



USER GUIDE

Uncovering illegal, unreported, and
unregulated (IUU) through Visual Analytics

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Introduction



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Uncovering illegal, unreported, and unregulated (IUU) through Visual Analytics

Introduction

Explore Ownership Network

Explore Company Industries and Revenue

Our application

Our application will analyse the company ownership and products and services information

Application Features

This application has 2 key modules:

1) Explore Ownership Network

This module provides insights on the special cases of owners with high company counts and their revenue

2) Explore Company Industries and Revenue

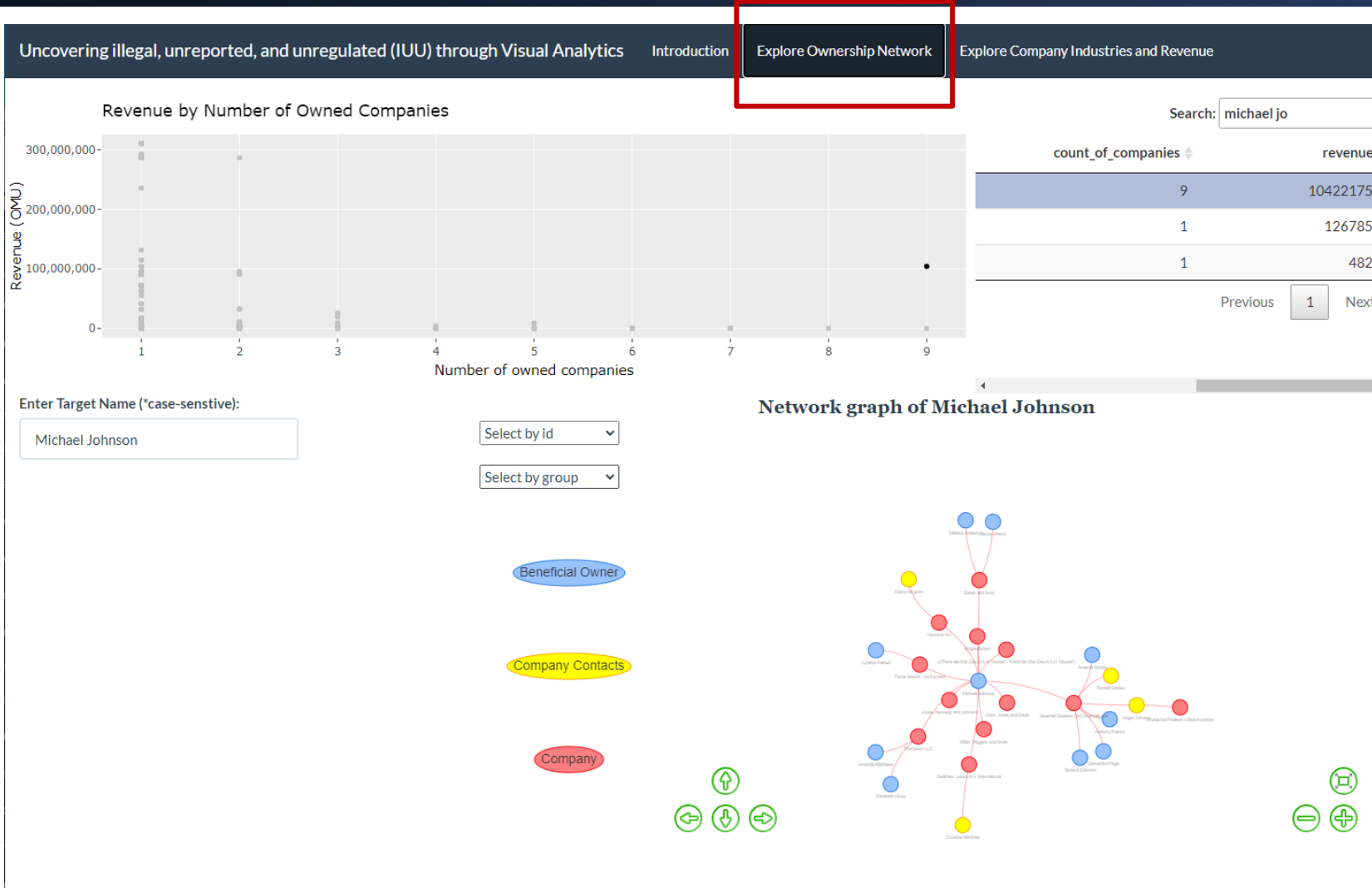
This module allows user to explore the topic modelling analysis of the descriptions of the company and compare the revenue across different industries identified by topic modelling

