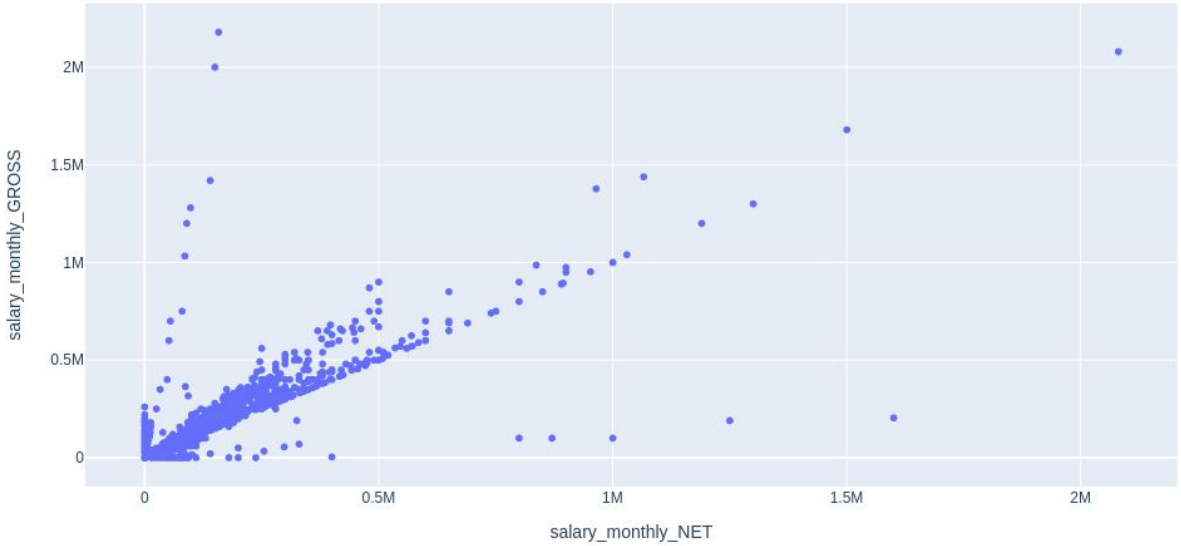
Data Visualization

Revision Class 02 - Two random variables

DigitalLab@LaPlataforme_

Two variables: Scatterplots

The scatterplot shows the **relationship between two numerical r.v.** X and Y by mapping realizations of both variables into an 2D plot.



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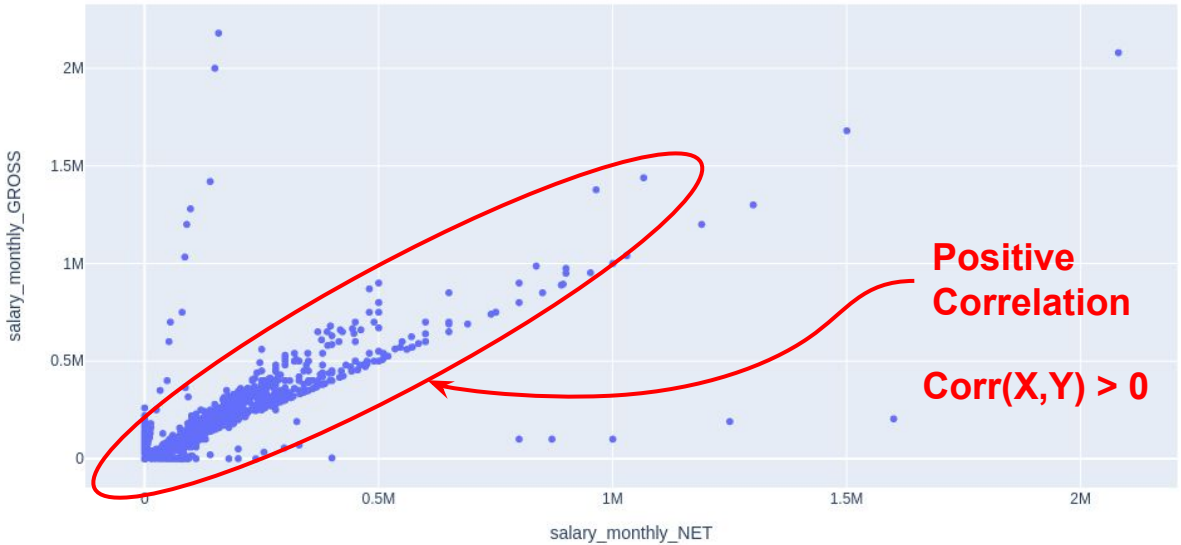

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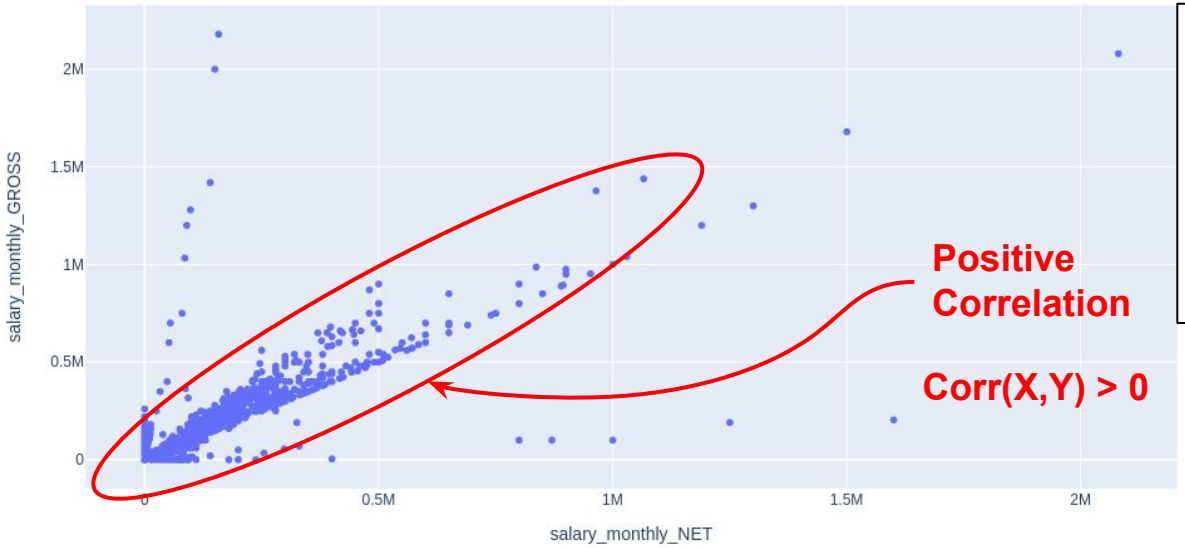


