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ANALYSIS OF THE EXISTENCE OF THE ACCOUNTING PROFESSION IN THE ERA OF SOCIETY 5.0 WITH THE NAIVE BAYES METHOD

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ABSTRACT
Society 5.0 has opened a new phenomenon that allows humans to use modern-based science (Artificial Intelligence) for human needs with the goal of human life more easily. This phenomenon opens up various new possibilities and risks simultaneously. These changes have had a significant impact on the development of the accounting profession, resulting in fewer human resources needed in business, including accounting staff. This research aims to 1) Apply sentiment analysis to the existence of the accounting profession in the era of society 5.0. 2) Application of the naive Bayes method to classify sentiment analysis for the existence of the accounting profession in the era of society 5.0. 3) Testing the naive Bayes algorithm in sentiment analysis for the existence of the accounting profession in the era of society 5.0. This research design uses quantitative research, analysis of student sentiment on the existence of the accounting profession was carried out using data from 432 student opinions from several campuses in the East Java region. Test data using the Naïve Bayes algorithm with Term-Frequency Inverse Document Frequency feature selection and the Lexicon method. The results of this research are divided into five parts consisting of the first part 424 students' opinions on the level of accuracy (78%), the second part 427 students' opinions on the level of accuracy (62%), the third part 429 students' opinions on the level of accuracy (47%), the fourth part 425 students' opinions level of accuracy (56%), fifth part 429 student opinions level of accuracy (52%). It was found that the number of positive sentiments was more dominant than negative or neutral sentiments.

Keywords:
Naïve Bayes, Accounting Profession, Society 5.0

INTRODUCTION

Entering the era of Society 5.0 is a concept that allows humans to use modern-based science (Artificial Intelligence, Robotic) for human needs with the aim that humans can live more easily. This phenomenon opens up new possibilities while simultaneously increasing risks. These changes have had a significant impact on the development of the accounting profession, making not many human resources needed in business including accounting staff. This has resulted in the accounting profession underestimating the impact of technology on the work of accountants (Rosmida, 2019).

In recent years, various media have presented information about professions and jobs where humans have a diminishing role. The Minister of Finance, Sri Mulyani, said that in the next 5 years, the valuation, accounting, and actuarial service professions will be replaced by robots (Hendra, 2019). The main reason is related to the development of information technology, robots, computerization, and other automation. Similar information was also published by The Guardian, World Economic Forum, McKinsey Global Institute (MGI), Business Insiders, Forbes, USA Today, Money, and Barclays, (Guardian 2018; WEF 2018; Business Insider 2018; USA Today 2018; Barclays 2018; Money 2018; Forbes 2018) written in a magazine

article (Singgih, 2018) mentioning that the work of accountants and auditors will be taken over by the role of robots/computers in the next 20 years. The accountant profession in the era of Society 5.0 is predicted to be replaced by information technology (Singgih, 2018).

According to Chasanah (2020), Head of the Center for Financial Professional Development of the Secretariat General of the Ministry of Finance of the Republic of Indonesia, the possibility of the accountant profession being replaced by robots is 95 percent. The percentage is due to the development of Robotics and Data Analytics (Big Data) which takes over the basic work done by accountants (recording transactions, processing transactions, sorting transactions). This is the same as the accountant profession, at least 15 million jobs will be released to technology people in the coming years, 59% of small business owners will no longer need accountants in the next 10 years, the concept of reporting analysis can change and the profession that can be replaced by AI is accountants (Reported in www.ui.ac.id) in a research journal (Kriswoyo et al., 2020).

The last few months before this research was conducted, Artificial Intelligence developed ChatGPT (Generative Pre-Trained Transformer) (Lund & Wang, 2023) in his research conveyed ChatGPT's ability to perform data-based tasks and break down main topics into sub-topics which in turn AI and GPT will have an impact on academics and libraries. Soeprajitno, (2019) conveyed specifically, the birth of artificial intelligence in the accounting sector quoted from the Association of Chartered Certified Accountants (ACCA) report, will facilitate and change the accounting profession from a bookkeeper to an advisory service. A similar argument was also presented by Oxford University academics Frey & Osborne, (2017) the result is that certified accountants have a 95% risk of experiencing automation in the next two decades. The results of this study are also reinforced by previous researchers (Byrne & Willis, 2013) that students perceive accounting as something boring, certain, precise, and driven by compliance. (Andrew, 2017) from Celaton stated that technology is developing faster and it seems that robots will take over human jobs faster than expected.

