DATA 610-9080 Fall 2020

Assignment 4 Dashboard and Story Development using Cognos Analytics

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**Introduction**

Using the analysis that was derived from assignment 3, I was able to answer the two of the following questions: “What age are billionaires likely to become billionaires?” and “Do wealth types contribute to one becoming a billionaire?”. People are becoming billionaires at a much younger age now in days. “John Collison, age 26, is now the world’s youngest self-made billionaire, just two months younger than Snapchat’s Evan Spiegel” (Dolan, 2017). To continue the dataset that was used to answer these questions was obtained from billionaire.csv from Kaggle.com. The contents of this data include 2614 cases of people who have become billionaires in the past a couple hundred years. Also, there are twenty-two different variables in this dataset. The variables describe the characteristics that each of the billionaires possess and reveals what factors contributed to these people’s success over time. By filtering out the dataset helped with choosing the appropriate variables to answer the two questions above. An image of the revised data module is in the Appendix as Figure 1. Visible Variables.

**Previous Key Findings/Insights**

There were multiple insights that were found for the questions in assignment. To begin a decision tree diagram was made for the first question involving the age of billionaires (Figure 2. Age of Billionaire Tree Diagram). The findings were that the relationship between the input variables and target variable chosen has an insight strength of 41.1 percent. The decision model details say that the exact variables founded, relationship, country code, and gpd predict age with a predictive strength of 41.5%. In addition, the year is the least important predictor of age. Year only improves the predictive strength by about <0.1%. Therefore, the strongest variables are founded, relationship, country code, and gpd. The single best predictor variable is founded. If a company was founded in <1975 the predictor strength is 59%. The combination of variables that seem to give the best answer are founded, gpd, relationship, country code. These are the main variables that drive the prediction without them the prediction would not be as accurate. For example, when replacing the variable country code with industry the prediction percentage went down. The combination above gives the most accurate predication.

Likewise, there was also a Sunburst Diagram (Figure 3. Age of Billionaire Sunburst Diagram) created for the age of billionaire’s questions. The Sunburst Diagram shows the founder surrounding the age in the middle because age is the target variable. It also shows the standard deviations of the variables, total number of records, percentages, and other appropriate information on the variables.

In addition, the second key finding was for the second question involving wealth types of billionaires. A decision tree was made (Figure 4. Wealth Type Tree Diagram), and the key findings were as follows: Predicting the outcome of the variable wealth type indicates that the relationship between the variables mentioned above and wealth type have a predictive insight of 89.7%. The variables that are the strongest predictors are relationship and category which predict wealth type by 89.7%. The single best predictor variable is relationship. The relationship strength is 100% the dictator of what the wealth type outcome will be. The combination of variables that seems to give the best answer are the following: year, gender, region, country code, worth billions, citizenship, age, founded, GPD, industry, rank, was political, name, category, company type, and relationship. These were all the variables used to predict wealth type outcome and they are the best because it gives a variety of knowledge to the dataset making it more accurate.

Furthermore, there was also a Sunburst diagram made for the wealth type ( Figure 5. Wealth Type Sunburst Diagram). The key findings were that it shows the top five categories in the variable wealth type that are most successful. The relationship variable is surrounding the wealth type proving that the relationship variable is the greatest dictator of the outcome for wealth type. Executive is a category colored in blue and has 734 records of billionaires who were founders, CEOs, and relationships. The green color are people who achieved billionaire status through founder-non finance and there are 599 records. Yellow are people who inherited their billionaire status and there are 217 records. Then there is orange in the color wheel that is for billionaires in privatized and sector with a record of 439. Then there is a purple color for self-made financial billionaires with a record of 157.