```
fig = px.scatter(
     df,
      y="salary_monthly_GROSS",
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fig.show()
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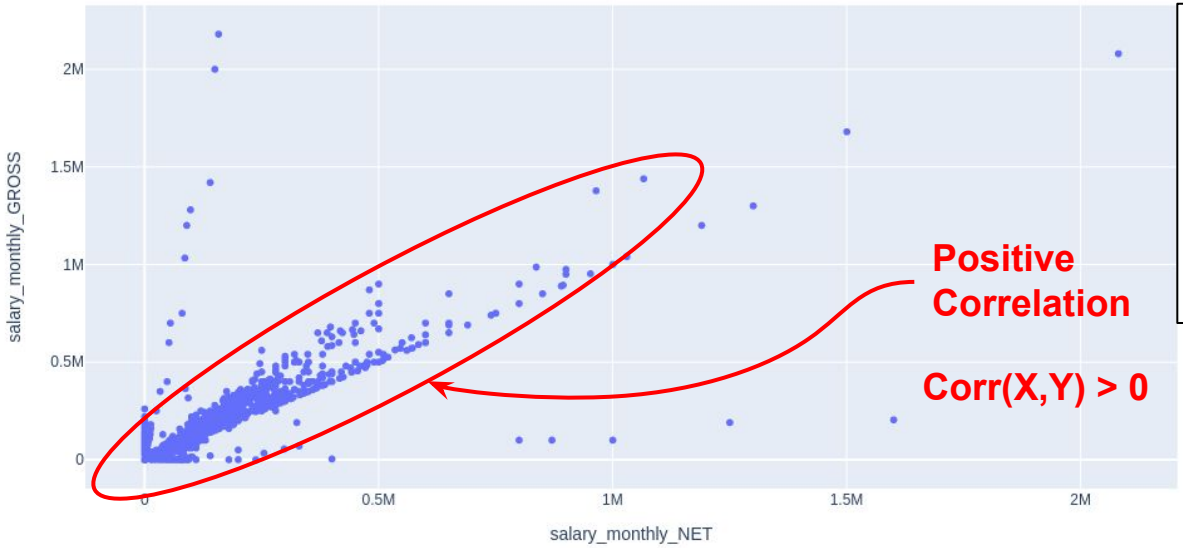


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fig = px.scatter(
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IMPORTANT! We can only use this plot with numerical two continuous r.v.