The *introduction* tab offers a concise summary of the app's objective and its key features.

Explore Ownership network



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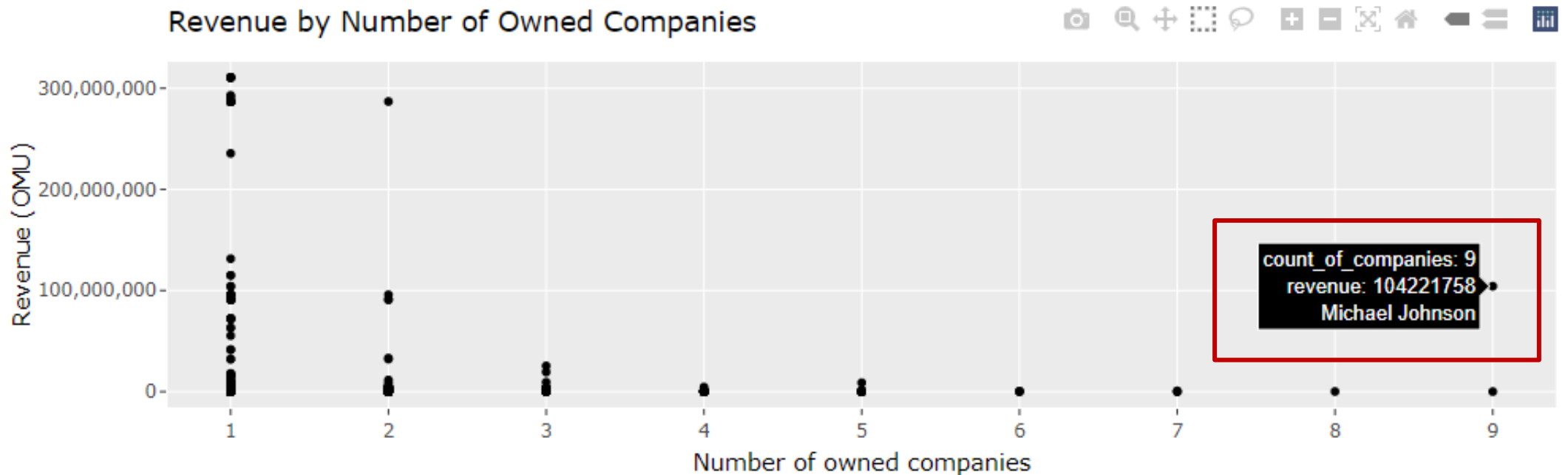


The *Explore Ownership Network* tab dashboard provides you with an interactive display of the revenue based on the number of owned companies, as well as a network graph visualization of each Target Id.

Distribution of revenue by no of owned companies



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To view additional information, simply hover your mouse over the dots, and a tooltip will appear displaying the relevant details.