**Five New Key Findings and Insights**

There are five new insights that were found using the cleaned billionaire’s dataset. The insight visualizations were categorized as worth in billions by age, age by gender, billionaire by citizenship, billionaire by inheritance, and wealth type by age. To begin the age by gender visualization showed that the average worth in billions by wealth type is 3.548 billion. There were no meaningful differences found and no predictive relationship amongst the variables. However, the wealth type founder non finance was the most profitable wealth type amongst the others. Executive was the lowest at 2.64 billion. Second age of billionaires by gender. The insights found that the average age per billionaire by gender is 53.9 and or 54. It also showed that women became billionaires at an average age of 52.33 while men became billionaires at 54.17. Third, the visualization billionaire by citizenship showed that amongst the countries of Australia, India, Japan, Mexico, Russia, South Africa, and United States most became billionaires at the age of 55.3. An article mentions that “After the industrial revolution, parallel to the industrialization process, world billionaires emerged in early industrialized countries.” (YAKIŞIK, 2013). The insights mentioned that the value of age is most unusual when the values of citizenship are Japan and Australia. Fourth the visualization of billionaire by inheritance showed that the average of billionaires that inherited their billionaire status achieved it at the age of 53. The predictive strength is 25 percent and Cognos interestingly found that the value of age is usually low when the combinations of wealth.type and year are inherited + 1996 and self-made finance + 1996. To explain most people in 1996 inherited their wealth rather young to clarify. Lastly, the visualization of wealth type to age showed that the average of people who become billionaires from all different backgrounds included become billionaires at age 53.61. Likewise Cognos insights found that the value of age is most unusual when the values of wealth.type are inherited and self-made finances. The confidence level for inherited at a low 95% while the confidence level for self-made finances is high at 95%.

**Key Features of Dashboard**

The key features to the dashboard in Appendix 1. Billionaire Dashboard are simple and understanding. It starts out with the wealth and age sunburst diagrams from the previous assignment. From that one can see that the dashboard is showing the wealth types and age people become billionaires. Likewise, there were two tabs made instead of one because the beginning tab show a preview of the previous lessons in case one did not know. The second tab show cases the new insights that the previous lesson influenced. It goes into more detail talking about the averages for gender, citizenship, worth in billions, inheritance, and even puts age against wealth type. For example, “Founders of smartphone maker Xiaomi Corp. and Colin Huang, who is now worth $11.9 billion after the successful listing of his e-commerce platform Pinduoduo Inc.” (Chen, 2018). Furthermore, from looking at the diagram one can view the wealth type section and see founder-non finance and executive has the highest number of average billionaires to prove the statement above. It is highly informative and highlights the averages for most sections as seen on the dashboard. They diagrams are also legible so one can read and see more information on certain variables they have a curiosity in. Similarly, I decided to make the widgets available so a viewer will have even more information on the diagrams at hand.

**Dashboard Contributions to Insights Gained**

Furthermore, the dashboard greatly helped with the insights that were gained. Each visual can be changed in the Cognos system to fit the needs of the person asking a certain question. One can link all the questions together and make all the other visualizations correlate to that one need. For example, if in the visualization the gender “female” was chosen all the other visuals would adjust to only showing female data and the same for men. In the case of the insights used it was thought to be better to show both genders to give a broader comparison. However, one can change the entire dynamic of the dashboard if need be. In addition, each visualization in the dashboard gives insights and calculation so that also greatly helped with find key insights and providing an analysis.

**Insights from Story Perspective**

Move over, the insights from the story’s perspective was also greatly needed. It provided a closer visual and more detailed knowledge of what was happening in the dashboard. Each visual had its own scene because all the information was greatly needed so one can understand all aspects of the story. It helps tell the story because it guides the reader along the way. It tells them how this story came into place and offers more insight at the turn of each chapter/scene. It is also brief, and the wording is short so attention spans will not be lost easily. Likewise, it is also incredibly detailed. The animation feature is a great aspect because you can highlight or authorize certain visuals to show certain slides at any given moment. The story perspective also gives one a chance to provide or highlight the most important information a reader would need to hear.

**Dashboard/ Story Useful in Business**

One specific business area was using the insights from the dashboard would be useful is for businesses that specialize in network marketing. Network marketing involves word of mouth and training young business minded people to become business owners one day and great investors. People in the network marketing business would benefit from the dashboard and story because it will give them insights on what type of people they should look to market with if they would like to make billions. Many network marketing events involve speakers with a lot of success coming to speak to investors or people with interests in becoming successful as well. The marketing company could choose the exact type of people necessary for their crowd to speak to with the information presented on the dashboard and story. They can look at the genders, inheritance, citizenship, worth in billions by wealth type and wealth by age. This is also information that they can tell newcomers so they will know what factors contribute to most people becoming billionaires.