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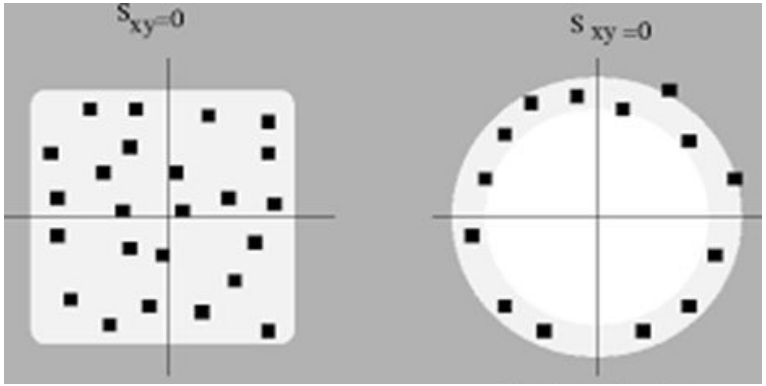

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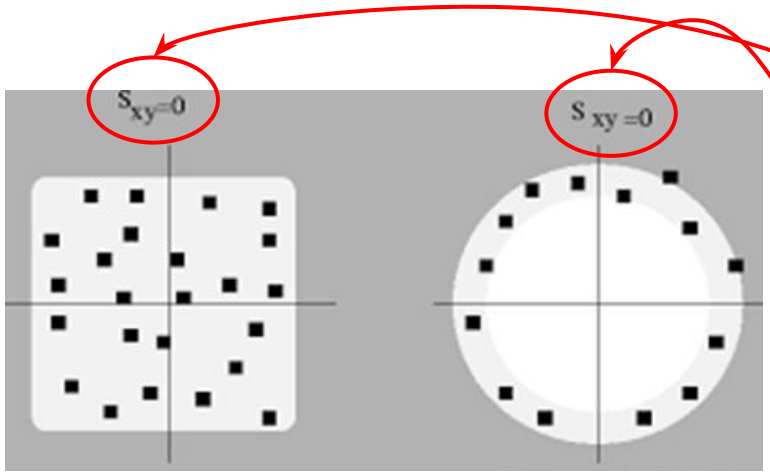

Both plots have linear correlation equal to 0

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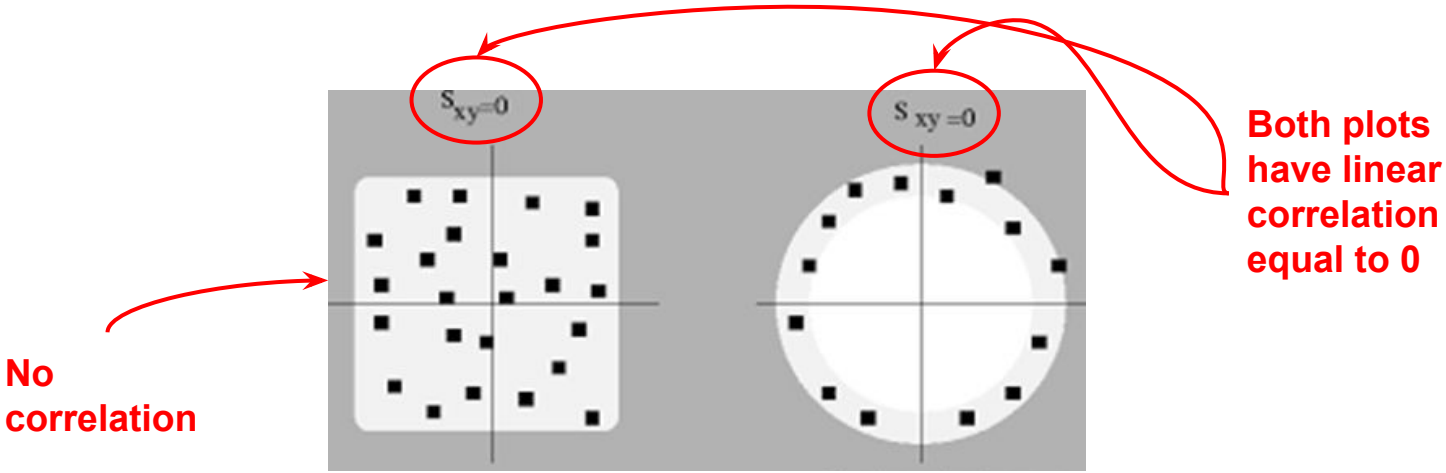

