Data Architects and Data Scientists enjoyed the highest earnings with an average monthly salary considering outliers of about 70,000 MXN and 50,000 MXN, respectively, whereas the Data Analyst positions had the lowest ones with an average monthly salary of about 20,000 MXN (figure 1).

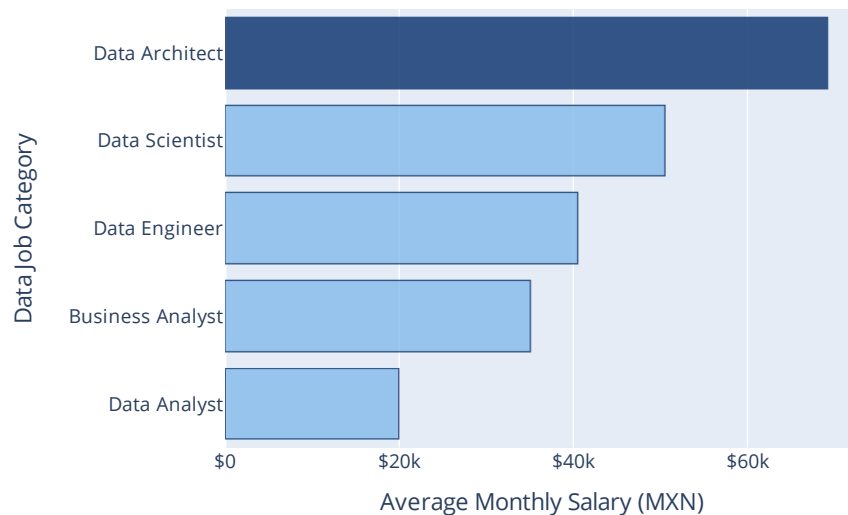


Figure 1. Average monthly salary for each data job category in Mexico in August 2022 (own elaboration).

Nonetheless the average salary for Data Architects was higher than that for Data Scientists, it was found that the difference was not statistically significant. However, it is important to bear in mind that the observations of salaries for those positions were scarce and might not be fully representative.

Moreover, it was observed that Ciudad de México was the location where the greatest number of data jobs were concentrated along with the highest salaries. And, finally, it was identified that the companies with the greatest demand of data positions were Banamex, Softtek and Grupo Salinas; and the ones offering the highest salaries were Zegovia RH, Noralogic and Trinity Rail de México.

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1. Introduction

With the massification of the digital devices and technologies, it has been possible to collect large amounts of data as it had not been done in the past. Thus, novel technologies, innovative companies and new jobs have appeared to deal with such amount of information in order to extract value and, hopefully, financial return. In this sense, with the emergence of the big data, a new data jobs market has appeared to provide the skilled labor needed to accomplish this task.

According to Axis Talent (2020), the data jobs market can be analyzed and classified into the next several sometimes-overlapping job profiles: Business analysts, data analysts, data architects, data engineers and data scientists.

Business Analysts (BA) optimize organizational resources by using data-driven analysis (Axis Talent, 2020). Because of the nature of their responsibilities, business analysts need substantial knowledge and expertise on their particular industry and organization. Conversely, Data Analysts (DA) extract information to support and enhance the decision-making process (Kudyba, 2014). They usually use spreadsheets applications, business intelligence software as well as data visualization tools to perform their responsibilities (Axis Talent, 2020; Kudyba, 2014).

On the other hand, Data Architects (DR) design the company data management framework. Therefore, deep knowledge and skills on databases, ETL process and big data technologies are mandatory to fulfill this position (Axis Talent, 2020). Whereas Data Engineers (DE) are responsible for building, implementing maintaining and optimizing the framework and processes that will extract, transform, load, and deliver data to relevant users; as well as taking steps to ensure the quality and reliability of the same (Axis Talent, 2020).

Finally, Data Scientists (DS) extract insights from both structured and unstructured data, by acquiring, exploring, cleaning, and transforming information to create machine learning models that help them to make predictions on some outcome of interest (Grus, 2019).

Even though the different data jobs overlap at certain extent, they undoubtedly require a different set of knowledge and skills to cope successfully with their functions and responsibilities. Thus, for jobseekers and recruiters it is relevant to know what set of knowledge and skills is more valued in the Mexican labor market currently.

In this context, the purpose of the present study is to identify which data job category has the highest salary in the Mexican labor market in the present moment (August 2022).

2. Methodology

The methodology of the present study is based on Rollin's Foundational Methodology for Data Science (Rollins, 2015).

2.1 Objective

General objective

To identify which data job category has the highest salary in the Mexican labor market in August 2022 according to the OCC website.

Specific objectives

- To find what is the most demanded data job.
- To identify in which Mexican state the demand of data jobs is the greatest.
- To explore the data jobs demand per Mexican state.
- To identify what companies demand the greatest number of data jobs.
- To explore the data jobs demand per company.
- To explore the location of the companies demanding data jobs.
- To identify in which Mexican state the highest salaries are offered.
- To identify what companies offer the highest salaries.

2.2 Research question

Which data job category has the highest salary in the Mexican labor market in August 2022 according to the OCC website?

2.3 Hypothesis

In accordance with Davenport & Patil's statement that Data Scientist is "the sexiest job of the 21st century" (Davenport & Patil, 2012), it was hypothesized that Data Scientist is the data job category with the highest salary in the Mexican labor market in August 2022.

2.4 Analytical approach

Descriptive and inferential statistics were used in order answer the research question (see 2.8 *Statistical analysis* below).

2.5 Data requirements

Data about job positions such as job title, salary, employer, and location were set as data requirements. For the purposes of the present study, no distinction was made among entry level, middle or senior positions.

2.6 Data collection

Data was collected from the OCC website (Mexico) on 03 August 2022, through web scraping with Python 3 and its libraries Requests and Selenium. The OCC website was selected due to their more lenient policy for automated process of information retrieval and its importance as a platform for both recruiters and job seekers.

2.7 Data understanding and preparation

Data was explored and prepared with Python 3 and its libraries Numpy, Pandas, Matplotlib and Seaborn.

2.8 Statistical analysis

Data was analyzed through descriptive and inferential statistics in Python 3 and its libraries Pandas, Scipy and Statsmodels. Average salaries were obtained for each data job category. Furthermore, a box plot and histograms were constructed to visualize the distribution of the salaries, overall and across the data job categories.

Both parametric (ANOVA and t-test with unequal variance) and non-parametric (Mann-Whitney U and Kruskal-Wallis H) tests were carried out to assess the significance of the obtained results.

Firstly, a D'Agostino-Pearson normality test (omnibus) was carried out to assess the normality of the data jobs salary distribution.

Then, a one-way analysis of variance (ANOVA) procedure and a Kruskal-Wallis H test were carried out to detect whether the average salary differences for the distinct data jobs categories were statistically significant.

Finally, pairwise t-tests for two independent samples assuming unequal variances and Mann-Whitney U tests were used to assess whether the average salary for different data jobs categories was significantly different.

2.9 Data visualization

Along with the statistical analysis, data was visualized with Python 3 and its libraries Matplotlib, Seaborn, Folium, Squarify and Plotly; and an interactive Dashboard was created using Dash and Plotly.

A variety of figures such as pie charts, choropleth maps, bar charts, heatmaps, treemaps, histograms and boxplots were used to extract insights from the data.

3. Results and Discussion

3.1 Data collected

Data collection and cleaning allowed to identify 444 data jobs in Mexico in August 2022 from the OCC Website, of which 157 had salary information (35.4%). The whole data set was used in the data jobs demand analysis below and the job positions with salary information were used in the salary analysis more below.

3.2 Data jobs demand analysis

Most demanded data job

From the whole universe of data jobs identified, more than a third of the data jobs (**36%**) correspond to positions of **Data Analyst**, rendering them as **the most demanded** ones in the Mexican labor market at the time of this study (August 2022) (figure 2).

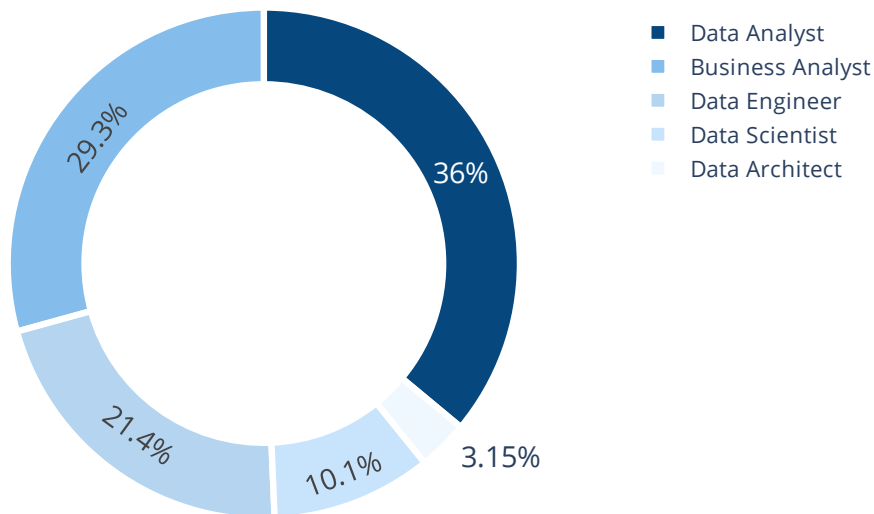


Figure 2. Proportion of vacancies for each data job category in Mexico in August 2022 (own elaboration).