Based on the phenomena presented earlier, in this study, sentiment analysis of students needs to be carried out to see students' responses to the existence or non-existence of the accounting profession in the era of society 5.0. Sentiment analysis studies the perspective, behavior, and feelings or emotions of a person toward an individual, problem, activity, or subject (Samad et al, 2012). The grouping of reviews from respondents is influenced by emotions (sentiments) which are grouped or classified to determine their polarization, namely positive or negative (Ridok, 2016). Sentiment analysis is a method used to process comments given by respondents through various media regarding a product, service, or agency (Sipayung et al., 2016). Sentiment analysis is a fairly popular field of research because it can provide benefits for various aspects, ranging from politics and investor decision-making (Vinita Chandani et.al, 2015) the link in research is the development of a profession.

Several studies have been conducted regarding sentiment analysis, including (Muzakki et al., 2019) analyzing student sentiment towards facilities at Telkom University. The test results show a good accuracy rate of up to 91.23%. Other research was also conducted by (Yulita et al., 2021) entitled Sentiment Analysis of Public Opinion about the COVID-19 Vaccine using the naive Bayes classifier

algorithm. The results show that most tweets have a positive attitude (60.3%), while the number of neutral tweets (34.4%) exceeds the number of tweets against (5.4%) with a resulting accuracy value of 0.93 (93%).

Based on the main ideas presented earlier, further research needs to be done to find out student opinions on phenomena that occur in the accounting profession. Sentiment analysis can be done by classifying opinions in the form of text according to student sentiment toward the existence of the accounting profession in the era of society. Classification is the process of finding a model that classifies data. In Artificial Intelligence there are various document classification techniques such as Naive Bayes Classifier, Support Vector Machine, and Decision Tree. The amount of data used requires a classification method with fast and accurate performance. This research limits the study to the Naive Bayes Classifier method using the results of student sentiment opinions that will be processed using the Naive Bayes algorithm.

METHOD

The method used to conduct research is the quantitative method. The stages of the research are data collection, analysis and system requirements, system implementation, system testing, and evaluation. This research design refers to the framework in the figure. The stages of research can be seen in Figure 1

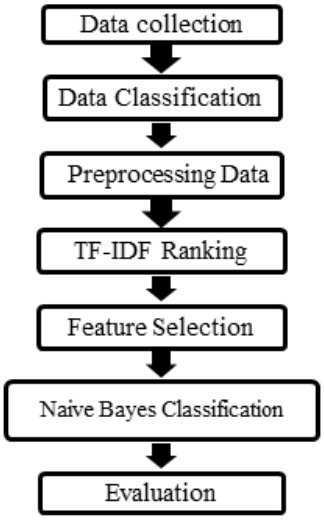


Figure 1. Research design.

Data Collection

The data used as a dataset is the opinion of accounting students on the phenomena that occur in the accounting profession in the era of Society 5.0 on several campuses in East Java.

The number of datasets used is quite large, so the data will be used as training data and also test data with a balanced amount in each positive, neutral, and negative class. The data collection process was carried out in two ways, first through Google Forms, secondly visiting respondents directly. The following amount of data collected from several universities can be seen in Table 1.

Table 1. Respondent Result

No	Name of University	Total
1	Universitas Negeri Malang	111
2	Universitas Trunojoyo Madura	8
3	Univ. PGRI Kanjuruhan Malang	55

No	Name of University	Total
4	Universitas Brawijaya	14
5	UPN Veteran	2
6	Universitas Islam Zainul Hasan	2
7	Univ. Muhammadiyah Malang	6
8	Universitas Gajayana Malang	13
9	Politeknik Negeri Malang	21
10	Universitas Nurul Jadid	1
11	Universitas Islam Malang	8
12	UIN Maulana Malik Ibrahim	42
13	Universitas Jember	74
14	Universitas Katolik Widya Karya	11
15	Universitas Panca Marga	54
16	Telkom University	1
17	Univ. Bhayangkara Surabaya	1
18	Universitas Wisnuwardhana	38
19	STIE Malangkucecwara	2
20	Institut ASIA Malang	1
Total		465