Dynamic Table



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1

Search: michael Johnson

2

target	count_of_companies	revenue
2 Michael Johnson	9	104221758

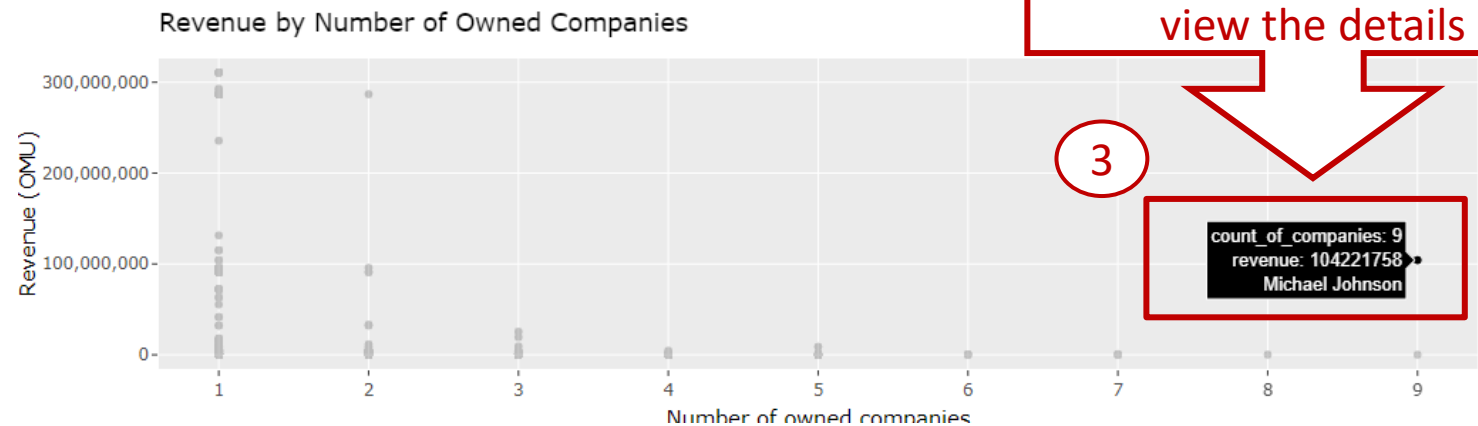
Showing 1 to 1 of 1 entries (filtered from 9,898 total entries)

Previous 1 Next

Type the Target name in the Search field box here

The list will automatically populate. Right click the row to select the correct person. The row is highlighted.

Corresponding dot will be highlighted. Hover your mouse over the dot to view the details



Network graph of Target Id



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1

Enter Target Name (*case-sensitive):

Michael Johnson

Select by id

Select by group

This is a free text field box, input the Target name. This field is case-sensitive.



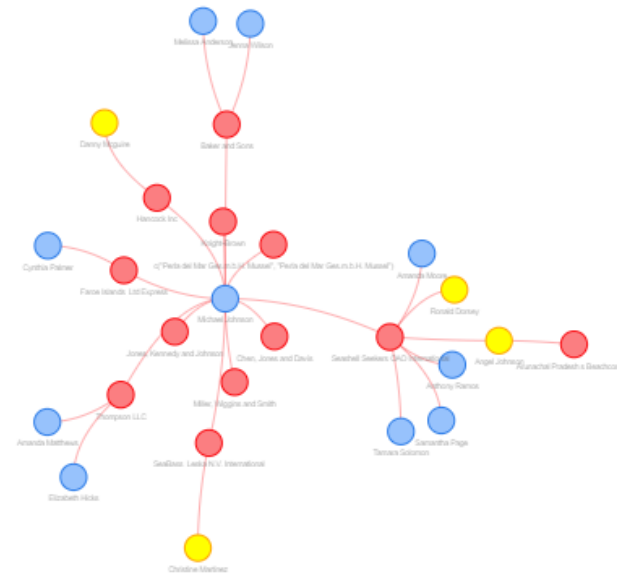
Beneficial Owner

Company Contacts

Company

2

Network graph of Michael Johnson



The network graph of the inputted Target name will automatically be displayed. (May take a few minutes to load)

Network graph of Target Id



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Click on the dropdown lists to select a specific id and/or group to view