In addition, from figure 2, it is also possible to observe that Business Analysts (29.3%) and Data Engineers (21.4%) positions account for the other half of the data jobs demand in Mexico at that moment.

It is also noteworthy that Data Engineer positions are more demanded than Data Scientist positions with a 21% and an 10%, respectively.

On the contrary, Data Architect positions are the less demanded, with only a 3% out of the total, which might suggest that latter data job profile is still not well developed in the Mexican labor market and that their functions are fulfilled by Data Engineers.

Location where most data jobs are demanded

On the other hand, as expectable, most of the data jobs demand is located in **Ciudad de México, Estado de México, Nuevo León** and **Jalisco**, the most important economic poles in the country (figure 3).

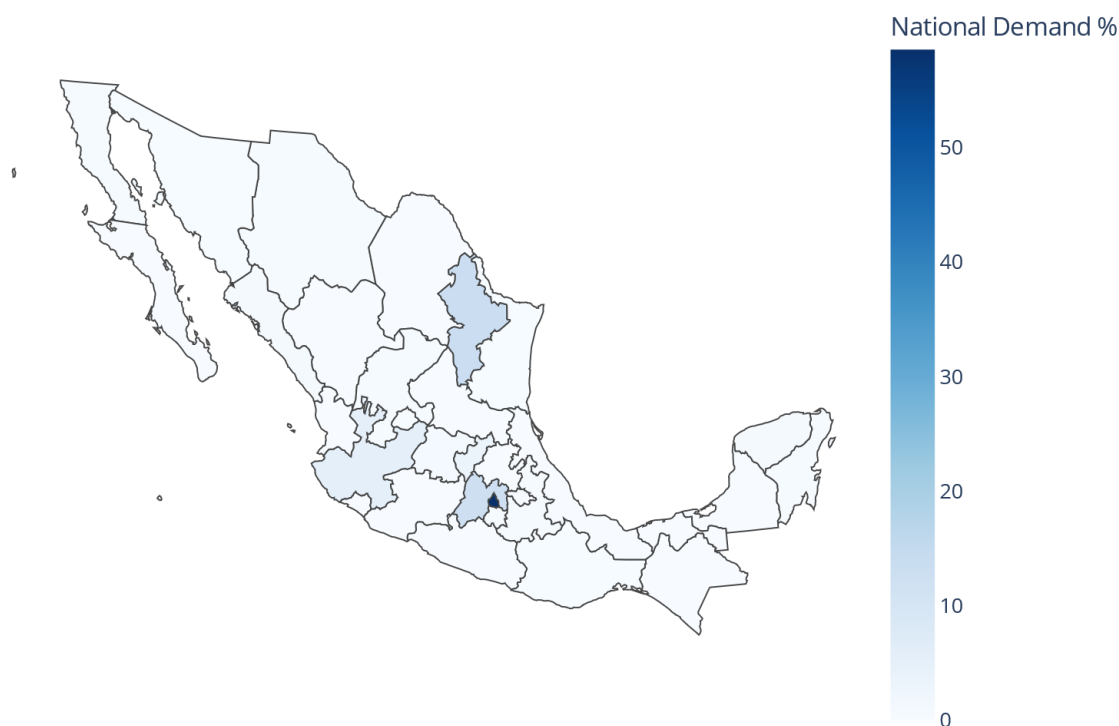


Figure 3. Data jobs demand per state in Mexico in August 2022 (own elaboration).

In view of figure 3, it is observed that the data jobs demand is **highly concentrated** in **Mexico City** (“Ciudad de México”, in Spanish) with about the 60% of the total national demand. On the other hand, Nuevo León and Estado de México represent a distant second place with about the 13% of the demand each. Finally, Jalisco and Querétaro accounts for about the 5% and 4% of the demand, respectively.

Therefore, the combined demand in Ciudad de México, Nuevo León and Estado de México accounted for 84% of the vacancies, which suggest the extremely high level of concentration of the data jobs demand in the country.

Data jobs demand per state

The data jobs demand per state is shown in the figure 4.

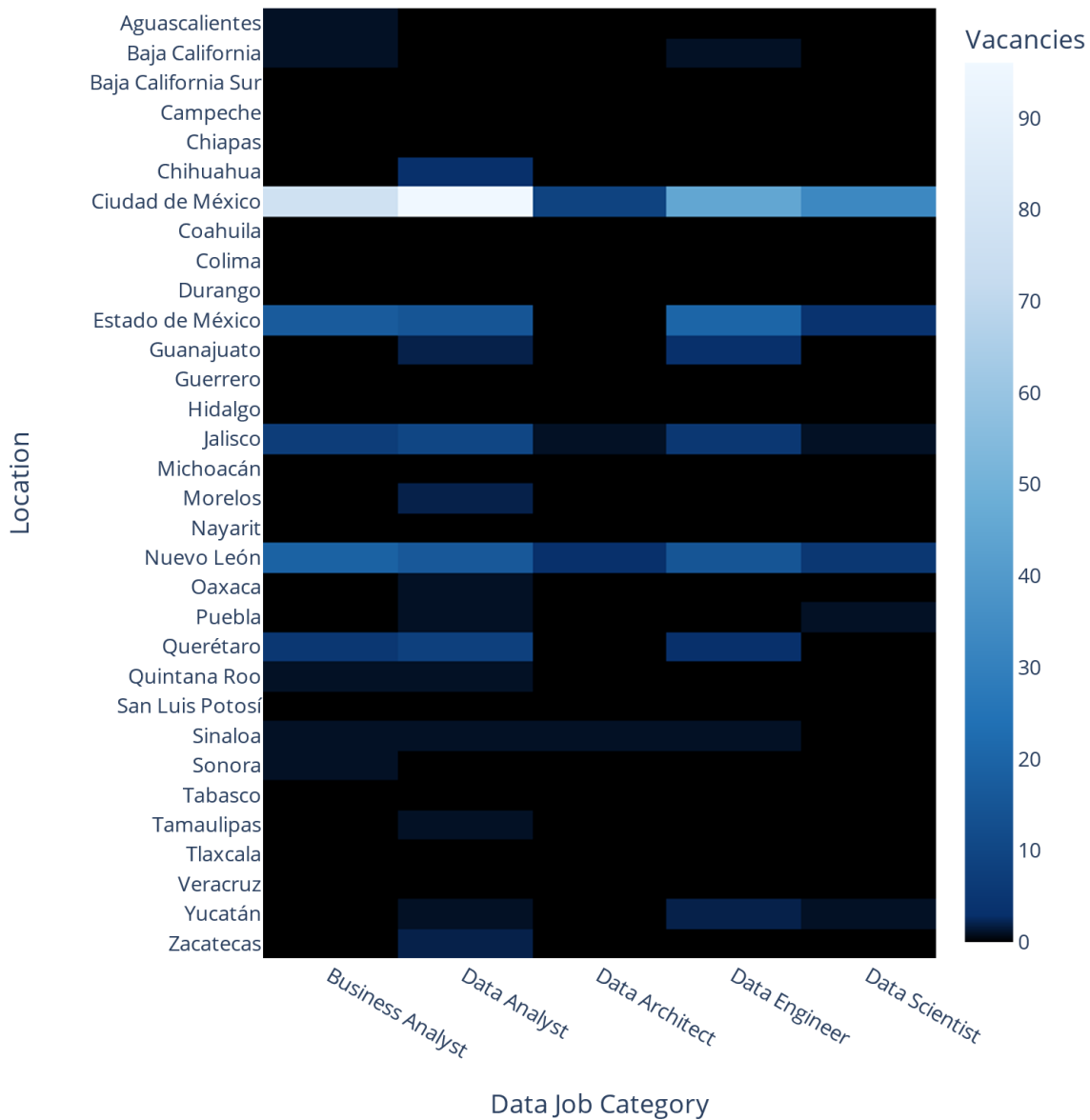


Figure 4. Data jobs demand per category and location in August 2022 (own elaboration).

From the plot above, it is possible to observe that, undoubtedly, **Ciudad de México**, **Nuevo León**, **Estado de México**, and **Jalisco** are the locations where most of the data jobs are demanded, while the rest of the country is lagging in terms of data jobs creation. Moreover, it is noteworthy that the **Data Analyst** position is the one most demanded across the Mexican states along with **Data Engineer** and **Business Analyst** positions, whereas **Data Architect** and **Data Scientist** positions are highly concentrated in Ciudad de México and Nuevo León.

As shown above, the data jobs demand is largely concentrated in **Ciudad de México**, whereas **Nuevo León**, **Estado de México**, and **Jalisco** are distant second, third and fourth places, respectively. In this sense, the data jobs demand per category in those locations, the top 5 states with the highest demand, was further explored (figure 5).