Based on the amount of data collected, there were 33 respondents with non-accounting majors, including 3 respondents with Sharia Economics majors, 1 respondent majoring in Arabic Literature, 1 Respondent majoring in Guidance and Counseling, 10 respondents in Development Economics, 14 respondents majoring in management, 1 respondent in Interior Design, 1 Respondent majoring in Taxation, 1 respondent majoring in Office Administration Education and 1 respondent majoring in Commerce Education. So the results of the data obtained are 432 respondents who will be processed.

RESULTS AND DISCUSSION

Problem Formulation

In this research, we decided to use the Naïve Bayes algorithm with two feature selections, namely Term Frequency and Term Frequency-Inverse Document Frequency. Of the 432-respondent data that has been collected, each respondent gets five questions so in total there are 2,160 student opinions. In this study, the processed student opinion data is divided into five parts according to the research questions that have been filled in previously by students.

Data Input

The first part has 424 student opinions divided into 339 training data and 85 test data. The second section has 427 student opinions divided into 341 training data and 86 test data. The third section has 429 student opinions divided into 343 training data and 86 test data. The fourth section has 425 student opinions divided into 340 training data and 85 test data. The fifth section has 429 student opinions divided into 343 training data and 86 test data.

Data Labeling Stage

Before the lexicon-based process is carried out, the data is first translated from Indonesian into English. The translation stage needs to be done because the next stage will use the English Vader Library, Vader is used to analyze data based on the lexicon (dictionary).

After the translation process is carried out, the next step is to classify or label the data so that the score polarity < 0 is negative, the score polarity = 0 is neutral, and the score polarity > 0 is positive.

The first part after the lexicon-based process obtained negative data with a percentage of 14.62% and the data obtained was 62 data. Neutral data with a percentage of 9.67% and the data obtained is 41 data. Positive data with a percentage of 75.71% and 321 data obtained.

The second part after the lexicon-based process obtained negative data with a percentage of 11.24% and 48 data obtained. Neutral data with a percentage of 35.36% and 151 data obtained. Positive data with a percentage of 53.4% and 228 data obtained.

The third part after the lexicon-based process obtained negative data with a percentage of 16.08% and the data obtained was 69 data. Neutral data with a percentage of 32.17% and 138 data obtained. Positive data with a percentage of 51.75% and 222 data obtained.

The fourth part after the lexicon-based process obtained negative data with a percentage of 7.76% and the data obtained was 33 data. Neutral data with a percentage of 32.71% and the data obtained is 139 data. Positive data with a percentage of 59.53% and 253 data obtained.

The fifth part after the lexicon-based process obtained negative data with a percentage of 11.66% and the data obtained was 50 data. Neutral data with a percentage of 38% and 163 data obtained. Positive data with a percentage of 50.35% and 216 data obtained.

Preprocessing Data

a. Case Folding

Change all capital letters to lowercase (society in my opinion is something that will make it easier for humans in their daily lives and can help with increasingly diverse problems even though society seems to sound like high technological progress in this era human soft skills also play an important role so that technological advances can integrate with real life)

a) Tokenization

` The stage of separating the words in each sentence to facilitate the data analysis process. (a human-centered, concept, that, collaborates, with, technology, in, solving, social, problems. it is hoped that with this concept various gaps in society can be resolved more effectively)

b) Word Normalization

The process of converting unstandardized language into standardized language. (a human-centered concept that collaborates with technology in solving social problems. it is hoped that with this concept various gaps in society can be resolved more effectively)

c) Stopword Removal

Changing an insignificant word that often appears is called a stopword. (society in my opinion is something that will make it easier for humans in their daily lives and can help with increasingly diverse problems even though society seems to sound like high technological progress in this era human soft skills also play an important role so that technological advances can integrate with real life).

d) Steaming

Change the word to its base word. (Society in my opinion is something that will make it easier for humans in their daily lives and can help with increasingly diverse problems even though society seems to sound like high technological progress in this era human soft skills also play an important role so that technological advances can integrate with real life.)