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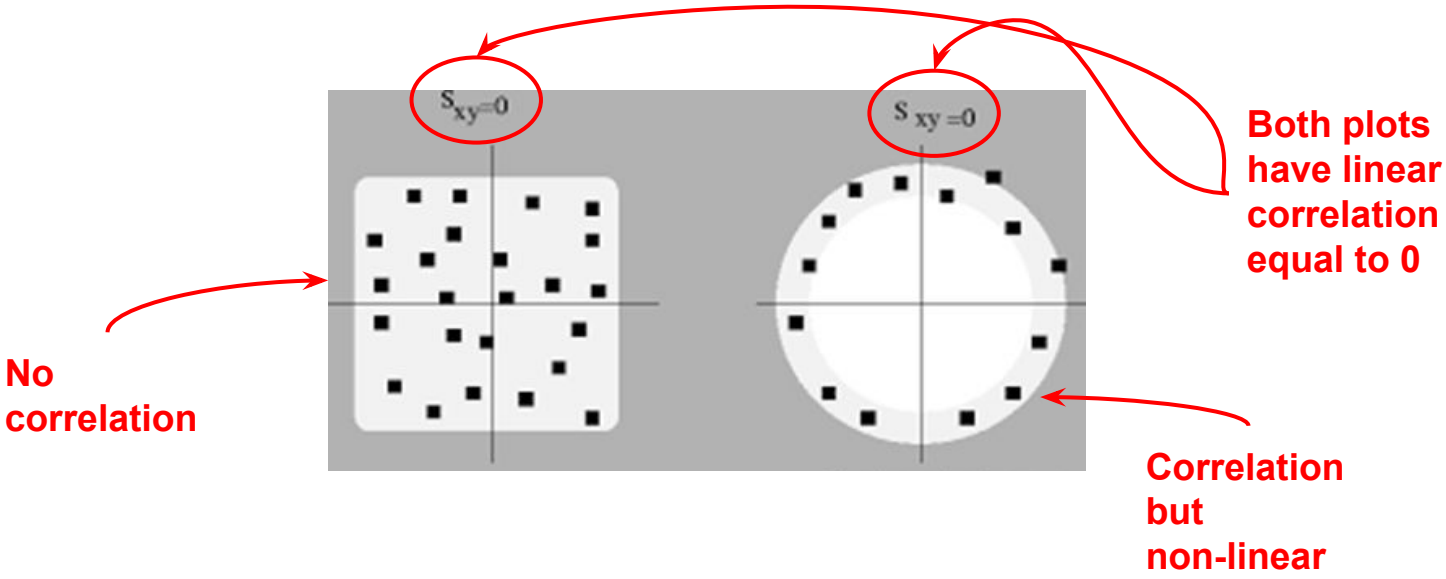
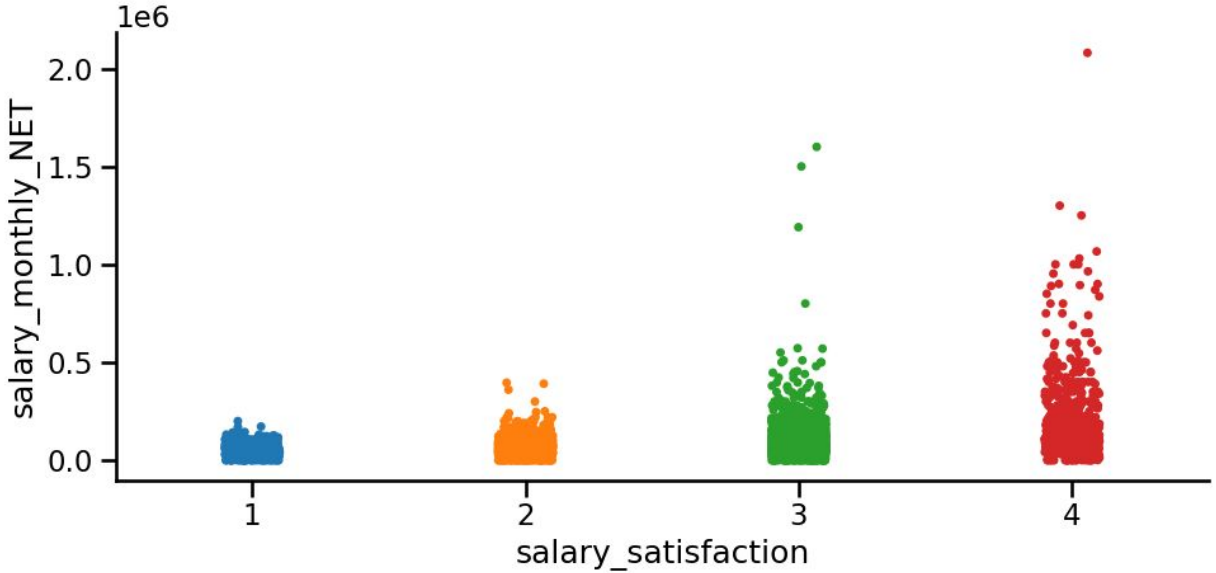


Two variables: Catplots

The catplots shows the **relationship between one categorical r.v.** X and **one numerical** Y.