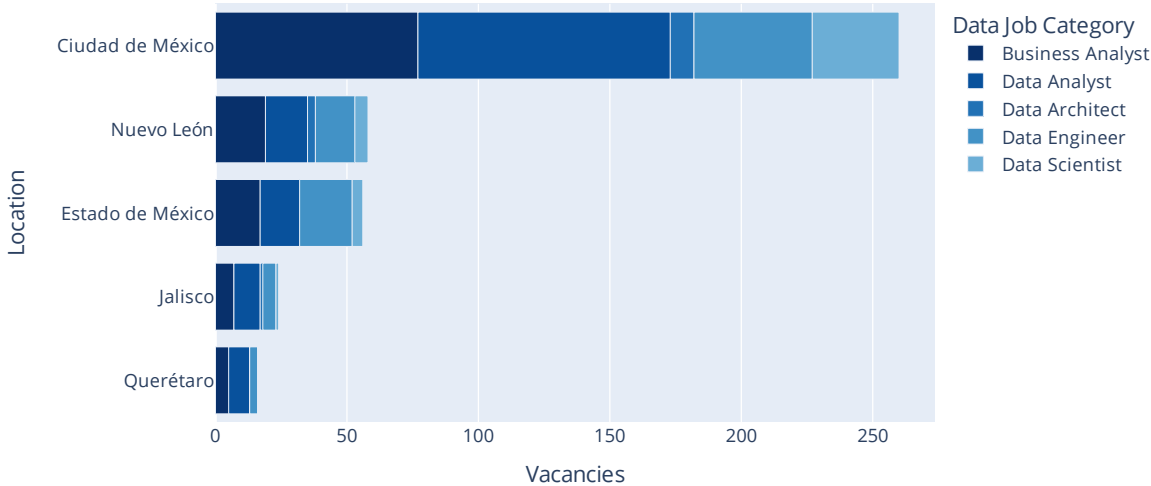


Figure 5. Data jobs demand per category in Ciudad de México, Estado de México, Nuevo León, Jalisco and Querétaro in August 2022 (own elaboration).

From figure 5, data jobs demand in Ciudad de México exceeds by far the demand in any other state. In this sense, Data Analyst's, Business Analyst's, and Data Engineers' demand in Ciudad de México accounts for 21.6%, 17.3%, and 10.1%, respectively, of all the data jobs in the country.

On the other hand, considering the national demand of data jobs per category, the demand in Ciudad de México and its weight is shown in the table 1.

Table 1. Data jobs demand in Ciudad de México and its weight in the national demand.

Data Job Category	Demand in Ciudad de México (Vacancies)	National Demand (Vacancies)	Demand in Ciudad de México (% of National Demand)
Business Analyst	77	130	59%
Data Analyst	96	160	60%
Data Architect	9	14	64%
Data Engineer	45	95	47%
Data Scientist	33	45	73%
All	260	444	59%

Thus, in view of the table 1, some positions such as **Data Architect** and **Data Scientist** are **highly concentrated in Ciudad de México**, with 73% and 64% of the national demand for said categories, respectively. On the other hand, **Data Engineer** positions are the ones more demanded outside Ciudad de México with just a 47% of the national demand.

On the other hand, it is noteworthy that, the majority of the demand is comprised by Data Analyst positions in most of the states. However, there is also a significant demand of Business Analyst and Data Engineer positions across the country. On the contrary, demand for Data Architect positions could only be found mostly in Ciudad de México and Nuevo León.

Companies demanding more data jobs

Regarding the companies with the greatest demand of data jobs, the top 15 are shown in the figure 6.

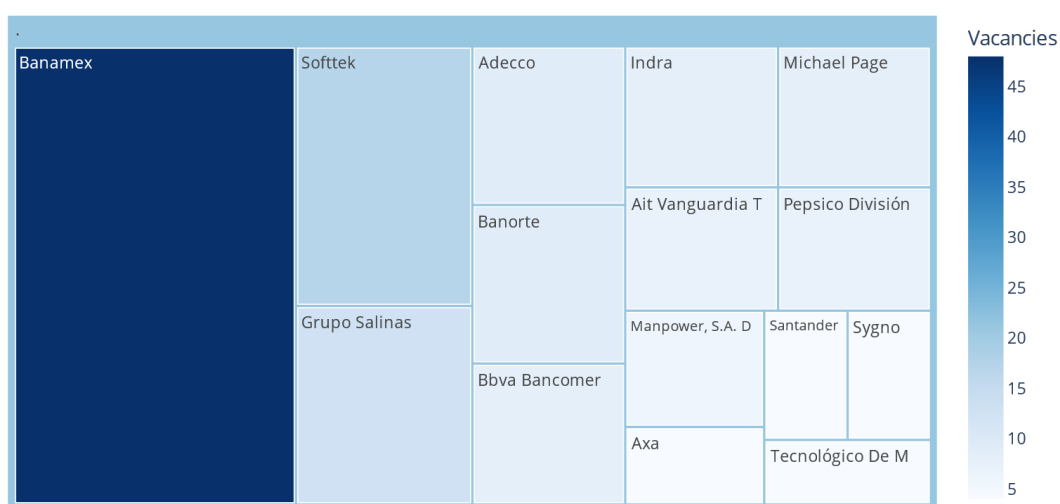


Figure 6. Top 15 companies with the highest demand of data jobs in Mexico in August 2022 (own elaboration).

So, **Banamex** is nowadays the biggest seeker of data skills in the Mexican labor market, along with **Softtek**, and **Grupo Salinas**. In the case of Adecco, it is reasonable to think that their data job vacancies are published on behalf of other companies. So, even though, the data jobs demand may vary along time, the current interest of such companies in data science and analytics might convert them in interesting prospects for job seekers.

It is also noteworthy that 4 banks (Banamex, Banorte, BBVA Bancomer and Santander) are part from the top 15, which suggest that **the banking sector in Mexico** is currently very interested in capitalizing the huge amounts of data that their clients produce every day.

Data jobs demand per company

The data jobs demand per company in the top 30 companies with the highest data jobs demand is shown in the figure 7.

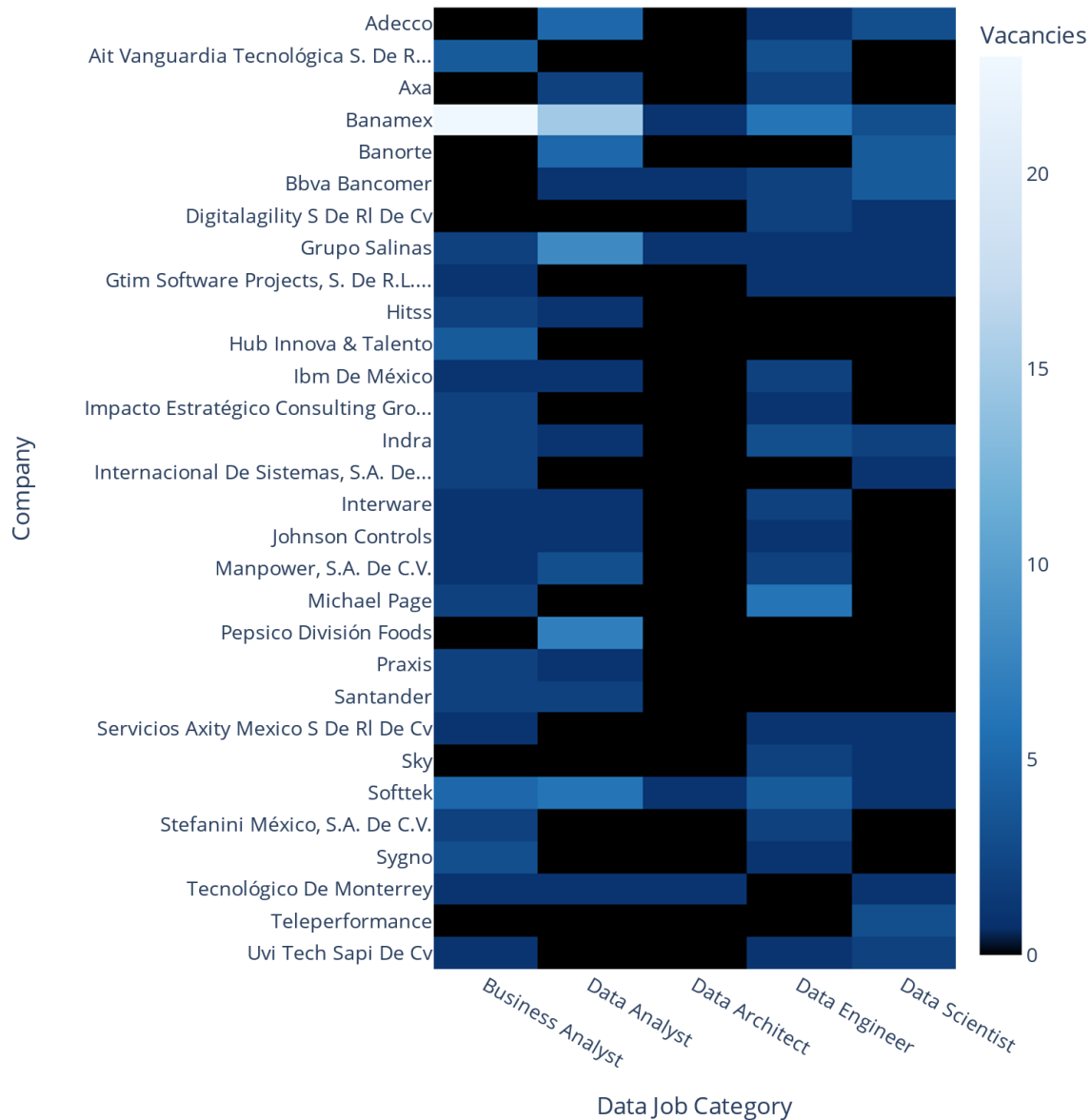


Figure 7. Demand per data job category in the top 30 companies with the highest data jobs demand in August 2022 (own elaboration).