Select by id ▼

Select by group ▼

Beneficial Owner

Company Contacts

Company

Network graph of Michael Johnson



Click to shift the network graph up, down, left or right



Click to do the following:

resize back to original

Zoom Out

Zoom In

Explore Company, Industries and Revenue



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Uncovering illegal, unreported, and unregulated (IUU) through Visual Analytics

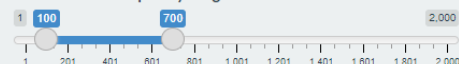
Introduction

Explore Ownership Network

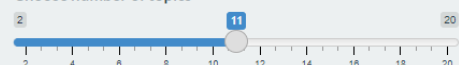
Explore Company Industries and Revenue

The description of products and services for each company was tokenized. Stop words were removed and stemming was applied. In addition, log transformation was applied to the revenue since the distribution of revenue does not follow normal distribution. The following parameters can be fine-tuned:

Choose word frequency range:



Choose number of topics



Choose method used for fitting

- ☒ Gibbs
☐ Variational Expectation Maximization

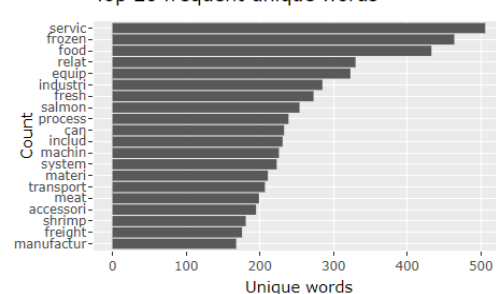
Click Update

Product and Service Description

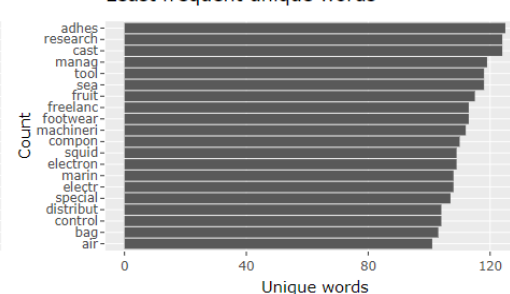
Industries by Topic Modelling

Revenue by Industries

Top 20 frequent unique words



Least frequent unique words



Show 5 entries

Search:

	id	country	product_services	revenue_omu
1	Jones LLC	ZH	Automobiles	310612303.447
2	Coleman, Hall and Lopez	ZH	Passenger cars, trucks, vans, and buses	162734683.9969
3	Aqua Advancements Sashimi SE Express	Oceanus	Holding firm whose subsidiaries are engaged in the businesses of refining and chemicals, process and pollution control equipment, minerals, fertilizers, polymers and fibers, commodity trading and services, forest and consumer products, and ranching	115004666.6728
4	Makumba Ltd. Liability Co	Utoporiana	Car service, car parts and accessories, automotive technology, diagnostics for repair shops, antilock braking and fuel-injection systems, auto electronics, starters, and alternators; Home (power tools for DIY enthusiasts, garden tools, household appliances, heating and warm water); and industry and trade (communication services, power tools for professional, sensors and foundry - MEMS, security systems, packaging technology)	90986412.5191
5	Taylor, Taylor and Farrell	ZH	Fully electric vehicles (EVs) and electric vehicle powertrain components	81466666.6728

Showing 1 to 5 of 8,639 entries

Previous 1 2 3 4 5 ... 1,728 Next

Within the *Explore Company, Industries and Revenue* tab, you will find three sub-tabs, namely the *Product and Service Description*, *Industries by Topic Modelling* and *Revenue by Industries*.

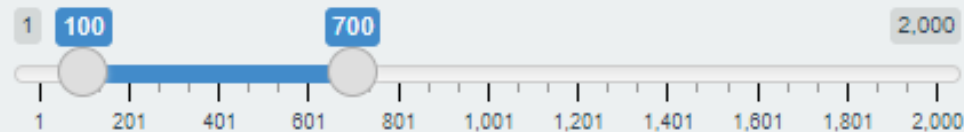
The results of the table and charts are all derived based on the parameters chosen.