TF-IDF *(Term Frequency-Inverse Document Frequency)*

At this stage is important to know whether the words used are informative and relevant or not. The following Table 2. shows the TF-IDF results displayed for example only 10 words taken from the fifth section from the total of all sections, namely the first section to the fifth section.

Table 2. TF-IDF results

No	Term	Frequency/Weight
1	Yes	1018
2	Nomor	620
3	He	414
4	Think	933
5	Keep	508
6	On	632
7	Competing	173
8	It	496
9	Seems	821
10	That	921

Feature Selection

This stage will select important words/features to be included in machine learning. This stage is done to improve model performance and reduce data dimensionality so that selecting the most relevant features can help the model become more efficient and accurate. The selected method of feature selection is the filter method with SelectKbest and assessment using Chi-square. In this document, in the first section, there are about 1241 features, in the second section about 1071 features, in the third section 999 features, in the fourth section 1093 features, and in the fifth section 1023 features, but in all sections, the features taken as many as 1000 features, only in the third section taken as many as 500 features. The higher the value obtained, the better the feature.

Visualization

After data processing, the words that often appear in the data can be visualized in the form of the word cloud. Wordcloud can be classified into Wordcloud with positive sentiment, wordcloud with neutral sentiment, and Wordcloud with negative sentiment. This study only displays one-fifth part Wordcloud, from the total of all parts, namely the first part to the fifth part.

a. Fifth Section

a) *Wordcloud* Positive Sentiment

Figure 2. *Wordcloud* Positive Sentiment

b) *Wordcloud* Neutral Sentiment

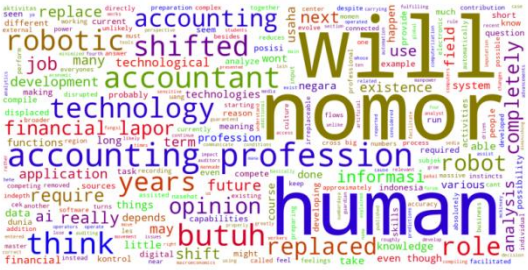


Figure 3. *Wordcloud* Neutral Sentiment

c) *Wordcloud* Negative Sentiment

Figure 4. *Wordcloud* Negative Sentiment

Naïve Bayes Modeling

The Naive Bayes algorithm is used to assign a sentence as a positive, neutral, or negative sentiment set based on the calculated probability value of the larger Bayes formula

Training data and testing data are separated with a ratio of 80:20

Table 3. First Part of Training Data and Testing Data

Many data x-train	339
Much data from X-test	85
Many data y-train	339
Many data y-test	85

Table 4. Second Part of Training Data and Testing Data

Many data x-train	341
Much data from X-test	86
Many data y-train	341
Many data y-test	86

Table 5. Part Two Training Data and Testing Data

Many data x-train	343
Much data from X-test	86
Many data y-train	343
Many data y-test	86

Table 6. Part Three Training Data and Testing Data

Many data x-train	340
Much data from X-test	85
Many data y-train	340
Many data y-test	85

Table 7. Section Four Training Data and Testing Data

Many data x-train	343
Much data from X-test	86
Many data y-train	343
Many data y-test	86

Evaluation

In the evaluation section, Confusion Matrix was chosen as a testing method to test the accuracy of the Naive Bayes method so that the accuracy results can be known.

a. First section

Table 8. The first part of the Confusion Matrix

True Negative (TN)	0
False Negative (FN)	0
True Positive (TP)	0
False Positive (FP)	0

Table 9: First section of the Evaluation Library

Correct Prediction	66 data
Prediction Data	19 data
Algorithm Accuracy	78%

The results of the classification report from the Naive Bayes algorithm, an accuracy value of 78% have been obtained.

b. Second section

Table 10. The second part of the Concussion Matrix

True Negative (TN)	0
False Negative (FN)	0
True Positive (TP)	5
False Positive (FP)	0