The above heatmap suggests that **Business Analyst**, **Data Engineer** and **Data Analyst** positions are more demanded across different organizations. On the contrary, **Data Scientist** and, certainly, **Data Architect** vacancies are more likely to be found in more specific organizations like tech companies (Digitalability, Gtim Software Projects, Indra, Softtek, Uvi Tech, etc.) and banks (Banamex, Banorte, BBVA Bancomer).

Location of the top companies demanding data jobs

The location of the top 30 companies demanding data jobs is shown in the figure 8.

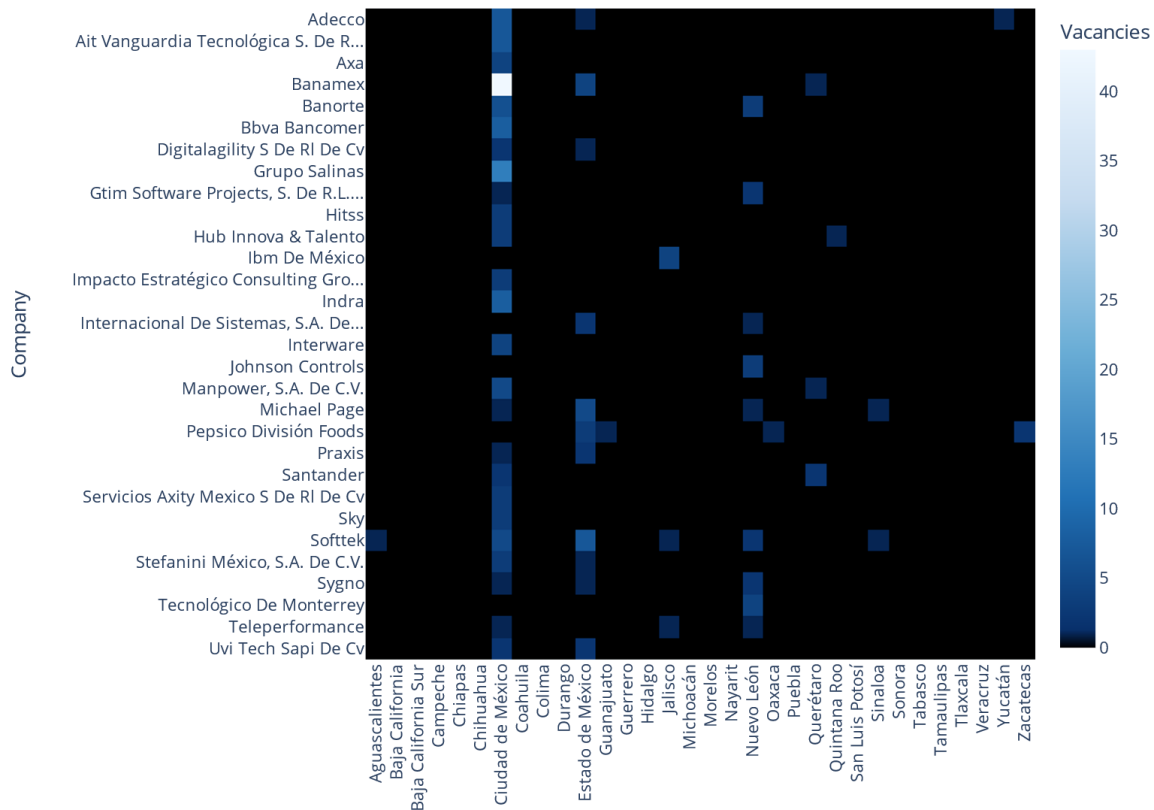


Figure 8. Top 30 companies demanding data jobs per location in August 2022 (own elaboration).

As expectable, most of the companies are located in **Ciudad de México** as the large majority of the vacancies are offered there. However, the heatmap shows that there are some organizations that spread across several Mexican states such as Banamex, Pepsico, Softek, Sygnio and Teleperformance.

Furthermore, there are few a well-known companies whose data jobs demand is not located in the capital region, such as IBM (Jalisco), Johnson Controls (Nuevo León) and Tecnológico de Monterrey (Nuevo León).

On the other hand, a heatmap showing all the companies demanding data jobs by location is shown in the figure 9.

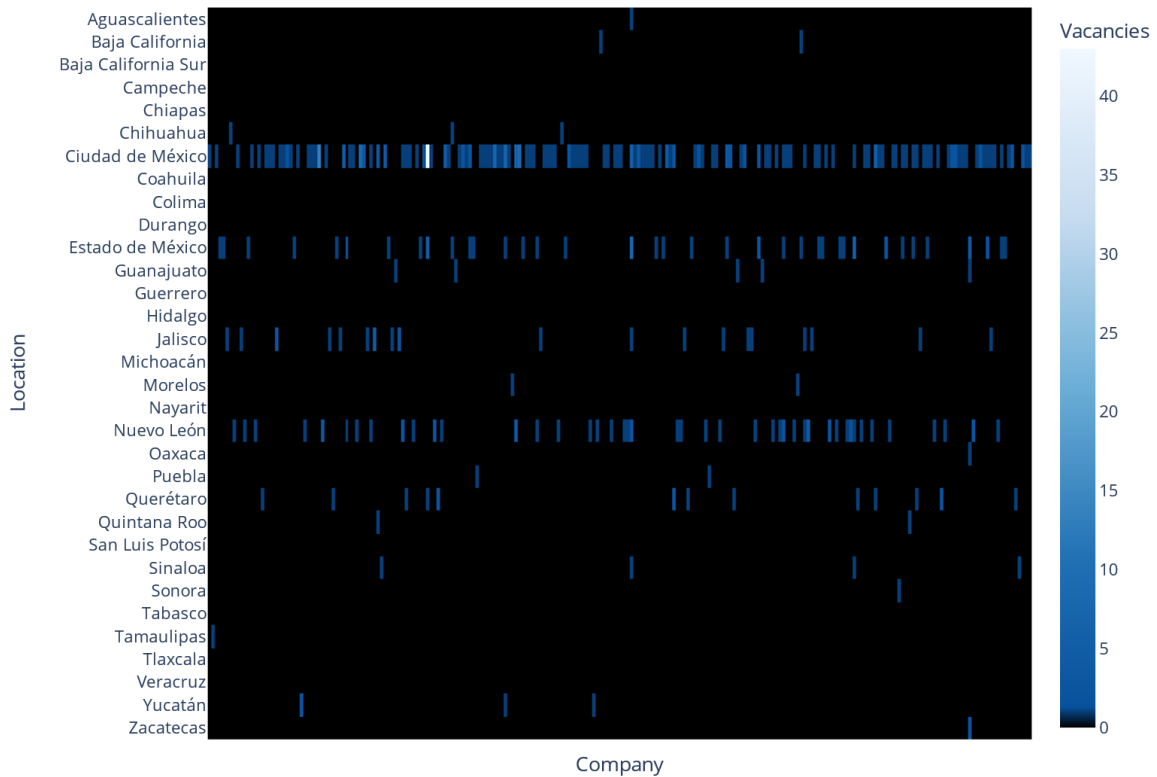


Figure 9. Companies demanding data jobs per location in August 2022 (own elaboration).

Likewise, the above heatmap beautifully shows that most of the data jobs are concentrated in **Ciudad de México** and, into a lesser extent, in **Estado de México**, **Nuevo León** and **Jalisco**.

3.3 Salary analysis

Salaries distribution

For the salary analysis, the number of salary observations per data job category is shown in the figure 10.

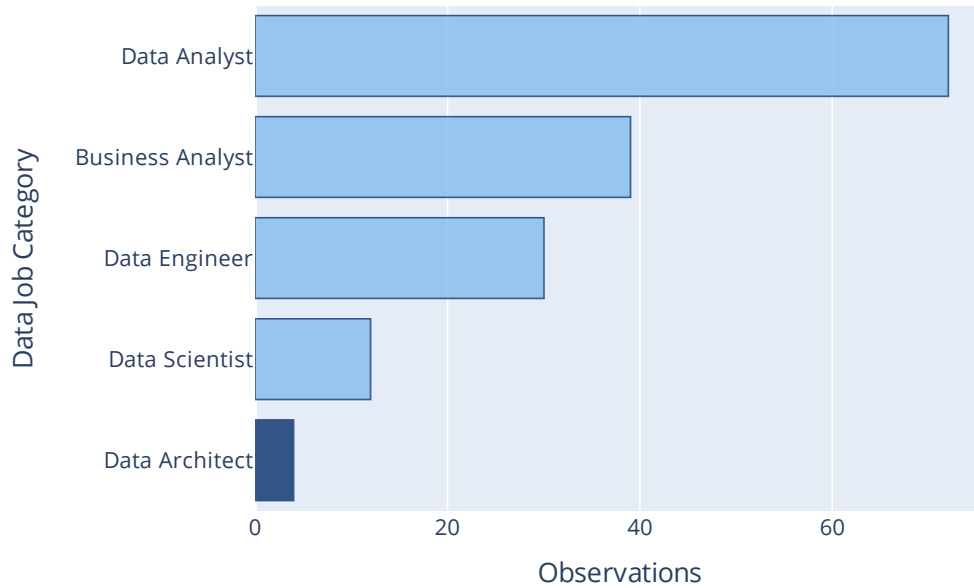


Figure 10. Number of salary observations per data job category (own elaboration).