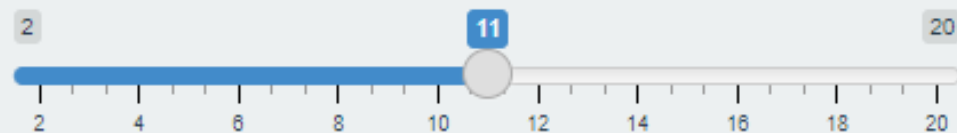
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The description of products and services for each company was tokenized. Stop words were removed and stemming was applied. In addition, log transformation was applied to the revenue since the distribution of revenue does not follow normal distribution. The following parameters can be fine-tuned:

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Choose number of topics



Choose method used for fitting

- ☒ Gibbs
☐ Variational Expectation Maximization

Click Update

To customize the analysis, you have several options available:

1. **Word Frequency Range:** Adjust the word frequency range by sliding the toggle left or right on both ends of the spectrum. This allows you to narrow down the range of words considered in the analysis, focusing on those with higher or lower frequencies.
2. **Number of Topics:** Use the slider to choose the desired number of topics for the topic modeling analysis. Slide it to the left or right to increase or decrease the number of topics accordingly.
3. **Fitting Method:** Select the preferred method for fitting the topic model. You can choose between different fitting methods such as Gibbs or Variational Expectation Maximization (VEM). This option allows you to experiment with different fitting methods to find the one that best suits your needs.

Once you have made your selections, click the **“Click Update”** button to apply the changes. All the charts and table in the different sub tabs will be updated based on your chosen parameters.

Product and Service Description



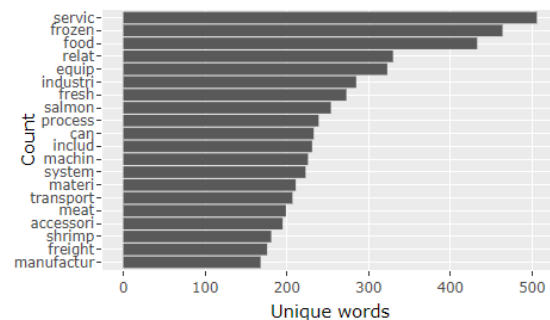
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Product and Service Description

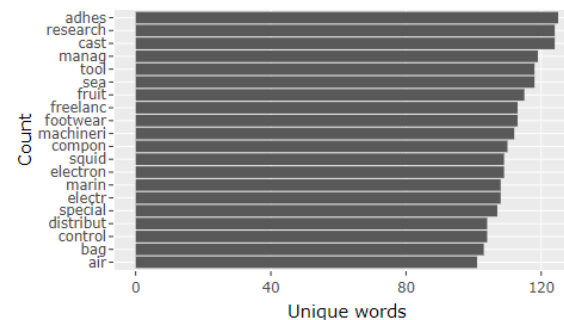
Industries by Topic Modelling

Revenue by Industries

Top 20 frequent unique words



Least frequent unique words



Show 5 entries

Search:

	id	country	product_services	revenue_omu
1	Jones LLC	ZH	Automobiles	310612303.447
2	Coleman, Hall and Lopez	ZH	Passenger cars, trucks, vans, and buses	162734683.9969
3	Aqua Advancements Sashimi SE Express	Oceanus	Holding firm whose subsidiaries are engaged in the businesses of refining and chemicals, process and pollution control equipment, minerals, fertilizers, polymers and fibers, commodity trading and services, forest and consumer products, and ranching	115004666.6728
4	Makumba Ltd. Liability Co	Utoporiana	Car service, car parts and accessories, automotive technology, diagnostics for repair shops, antilock braking and fuel-injection systems, auto electronics, starters, and alternators; Home (power tools for DIY enthusiasts, garden tools, household appliances, heating and warm water); and industry and trade (communication services, power tools for professional, sensors and foundry - MEMS, security systems, packaging technology)	90986412.5191
5	Taylor, Taylor and Farrell	ZH	Fully electric vehicles (EVs) and electric vehicle powertrain components	81466666.6728

Showing 1 to 5 of 8,639 entries

Previous 1 2 3 4 5 ... 1,728 Next

Under the *Production and Service Description* subtab, the top 20 most and least frequent unique words bar chart will be displayed.