Table 11: Second part of the Evaluation Library

Correct Prediction	53 data
Prediction Data	33 data
Algorithm Accuracy	62%

The results of the classification report from the Naive Bayes algorithm, an accuracy value of 62% have been obtained.

c. Third section

Table 12. The third part of the Concussion Matrix

True Negative (TN)	4
False Negative (FN)	0
True Positive (TP)	3
False Positive (FP)	0

Table 13: Third section of the Evaluation Library

Correct Prediction	40 data
Prediction Data	46 data
Algorithm Accuracy	47%

The results of the classification report from the Naive Bayes algorithm, an accuracy value of 47% have been obtained.

d. Fourth section

Table 14. Fourth Part of the Concussion Matrix

True Negative (TN)	0
False Negative (FN)	0
True Positive (TP)	0
False Positive (FP)	0

Table 15: Fourth Section Library Evaluation

Correct Prediction	48 data
Prediction Data	37 data
Algorithm Accuracy	56%

The results of the classification report from the Naive Bayes algorithm, an accuracy value of 56% have been obtained.

e. Fifth section

Table 16. The fifth part of the Concussion Matrix

True Negative (TN)	4
False Negative (FN)	0
True Positive (TP)	6
False Positive (FP)	5

Table 17: Fifth Section Library Evaluation

Correct Prediction	45 data
Prediction Data	41 data
Algorithm Accuracy	52%

Hasil dari *classification report* dari algoritma *Naive Bayes,* telah diperoleh nilai akurasi sebesar 52%.

Discussion

Sentiment Classification Results

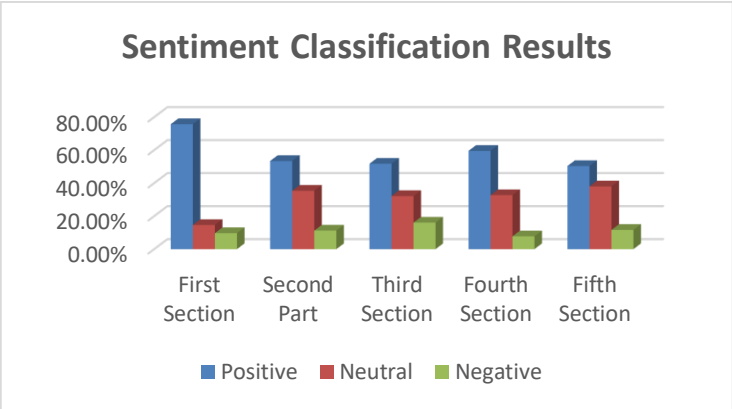


Figure 5. Student Sentiment Classification Results

The following is an explanation of the results of the analysis of student opinion sentiment classification which is divided into five parts based on the results of the researcher's questions:

a) In the results of the classification of student opinion sentiment with lexicons based, obtained from five parts all have positive sentiments with each different percentage. The first part of the positive sentiment is 75.71%, the neutral sentiment is 14.62%, negative sentiment is 9.67%. The second section of positive sentiment is 53.4%, neutral sentiment is 35.36%, negative sentiment is 11.24%. The third section of positive sentiment is 51.75%, neutral sentiment is 32.17%, negative sentiment is 16.08%. The fourth section of positive sentiment is 59.53%, neutral sentiment is 32.71%, negative sentiment is 7.76%. The fifth part of the positive sentiment is 50.35%, the neutral sentiment is 38%, negative sentiment is 11.66%.

b) In the results of the classification of student opinion sentiment with lexicons based, in the first part, 321 data with positive sentiment are obtained, 41 data with neutral sentiment, and 62 data with negative sentiment. The second part obtained 228 positive sentiment data, 151 neutral sentiment data, and 48 negative sentiment data. The third part obtained 222 positive sentiment data, 138 neutral sentiment data, and 69 negative sentiment data. The fourth part obtained 253 positive sentiment data, 139 neutral sentiment data, and 33 negative sentiment data. In the fifth section 216 positive sentiment data, 163 neutral sentiment data, and 50 negative sentiment data.

c) Based on the classification results using the lexicon-based method and the naive Bayes algorithm with the term-frequency inverse document frequency feature, overall positive sentiment is more dominant than negative or neutral sentiment.

d) The number of positive sentiments that are more in the classification using the lexicons-based method is due to the large number of student opinions that contain words in the positive lexicon dictionary than words in the negative lexicon dictionary.

