Assignment 8: Text Link Analysis

Predict 453

Section 55

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In Compliance with Master of Science Predictive Analytics

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Text Link Analysis

In my current job, I manage US Bank's credit portfolio for fraud losses. This entails establishing fraud trends, blocking accounts, establishing systems to communicate with customers, and analyzing the fraud. While text analytics is not currently being utilized in my department, through this exercise I have found unique ways to integrate text analytics that will result in better diagnosing of fraud trends.

The most costly emerging fraud trend is when crooks hack into merchant databases and steal customer card information. When this occurs, the merchant becomes a 'Fraudulent Merchant' for the duration of the exposed data breach. The text link I created combines account numbers, which are text characters in this situation, and all merchants based on transaction history. As customers transact with merchants, the text link monitors for 'Fraudulent Merchants' and creates a marking and additional column for each transaction based on fraud. Through linking the account number and merchant, fraudulent transactions are linked to a specific account number, which allows the bank to take action beyond the initial transaction.

Once fraud is established, action must be taken to inhibit and limit the amount of loss incurred. Banks have different levels of customers, and require different interactions. Through linking the customer name with their level and the analysis of fraud, an action is derived. For example, VIP's are high value customers and it is more profitable for the bank to take the initial fraud loss and follow up with a phone call rather than risk angering the VIP by blocking the transaction and card. Yet, for normal customers placing a block on the transaction and account is necessary to keep fraud losses manageable. This text link system is the first line of defense against fraudulent transactions at fraudulent merchants.

Being a victim of fraud is a violating and stressful situation. Given that banks are service orientated institutions, keeping customers satisfied through the fraud experience is essential to establishing a loyal brand following. The third text link example seeks to gather the overall sentiment, positive or negative, from each customer. Through linking the customer name with the feedback and then analyzing the feedback for sentiment, management has the ability to analyze the overall outcome from the customer's feedback and create iterations in the fraud operations process. Category two in this example would need a predefined library of sentiment terms similar to the Customer_Satisfaction survey in SPSS Text Mining.

The processes for analyzing the fraud thus far in my text link examples are myopic in nature. Realistically, banks have millions of transactions a day and need to generalize the fraud trends in order to gather a big-picture of the fraud landscape. Through analyzing the point of sale and classifying it into a more generalized category, management has the ability to establish larger fraud trends. The result of this new category can easily be counted and statistically analyzed across different segments of the bank.

As with many businesses, the bottom line comes down to dollars and cents. Example 5 combines numerical data with text data and establishes the overall implication from the transaction. The electronic funds transfer industry is highly regulated on who is culpable for fraud losses. As new payment methods increase, validating identity is a continual challenge, and chargeback rights are based on proof of identity. The last text link mines the transaction type specifically for the chargeback identifiers and groups it with the numerical loss to create a new category that reveals the net loss or net gain from the transaction.

While I am new to fraud analytics and text analytics, fraud analytics has the opportunity to benefit from the advancements being made in the field of text analytics. I realize my examples may be short-sighted in nature and rather simple, but the opportunity to fine tune fraud strategies based on text data has the potential to improve the customer experience, cut processing costs, and stop fraud trends before they develop into major losses.

Comprimise

☒ Describe five examples of linking two or more categories.

☒Specify the logic that would be applied (e.g., A plus B but not C) and

☒Provide a short description of why this logic is needed for each of the five linkages.

Submit your summary in Word or a Word-compatible format. Submit the category mappings in Excel or an Excel compatible format. Include your name and the date at the top of each document. Use page numbers on all documents. Include your last name at the beginning of each file name