A dynamic table will also be available for you to search the different keywords that will provide you insights on the products offered by different companies.

Industries by Topic Modelling

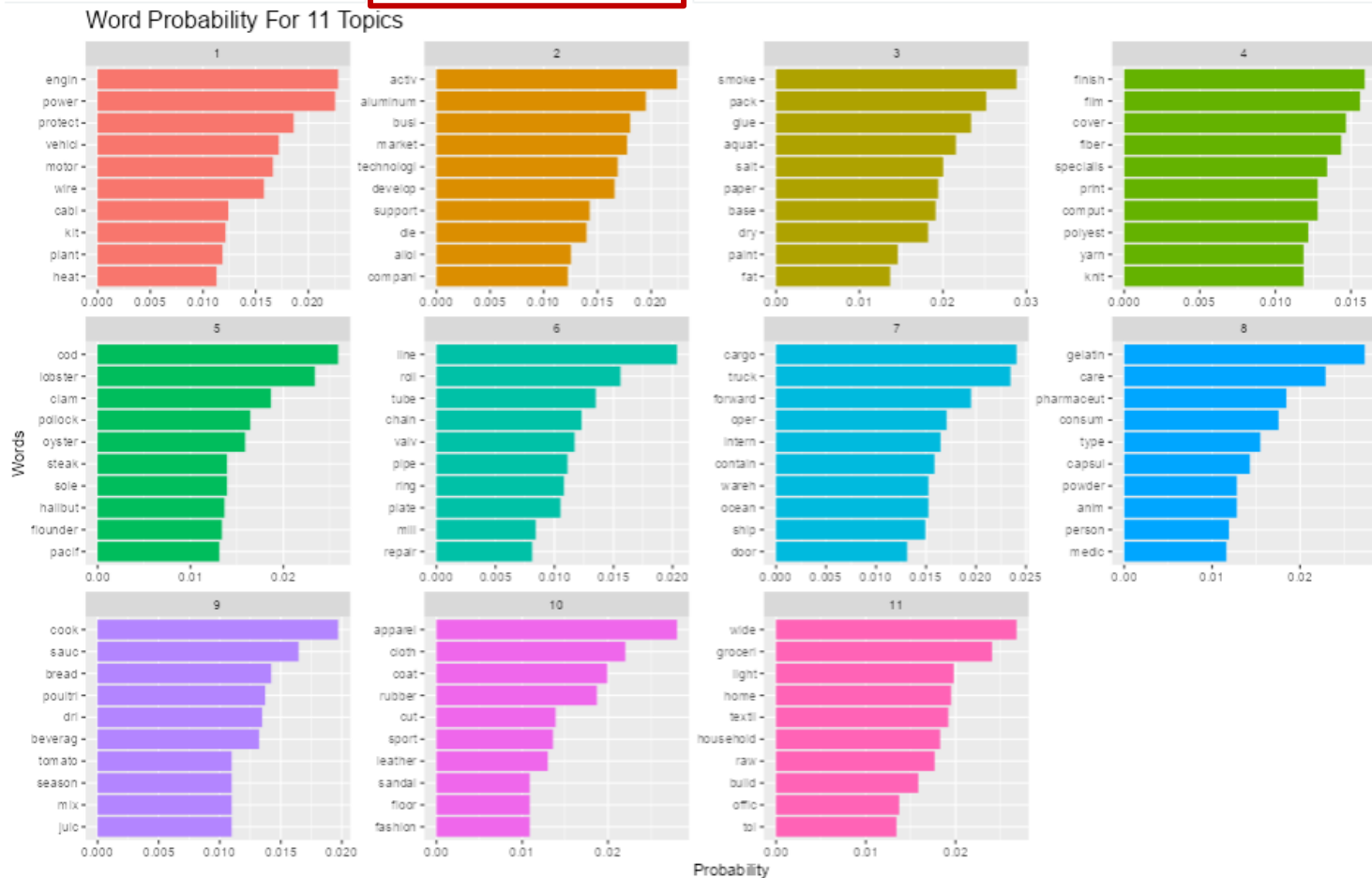


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Product and Service Description

Industries by Topic Modelling

Revenue by Industries

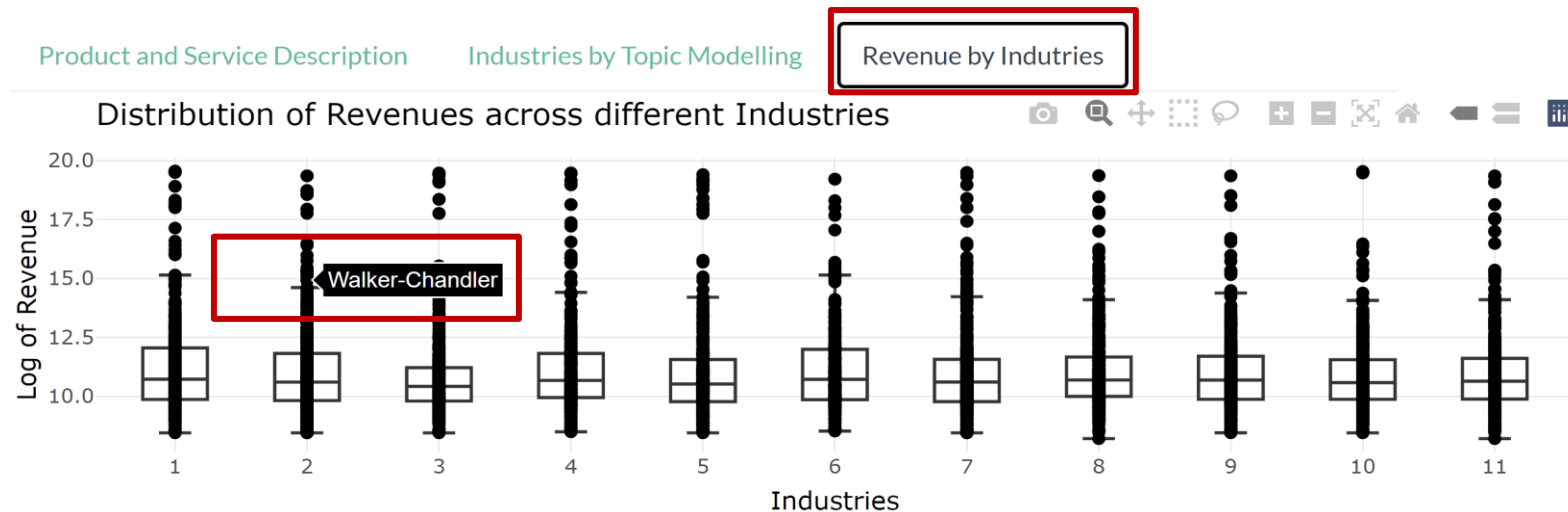


Under the *Industries by Topic Modelling* subtab, the different topics will be shown based on the selected parameters. For instance, topic 5 is fishing related, topic 10 is fashion and apparel related etc.

Revenue by Industries



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Under the *Revenue by Industries* subtab, the distribution of the revenues across different Industries and the statistical test results of the mean log revenue for each industry will be shown.

Hover your mouse over the plot for Distribution of Revenues across different industries for more details.