Result Accuracy Level

Accuracy gives an idea of the extent to which the model succeeds in classifying the data correctly. The higher the accuracy value, the better the model is at performing the correct classification.

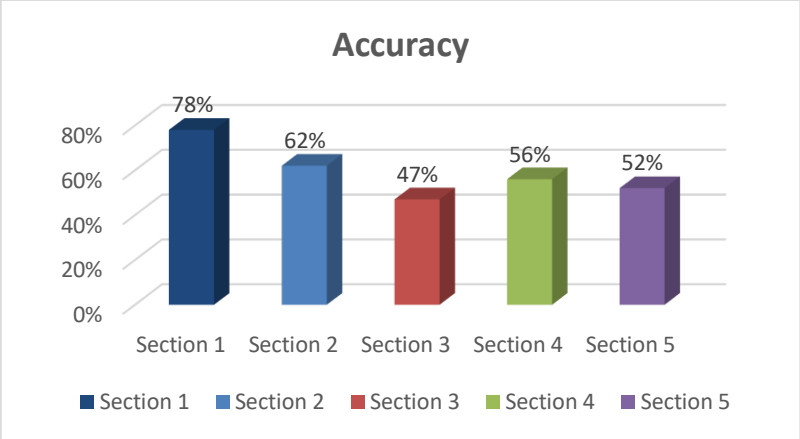


Figure 6. Accuracy Results

78% accuracy: The Naive Bayes model achieved an accuracy of 78%. This indicates that out of all the predictions made by the model, 78% of them were correct. This is a relatively good accuracy rate.

Accuracy of 62%: An accuracy of 62% indicates that the Naive Bayes model has a lower success rate in predicting compared to the first case. This could be an indication that the model needs further adjustment or optimization.

47% Accuracy: An accuracy of 47% indicates that the Naive Bayes model has a low performance in predicting. In this context, it is necessary to evaluate whether the model has specific challenges, such as class imbalance or problems in the training data.

Accuracy of 56%: An accuracy of 56% indicates a moderate performance of the model. It indicates that the Naive Bayes model can predict correctly about half of the time.

52% Accuracy: An accuracy of 52% indicates an unsatisfactory performance of the Naive Bayes model. The model is not significantly better than random guessing (50%). In this case, further evaluation and analysis of the model may be required to understand what improvements can be made.

Precision

This metric provides information on how well the model avoids making false positives.

Precision ranges between 0 and 1, with higher values indicating that the model has better accuracy in identifying positive data.

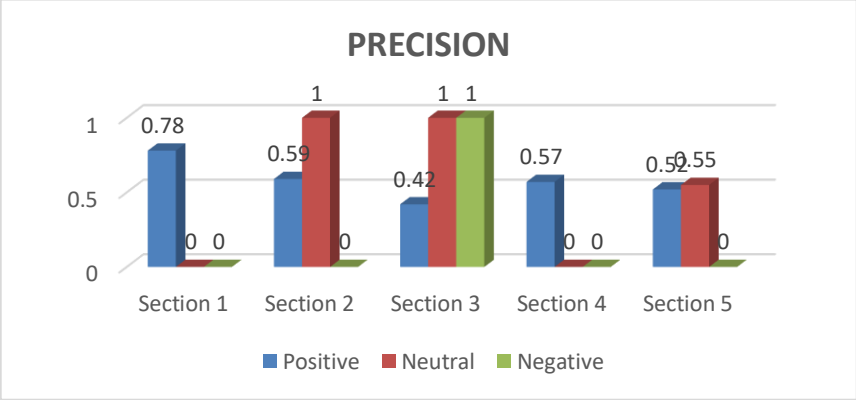


Figure 7. Precision Results

Precision 0,78: Precision sebesar 0,78 menunjukkan bahwa dari semua instance yang diprediksi sebagai positif oleh model, sekitar 78% benar-benar adalah positif. Precision 0: Precision sebesar 0 menunjukkan bahwa model tidak membuat prediksi positif yang benar. Precision 0: Precision sebesar 0 juga menunjukkan bahwa model tidak membuat prediksi positif yang benar.