**Advantages of Story Telling Method**

The advantages of using the story telling method is that one can present the findings in a way that is understandable for a reader or person who has no knowledge of the topic. There are also scenes that are shown so one can rewind and watch the scene over again. It captures an audiences attention because of the visuals and the animations. It is a little different than a dashboard because it presents the findings in narrative view and summaries all the findings at the end. There are also transition styles somewhat like Microsoft Power Point however the advantage is that all the data is in one place, so everything is done in on one platform. That makes it extremely easy to adjust and retrack.

**Disadvantages of Story Telling Method**

The disadvantages of the presenting the findings with the story telling method is the screen size itself. It is a little hard to adjust the fitting for the screen making it hard to view. Likewise, to produce it you must have a link that goes directly to Cognos analytics so its not in a format you can download and present it a couple of people. Equally, sometimes the button for adjusting the video times would freeze making it hard to edit properly. Another disadvantage is you cannot read edit the dashboard you have to pin all the information and start another one if you need to make changes.

**Discussion/ Conclusion**

There were many findings from using the billionaire.csv data. The original findings of wealth and age were carefully examined in the previous assignment and gave great information. Using the method of dashboards and story telling gave brought forth even more insights that could be unbelievably valuable for a business in the area of network marketing could use at a seminar. Furthermore, using the dashboard and storytelling method comes with its advantage such as keeping a crowd in engagement and making the data easier to understands. However, it does have it disadvantages to such as the editing process and not being able to download as an open source. Both are remarkably interesting tools and can be used in quite different and astoundingly ways.

**References**

Chen, L. (2018, September 18). 39-Year-Old Founder's Wealth Jumps to $5.3 Billion After IPO.

https://www.bloomberg.com/news/articles/2018-09-20/meituan-rises-on-debut-in-hong-kong-after-4-2-billion-ipo

Dolan, Kerry A. (2017, Mar 19) *Forbes 2017 Billionaires List: Meet The Richest People On The*

*Planet*. www.forbes.com/sites/kerryadolan/2017/03/20/forbes-2017-billionaires-list-meet-the-richest-people-on-the-planet/.

YAKIŞIK, H. (2013, June 1). *Wealth of Nations or Wealth of Persons: World Billionaires* ...,

from http://websitem.karatekin.edu.tr/user\_files/haruny/files/karatekin-makale.pdf

**Appendix**

**Figure 1. Visible Variables**

**Graphical user interface, table

Description automatically generated**

Figure 2. Billionaire Age Tree Diagram Average Ages

Chart

Description automatically generated

Figure 3. Billionaire Sunburst Tree Diagram

Chart, sunburst chart

Description automatically generated

Figure 4. Wealth Type Tree Diagram

Graphical user interface

Description automatically generated

Figure 5. Wealth Type Sunburst Diagram

Chart, sunburst chart

Description automatically generated

**Dashboard of Billionaires**

**Chart, sunburst chart

Description automatically generated**

**Graphical user interface, table

Description automatically generated**

**Graphical user interface, text, application, email

Description automatically generated**

**IBM Cognos Story Visual Screenshots**

**Scene 1.**

Chart, sunburst chart

Description automatically generated

*Transition 1.*

Chart, sunburst chart

Description automatically generated

**Scene 2.**

**However, what happens when gender, inheritance, citizenship, and worth in billions is brought into the picture? Also, can wealth type predict what age one will be a billionaire?**

**Gender**

Table

Description automatically generated

*Transition.*

**Interhitance**

Chart, bar chart

Description automatically generated

*Transition***. Citizenship**

Chart

Description automatically generated

**Worth by Billions in Wealth Type**

Chart, line chart

Description automatically generated

**Wealth Type and Billionaire Status**

Chart, bar chart

Description automatically generated

**The End.**