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sns.catplot(
data=df,
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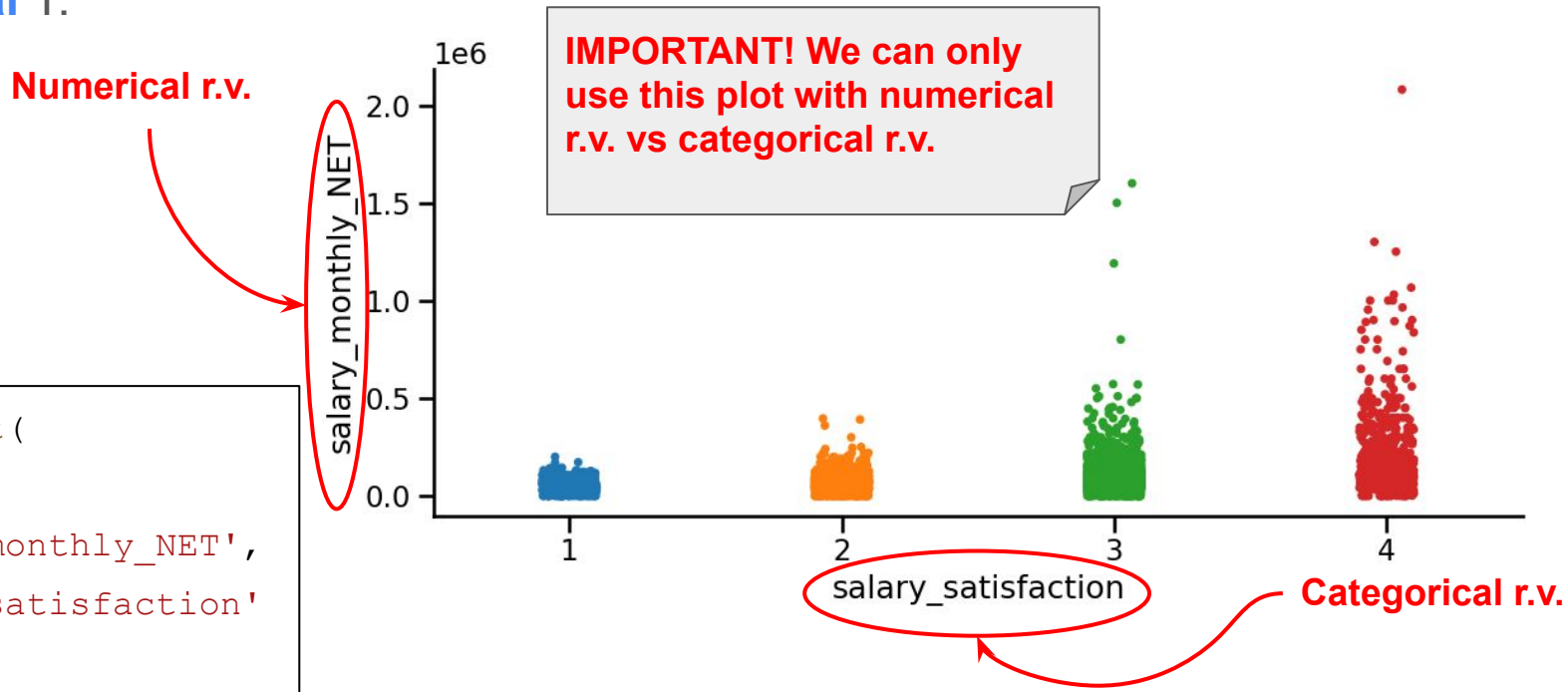


```
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data=df,
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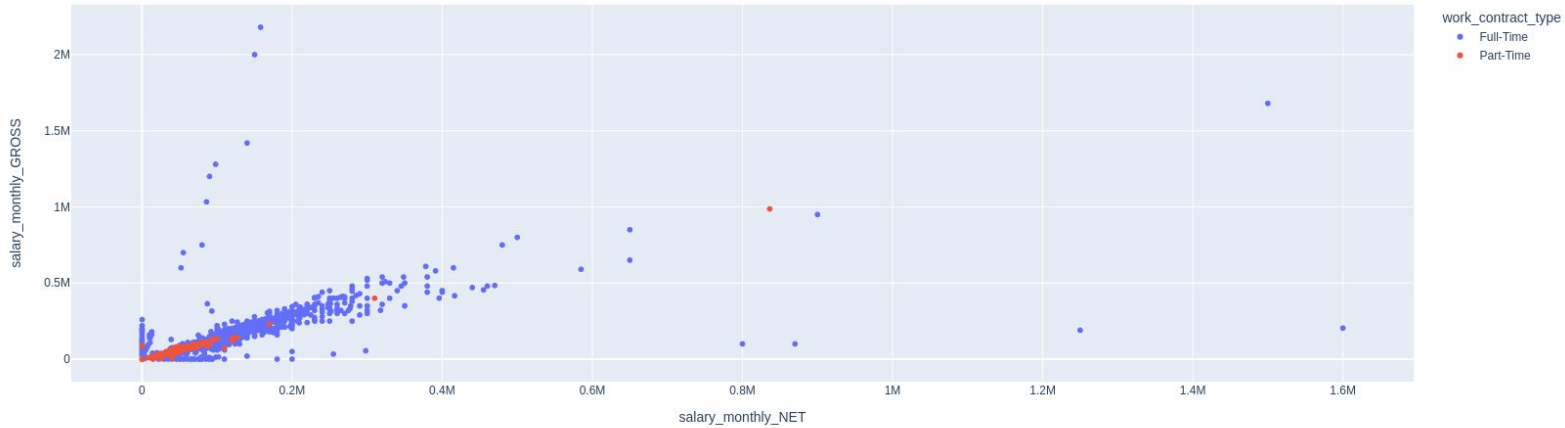
```

The power of hue

It controls when you want to **visualize different subsets of the data**. It can be used with **only categorical variables** and it is preferable where the **number of categories is small**.