Precision 0,59: Precision sebesar 0,59 menunjukkan bahwa dari semua instance yang diprediksi sebagai positif oleh model, sekitar 59% benar-benar adalah positif. Precision 1: Precision sebesar 1 (atau 100%) menunjukkan bahwa model membuat semua prediksi positif dengan benar. Precision 0: Precision sebesar 0 menunjukkan bahwa model tidak membuat prediksi positif yang benar.

Precision 0,42: Precision sebesar 0,42 menunjukkan bahwa dari semua instance yang diprediksi sebagai positif oleh model, sekitar 42% benar-benar adalah positif. Precision 1: Precision sebesar 1 (atau 100%) menunjukkan bahwa model membuat semua prediksi positif dengan benar. Precision 1: Precision sebesar 1 (atau 100%) juga menunjukkan bahwa model membuat semua prediksi positif dengan benar.

Precision 0,57: Precision sebesar 0,57 menunjukkan bahwa dari semua instance yang diprediksi sebagai positif oleh model, sekitar 57% benar-benar adalah positif. Precision 0: Precision sebesar 0 menunjukkan bahwa model tidak membuat prediksi positif yang benar. Precision 0: Precision sebesar 0 juga menunjukkan bahwa model tidak membuat prediksi positif yang benar.

Precision 0,52: Precision sebesar 0,52 menunjukkan bahwa dari semua instance yang diprediksi sebagai positif oleh model, sekitar 52% benar-benar adalah positif. Precision 0,55: Precision sebesar 0,55 menunjukkan bahwa dari semua instance yang diprediksi sebagai positif oleh model, sekitar 55% benar-benar adalah positif. Precision 0: Precision sebesar 0 menunjukkan bahwa model tidak membuat prediksi positif yang benar.

Recall

This metric provides information on the extent to which the model can avoid missing true positive cases, thus measuring the model's ability to detect positive data.

Recall yields a score between 0 and 1, with higher values indicating that the model has a better ability to identify all true positives.

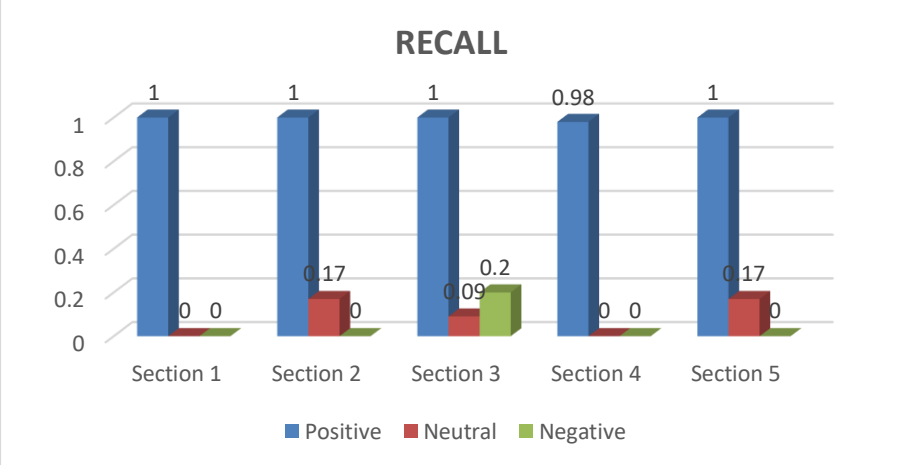


Figure 8. Recall Results

Recall 1 (100%): A recall of 1 or 100% indicates that the Naive Bayes model can perfectly identify all positive instances. Recall 0: A recall of 0 indicates that the model cannot identify any positive instances at all. Recall 0: Recall of 0 also indicates that the model cannot identify any positive instances at all.

Recall 1 (100%): Recall 1 or 100% indicates that the Naive Bayes model can identify all positive instances perfectly. Recall 0.17 (17%): A recall of 0.17 indicates that the model can only identify about 17% of all positive instances that should have been identified. Recall 0: A recall of 0 indicates that the model could not identify any positive instances at all.