In view of the figure 10, it is necessary to be cautious by interpreting the salary results for the Data Architect and Data Scientist positions, as very few observations were collected.

Overall, the average salary of the data jobs in Mexico in August 2022 was **31,179.34 MXN ($SD = 18,589.32$)** per month. The distribution of the salary is shown in the figure 11.

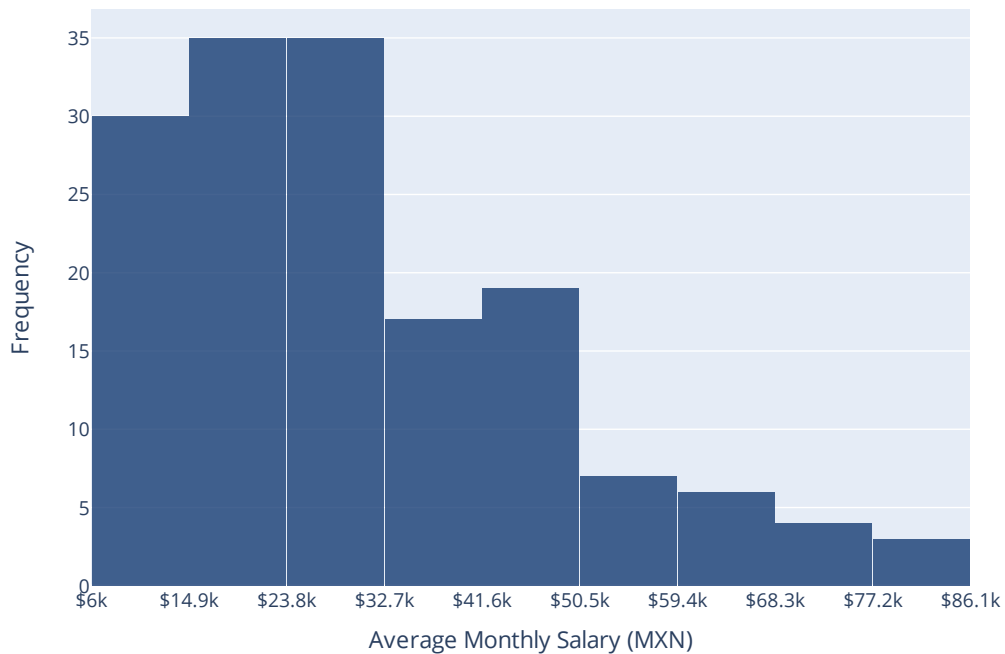


Figure 11. Histogram of salary distribution of the data jobs in Mexico in August 2022 (own elaboration).

From figure 11, it is noteworthy that the salary distribution is skewed to the left. So, it might not comply with the normality assumption. In this sense, **most of the salaries are found in the range from 14,900 to 32,700 MXN.**

In this context, a D'Agostino-Pearson normality test was carried out to assess whether the data jobs salary distribution complied with the assumption of normality. The hypotheses are as follows:

$$H_0: \text{Normal Distribution}$$

$$H_1: \text{Not } H_0$$

$$\alpha = 0.05$$

The results of the D'Agostino-Pearson normality test are shown in the table 2.

Table 2. D'Agostino-Pearson normality test results of the data jobs salary normality distribution at a signification level of $\alpha = 0.05$.

<i>K² statistic</i>	<i>p-value</i>
26.312	<0.001

Indeed, as the p -value is significant ($p < 0.05$), the null hypothesis that the sample comes from a normal distribution is **rejected**.

Indeed, only the salary observations for the **Business Analyst** and **Data Engineer** positions resemble a normal distribution, whereas it is not possible to state the same with the observations for the other data job categories (figure 12).

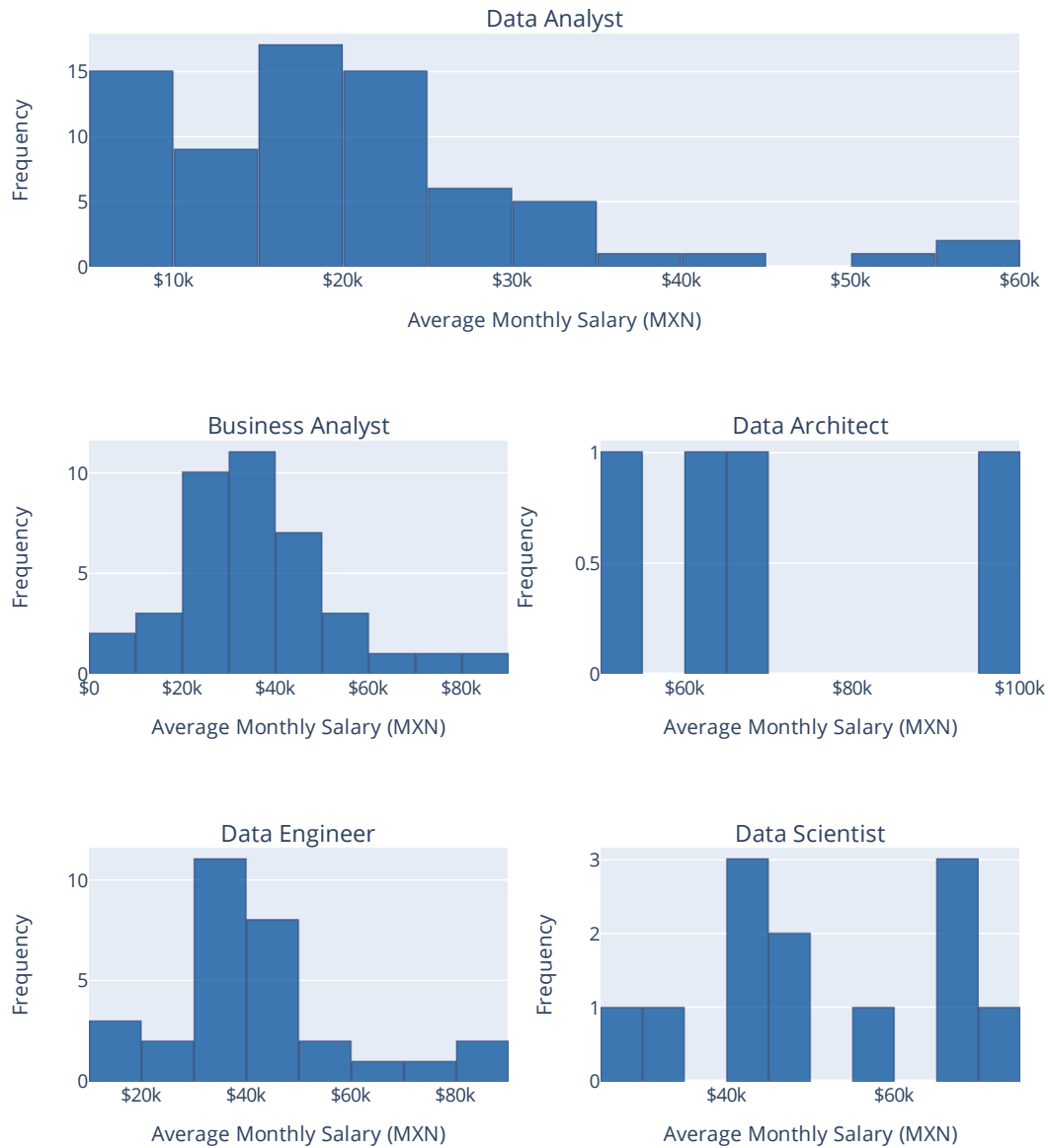


Figure 12. Histogram of salary distributions per data job category in Mexico in August 2022 (own elaboration).

Notwithstanding with the above, for the purposes of the present study, both parametric (ANOVA and t-test with unequal variance) and non-parametric (Mann-Whitney U and Kruskal-Wallis H) tests were carried out to assess the significance of the obtained results.

Data job with the highest salary

The salaries for each data job category are shown in the box plot in figure 11.