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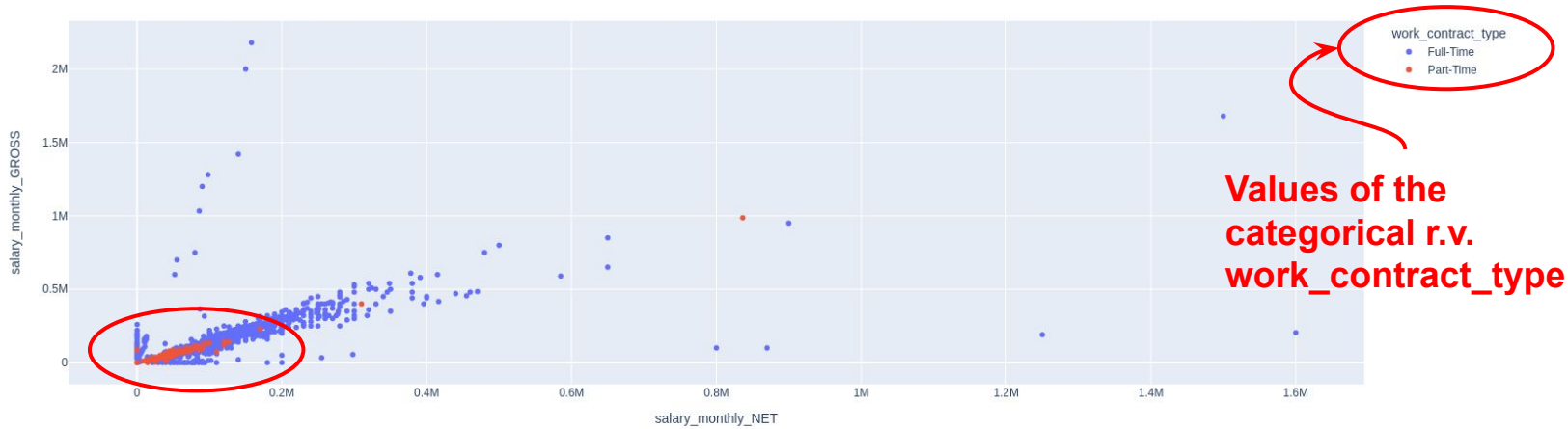

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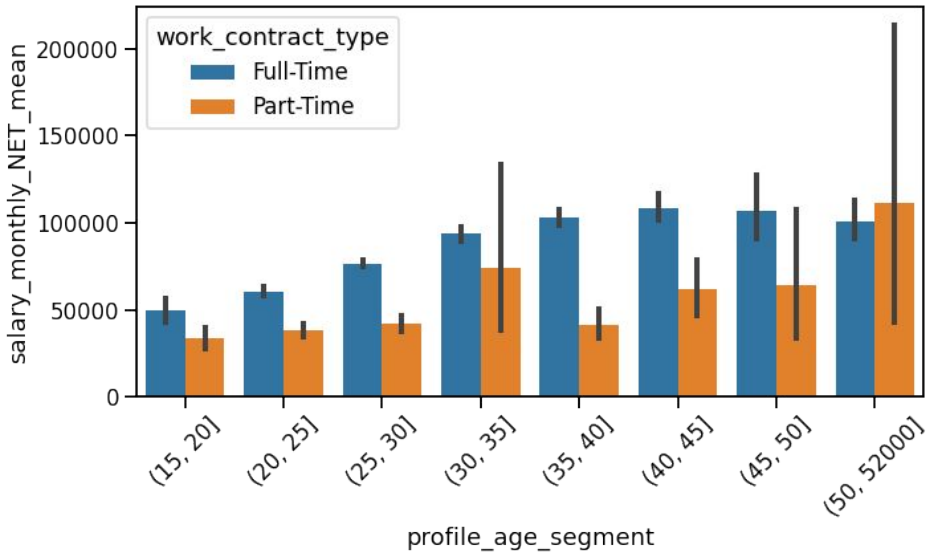

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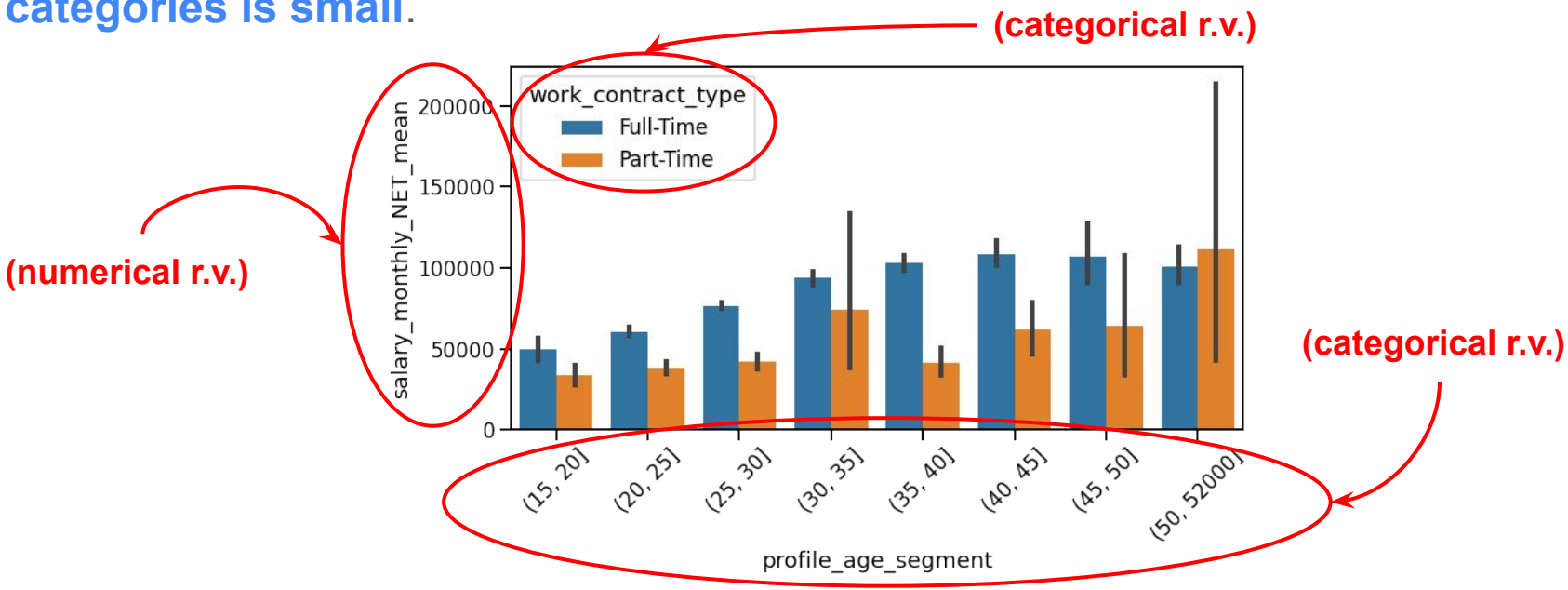