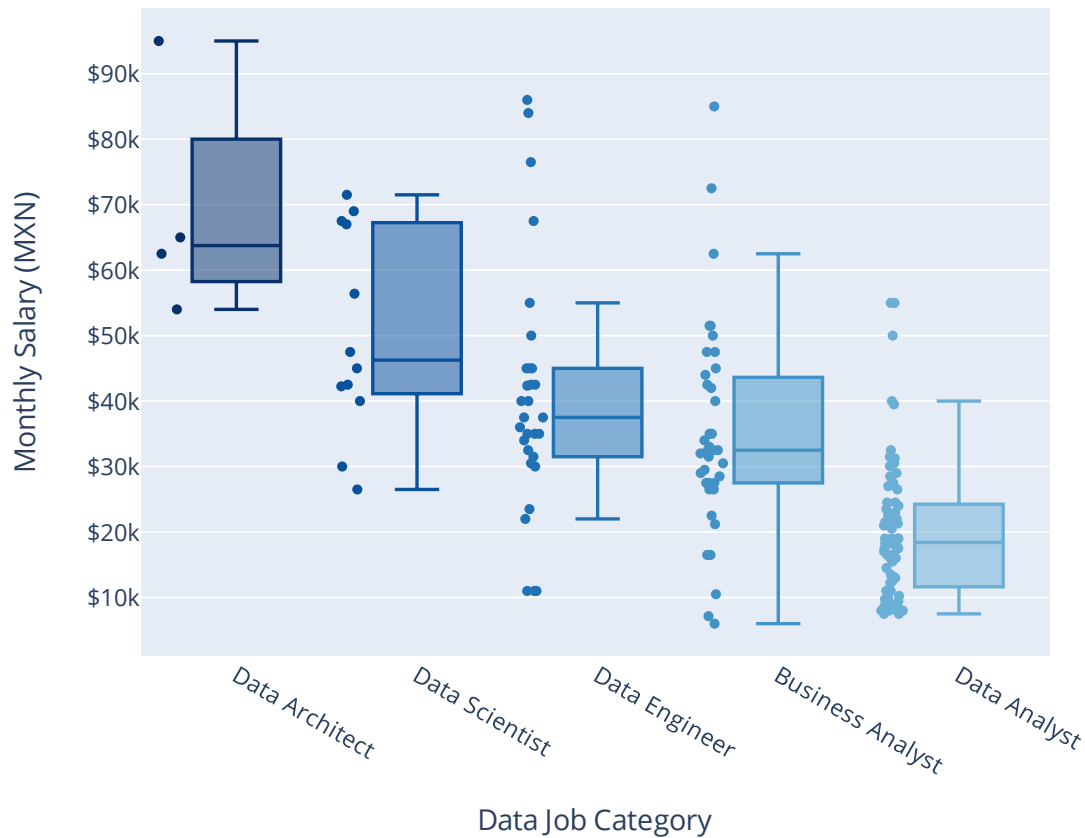


Figure 13. Box plot of salary distributions for each data job category in Mexico in August 2022 (own elaboration).

Figure 13 suggests that, after removing outliers from the calculation of the average salaries, **Data Architect** positions are still the ones with the highest salaries in the current Mexican labor market with a monthly average of about **63,750 MXN**.

The second monthly highest average salary correspond to **Data Scientist** positions with about **46,250 MXN**.

Furthermore, it is possible to see that salary distributions for Data Architects and Data Scientist overlap, which raises the question whether the salaries for Data Architects are actually higher than those for Data Scientists.

On the other hand, it was found that **Data Engineer** and **Business Analyst** positions have an average monthly salary of about **37,500 MXN** and about **32,500 MXN**, respectively.

Finally, **Data Analyst** positions, the most demanded position nowadays, are the ones with the lowest salaries in the data jobs labor market with only an average monthly salary of about **18,400 MXN**.

Moreover, in order to verify whether the salary differences among the different data jobs categories were statistically significant, a one-way analysis of variance (ANOVA) procedure and a Kruskal-Wallis H test were performed. The hypotheses are as follows:

$$H_0: \mu_{BA} = \mu_{DA} = \mu_{DR} = \mu_{DE} = \mu_{DS}$$

$$H_1: \text{Not } H_0$$

$$\alpha = 0.05$$

Where μ_{BA} is the average salary for Business Analysts; μ_{DA} , average salary for Data Analysts; μ_{DR} , average salary for Data Architects; μ_{DE} , average salary for Data Engineers; and μ_{DS} , average salary for Data Scientists.

The results of the one-way ANOVA and the Kruskal-Wallis H test are shown in the table 3.

Table 3. ANOVA and Kruskal-Wallis H test results for the average salary differences for the different data jobs categories at a signification level of $\alpha = 0.05$.

Test	Statistic	p-value
One-way ANOVA	$F = 29.142$	<0.001
Kruskal-Wallis	$H = 61.502$	<0.001

Thus, from table 3, it is observed that the average salary differences for the distinct data jobs categories are statistically significant, as the probability of obtaining the observed outcome would be very unlikely under the null hypothesis (p -value is less than 0.001 for both tests). Thus, the null hypothesis that the averages salaries are equal is **rejected**.

Then, a series of pairwise t-tests with unequal variance and Mann-Whitney U tests were performed to determine whether the average salary for different data jobs categories was significantly different. In first place, the average salaries for Data Architects and Data Scientists were compared under the following hypothesis:

$$H_0: \mu_{DR} \leq \mu_{DS}$$

$$H_1: \mu_{DR} > \mu_{DS}$$

$$\alpha = 0.05$$

The results of the t-test and the Mann-Whitney U test are shown in the table 4.

Table 4. T-test and Mann-Whitney U test results of the average salary differences for Data Architects and Data Scientists at a signification level of $\alpha = 0.05$.

Test	Statistic	p-value
t-test	$t = 1.869$	0.063
Mann-Whitney U test	$U = 35.000$	0.106

Therefore, from table 4 it is observed that the average salary differences for the Data Engineers and Data Scientists were not statistically significant, as the p -value of both tests indicates that the probability of obtaining the observed outcome is not unlikely under the null hypothesis at the selected level of significance. Therefore, the null hypothesis is not rejected. In other words, **Data Architect's salaries are not significantly higher than those for Data Scientists.**

Following the above logic, the results of the other t-tests and Mann-Whitney U tests are shown in the table 5, using the same signification level of $\alpha = 0.05$.

Table 5. T-test and Mann-Whitney U tests results of the average salary differences for other data job categories at a signification level of $\alpha = 0.05$.

Null hypothesis (H_0)	t-test		Mann-Whitney U test		Reject null hypothesis?
	t statistic	p-value	U statistic	p-value	
$\mu_{DS} \leq \mu_{DE}$	1.609	0.060	187.000	0.046	Yes
$\mu_{DS} \leq \mu_{DA}$	6.636	<0.001	736.500	<0.001	Yes
$\mu_{DE} \leq \mu_{BA}$	1.888	0.033	458.500	0.011	Yes
$\mu_{DR} \leq \mu_{DE}$	2.899	0.021	81.000	0.009	Yes
$\mu_{DS} \leq \mu_{BA}$	3.423	0.001	279.500	0.001	Yes
$\mu_{BA} \leq \mu_{DA}$	4.216	<0.001	1461.500	<0.001	Yes

In view of the table 5, regarding the comparison of the salary averages for Data Scientists and Data Engineers, the obtained p -value from the t-test was not significant ($p > 0.05$); whereas the obtained p -value from the Mann-Whitney U test was significant ($p < 0.05$). In this sense, taking into account that the Data Scientist salary observations do not follow a normal distribution, the results from the Mann-Whitney U test could be deemed as more accurate. However, it is also noteworthy that the p -value from this test is too close from the significance level. So, this result must be taken with caution. Therefore, all in all, the **Data Scientist salaries are apparently significantly higher** than those for **Data Engineers**, so the null hypothesis is rejected.

Moreover, Data Scientist's salaries are significantly higher than those for any other data jobs categories with the notorious exception of Data Architect positions as explained above. Similarly, Data Engineer's salaries are significantly higher than those for Business Analysts, and Business Analyst's salaries are significantly higher than those for Data Analysts. Finally, Data Architect 's salaries are significantly higher than those for Data Engineers.

In this context, according to the results from the present statistical analysis, average salaries for **Data Architects** and **Data Scientists** are the **highest ones** in the current Mexican labor market.

Salaries per location

Regarding the assessment of locations where the highest salaries for data jobs could be found, the following heatmap shows the relationship between locations, data job categories and average monthly salaries (figure 14).