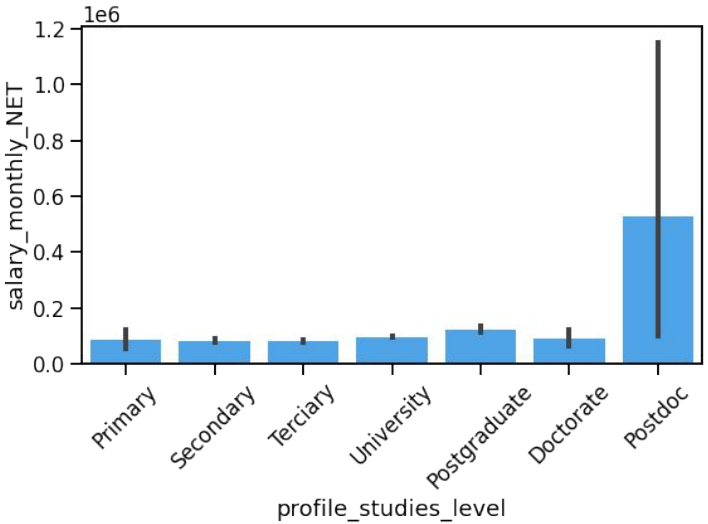


From Seaborn to Plotly

The plotly library is an interactive open-source plotting library that supports the creation of **more personalized plots than seaborn** but at the same time with a harder learning curve.