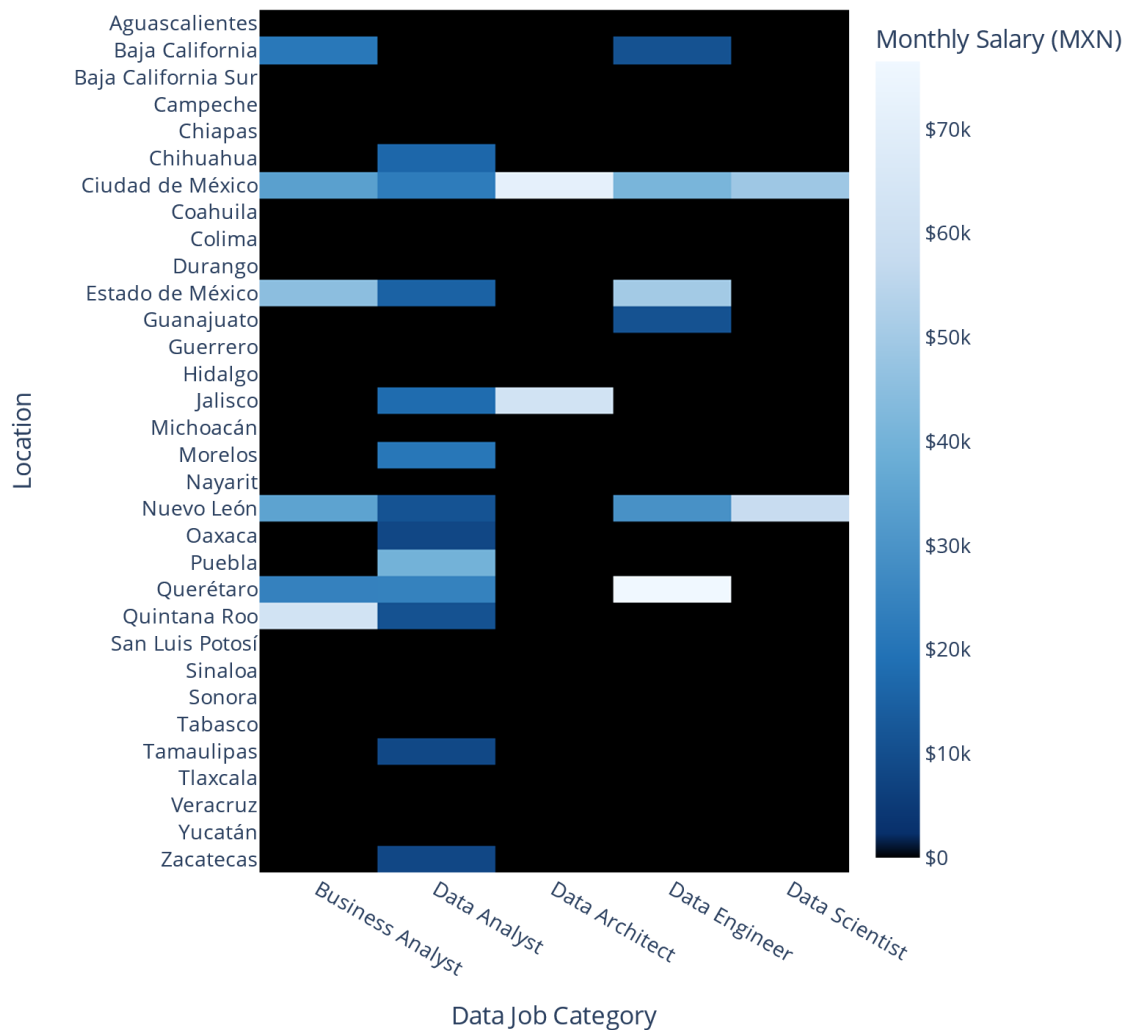


Figure 14. Average salaries per location and data job category in August 2022 (own elaboration).

In general, figure 14 suggests that the highest salaries can be found in Ciudad de México, Estado de México, Nuevo León, Querétaro and Quintana Roo. However, the observation for the latter state is atypical and should be interpreted with caution.

More specifically, the highest salaries for the different data jobs categories can be found in the following states (table 6):

Table 6. Locations with the highest average monthly salaries by data job category.

Data Job Category	Locations with the highest salaries
Business Analyst	Estado de México, Quintana Roo
Data Analyst	Puebla, Querétaro
Data Architect	Ciudad de México, Jalisco
Data Engineer	Querétaro, Estado de México
Data Scientist	Nuevo León, Ciudad de México

On the other hand, due to the concentration of the job demand in a few Mexican states, a closer look to the average salaries in Ciudad de México, Estado de México, Nuevo León and Jalisco is shown below (figure 15).

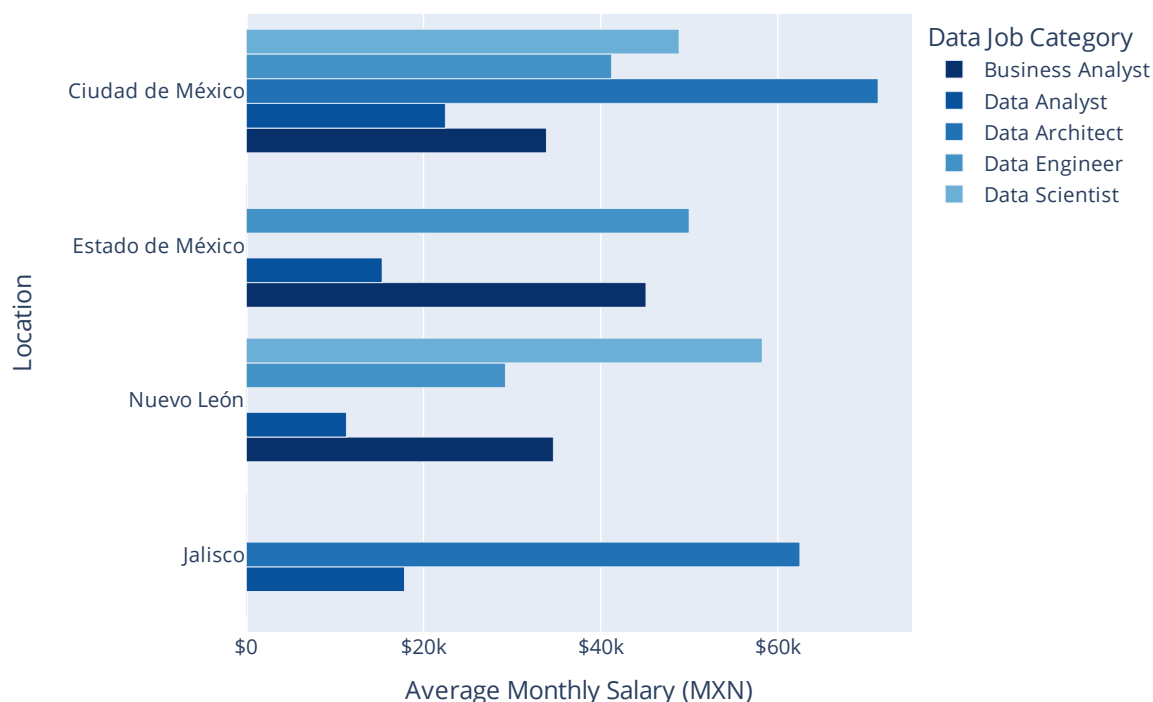


Figure 15. Average salaries for each data job category in Ciudad de México, Estado de México, Nuevo León and Jalisco in August 2022 (own elaboration).

From figure 15, average monthly salaries for Data Architects are higher in Ciudad de México (71,333 MXN) and slightly lower in Jalisco (62,500 MXN). Similarly, Data Scientists are higher in Nuevo León (58,250 MXN) and slightly lower in Ciudad de México (48,865 MXN); salaries for Data Engineers are higher in Ciudad de México (41,243 MXN) and lower in Nuevo León (29,250 MXN); salaries for Business Analyst are higher in Estado de México (45,125 MXN) and lower in Ciudad de México (33,880 MXN); and salaries for Data Analysts are higher in Ciudad de México (22,474 MXN) and lower in Nuevo León (11,300 MXN).

So, overall, from the top locations, the **average monthly salary for all data jobs categories is higher in Ciudad de México (43,559 MXN)** and lower in Nuevo León (33,366 MXN).

Nonetheless, the above results must be taken with caution as not enough data was possible to collect to calculate a meaningful average salary for each data job category in each state. However, it seems to be reasonable that the highest salaries could be found in the capital region.

Companies offering the highest salaries

Regarding to the companies offering the highest salaries, the figure 16 shows the top 30 companies offering highest average salaries for all data jobs in Mexico.

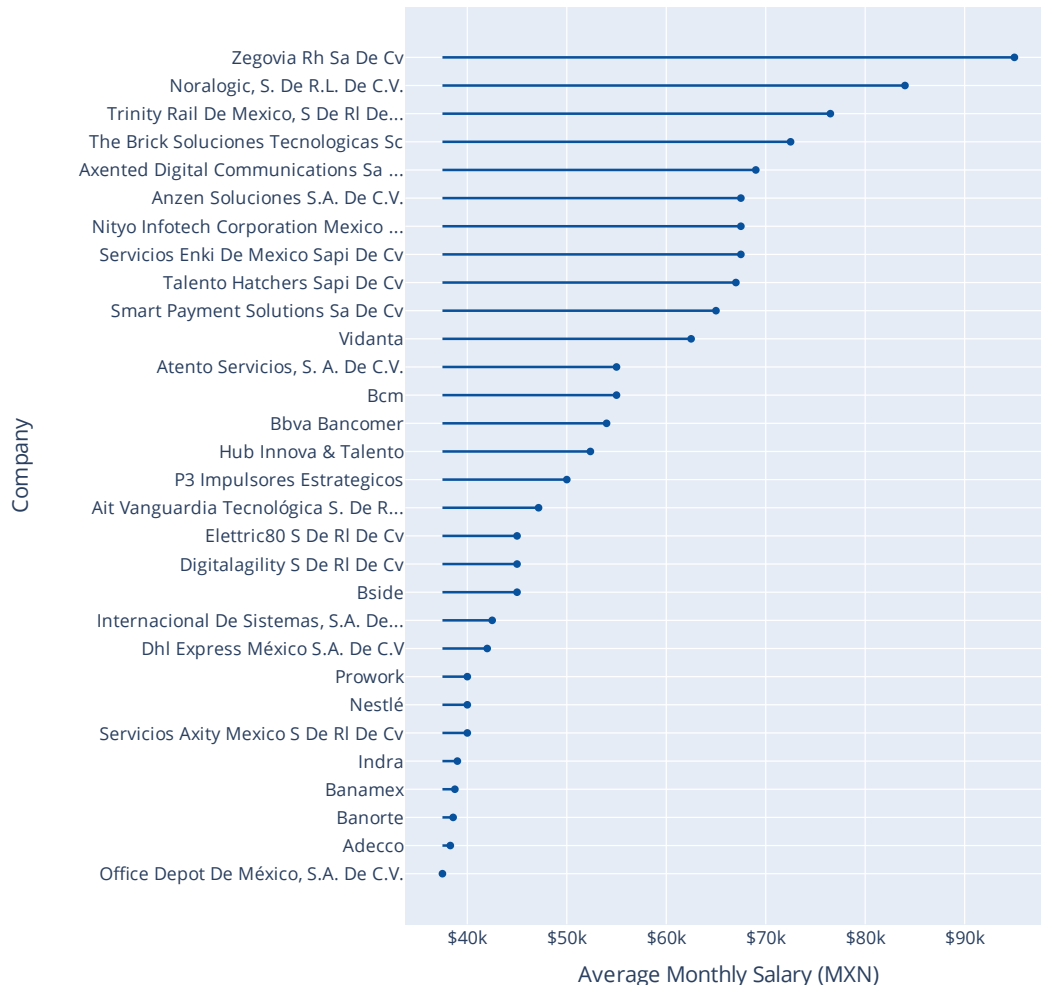


Figure 16. Top 30 companies with the highest average salaries for data jobs in Mexico in August 2022 (own elaboration).