```
seaborn.barplot(
data=df,
y="salary_monthly_NET",
x='profile_studies_level',
estimator=numpy.mean,
ci=95)
```

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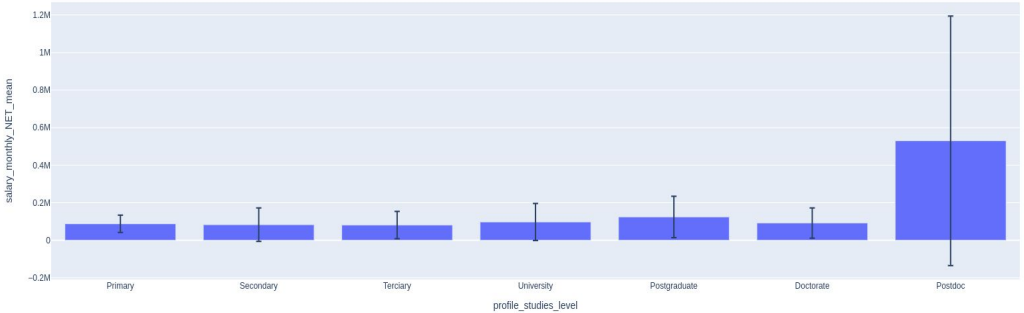


```
fig = px.bar(
df_studies_level_mean,
x='profile_studies_level',
y='salary_monthly_NET_mean',
error_y="salary_monthly_NET_std")
fig.show()
```

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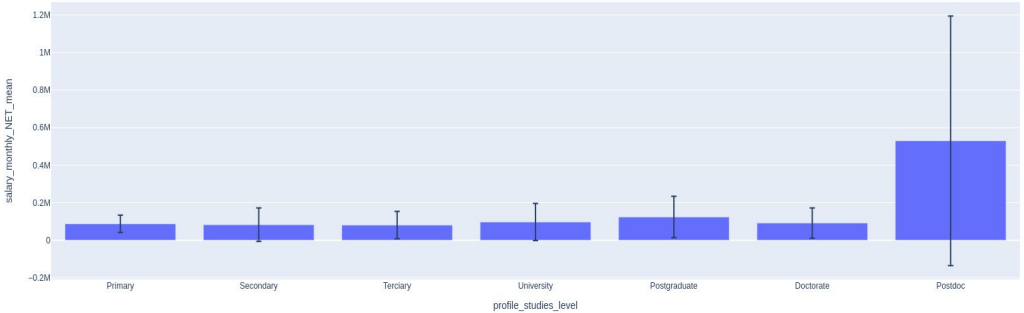
IMPORTANT! Sometimes we need to calculate the aggregation

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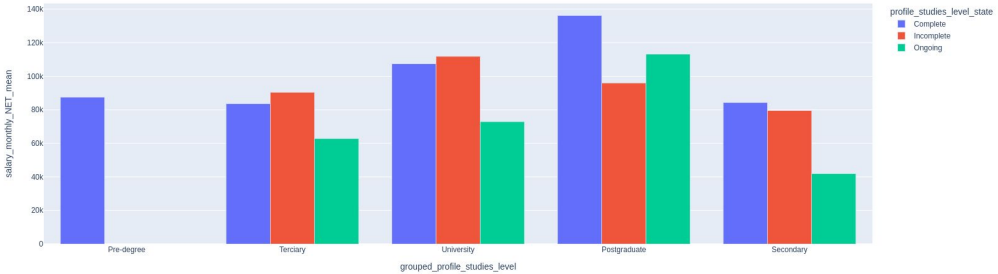


```
fig = px.bar(
df_grouped_studies_level_mean,
x='profile_studies_level',
y='salary_monthly_NET_mean',
color='profile_studies_level_state',
barmode='group')
fig.show()
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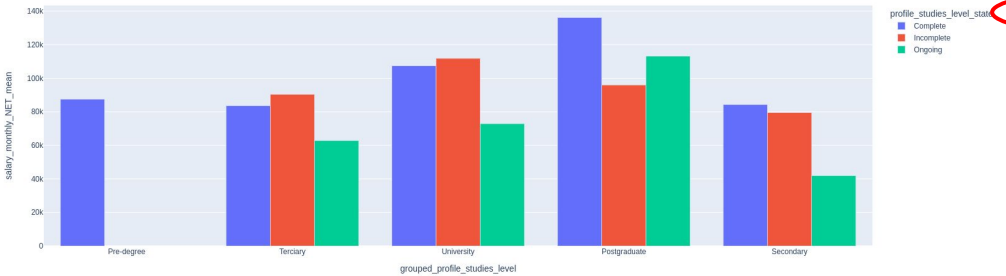
Dataframe with the studies level, level state, and salary mean

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