From the plot above, the companies offering the highest salaries are **Zegovia RH**, **Noralogic** and **Trinity Rail de México**. However, in the case of Zegovia RH, it is reasonable to think that their highly paid data job positions are demanded on behalf of other companies.

On the other hand, it is noteworthy that, from the banking sector, **BBVA Bancomer** is the bank offering the highest salaries.

Again, the results from figure 16 must be taken with caution, as most likely they refer to senior data positions. Nevertheless, they provide an insight about what companies offer the highest salaries for data jobs in the current Mexican labor market.

Furthermore, the figure 17 shows a closer look of the top 30 companies offering the highest salaries by data job category.

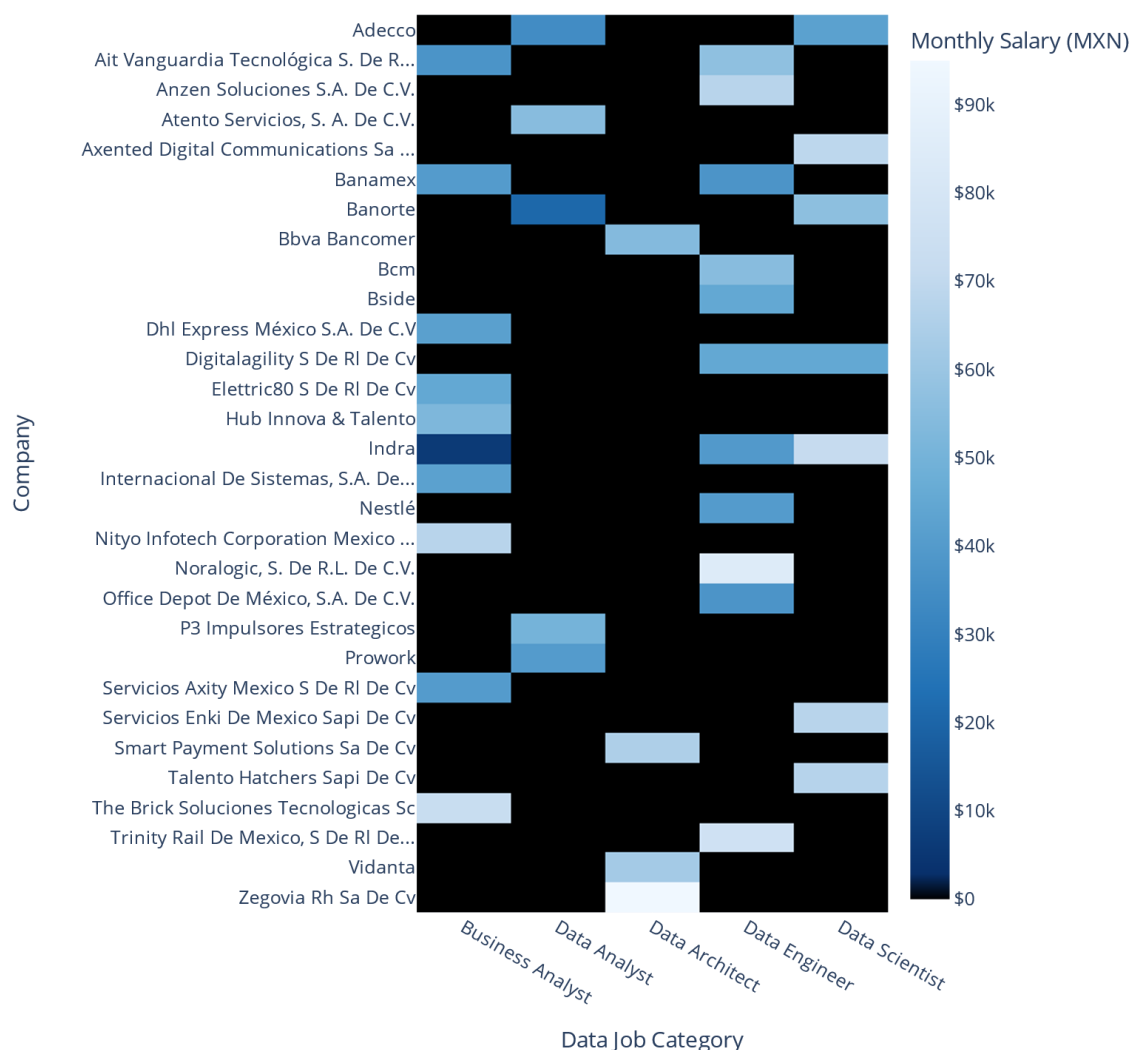


Figure 17. Companies with the highest average salaries by data job category in Mexico in August 2022 (own elaboration).

In view of figure 17, for **Business Analyst** positions, the organizations offering higher salaries are The Brick Soluciones and Nityo Infotech; for **Data Analyst** positions, the organizations offering higher salaries are Atento Servicios and P3 Impulsores Estratégicos; for **Data Architect** positions, the organizations offering higher salaries are Zegovia RH and Smart Payments; for **Data Engineer** positions, the organizations offering higher salaries are Noralogic and Trinity Rail; and for **Data Scientist** positions, the organizations offering higher salaries are Indra, Axented, Servicios Enki and Talento Hachers.

4. Conclusions

The data job categories with the highest salaries in the Mexican labor market in August 2022 according to the OCC website were Data Architect and Data Scientist. Even though the average salary for Data Architect was higher than that for Data Scientists, it was found that the difference was not statistically significant. Thus, the present study's hypothesis is rejected.

On the other hand, the data job category most demanded in the Mexican labor market was Data Analyst; even though it was also the one with the lowest salary. Also, this data job category is the most demanded across the different Mexican states, whereas Data Architect and Data Scientist positions were the most concentrated in certain locations, namely, Ciudad de México, Estado de México, and Nuevo León.

Moreover, Ciudad de México was the location where it is possible to find the highest jobs demand and the highest salaries. However, Nuevo León, Estado de México, and Jalisco were locations where the demand of data jobs and the salaries offered are the highest after the capital.

Furthermore, the companies with the greatest demand of data positions were Banamex, Softtek and Grupo Salinas; nevertheless, the organizations that offered the highest salaries were Zegovia RH, Noralogic and Trinity Rail de México.

Additionally, it was also found that the data jobs demand from some companies spread across several Mexican states such as Banamex, Pepsico, Softek, Sygno and Teleperformance, and that there are some well-known organizations whose data jobs demand is not located in the capital region, such as IBM (Jalisco), Johnson Controls (Nuevo León) and Tecnológico de Monterrey (Nuevo León).

The results of the present study suggest that Data Analyst, Business Analyst, and Data Engineer positions were more demanded across different organizations. On the contrary, Data Scientist and, certainly, Data Architect vacancies could only be found in more specific organizations like tech companies and banks.

Finally, regarding the limitations of the present study, it is important to bear in mind that the data was collected solely from the OCC website and only for a very short period of time. Thus, very few observations were obtained for the least demanded data jobs categories: Data Scientist and Data Architect. Also, collected data mostly correspond to Ciudad de México, Nuevo León, Estado de México, and Jalisco, and no distinction was made among entry level, middle and senior positions. Thus, as future perspectives, it would be advisable to gather data from more job websites, retrieve information for a longer time span, make a distinction among entry level, middle and senior positions, and collect more salary data for Data Scientist and Data Architect positions as well as for other Mexican states.

5. References

- Axis Talent. (2020).** *The Ecosystem of Data Jobs - Making sense of the Data Job Market*. Retrieved from Axis Talent: <https://www.axistalent.io/blog/the-ecosystem-of-data-jobs-making-sense-of-the-data-job-market>
- Davenport, T. H., & Patil, D. J. (2012).** Data Scientist: The Sexiest Job of the 21st Century. *Harvard Business Review*.
- Grus, J. (2019).** *Data Science from Scratch*. Sebastopol: O'Reilly Media.
- Kudyba, S. (2014).** Information Creation through Analytics. In S. Kudyba, *Big Data, Mining, and Analytics* (pp. 19-47). Boca Raton: Auerbach Publications.
- Rollins, J. B. (2015).** *Metodología Fundamental para la Ciencia de Datos*. Somers: IBM Corporation. Retrieved from <https://www.ibm.com/downloads/cas/WKK9DX51>