Recall 1 (100%): A recall of 1 or 100% indicates that the Naive Bayes model can identify all positive instances perfectly. Recall 0.09 (9%): A recall of 0.09 indicates that the model can only identify about 9% of all positive instances that should have been identified. Recall 0.2 (20%): A recall of 0.2 indicates that the model can identify about 20% of all positive instances that should have been identified.

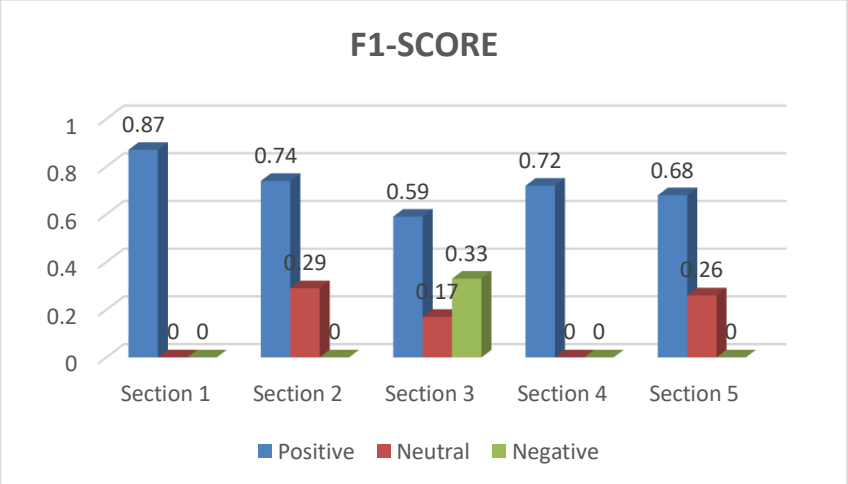
Recall 0.98 (98%): Recall of 0.98 indicates that the Naive Bayes model can identify about 98% of all positive instances that should have been identified. Recall 0: A recall of 0 indicates that the model could not identify any positive instances at all. Recall 0: Recall of 0 also indicates that the model could not identify any positive instances at all.

Recall 1 (100%): Recall 1 or 100% indicates that the Naive Bayes model can identify all positive instances perfectly. Recall 0.17 (17%): A recall of 0.17 indicates that the model can only identify about 17% of all positive instances that should have been identified. Recall 0: A recall of 0 indicates that the model could not identify any positive instances at all.

F1-Score

F1-Score is used to strike a balance between precision and the ability to detect true positive cases (recall) or measure the overall performance of the model.

F1-Score ranges from 0 to 1, where a value of 1 indicates perfect performance, while a value of 0 indicates very poor performance. The higher the F1-score value, the better the model's performance in achieving a balance between precision and recall.



F1-Score Results

F1-score 0.87: An F1-score of 0.87 indicates a good balance between precision and recall. F1-score 0: An F1-score of 0 indicates that either precision or recall has a value of 0. F1-score 0: An F1-score of 0 also indicates that either precision or recall has a value of 0.

F1-score 0.74: An F1-score of 0.74 indicates a good balance between precision and recall. F1-score 0.29: An F1-score of 0.29 indicates that either precision or recall has a low value. F1-score 0: An F1-score of 0 indicates that either precision or recall has a value of 0.

F1-score 0.59: An F1-score of 0.59 indicates a moderate balance between precision and recall. F1-score 0.17: An F1-score of 0.17 indicates that either precision or recall has a low value. F1-score 0.33: An F1-score of 0.33 indicates a moderate balance between precision and recall.

F1-score 0.72: An F1-score of 0.72 indicates a good balance between precision and recall. F1-score 0: An F1-score of 0 indicates that one of the precision or recall has a value of 0.

F1-score 0.68: An F1-score of 0.68 indicates a good balance between precision and recall. F1-score 0.26: An F1-score of 0.26 indicates that either precision or recall has a low value. F1-score 0: An F1-score of 0 indicates that either precision or recall has a value of 0.

CONCLUSION

Based on the results of the discussion of the research that has been conducted related to the existence of the accounting profession in the era of Society 5.0, the following conclusions can be drawn: The results of the classification of student sentiment are divided into five parts consisting: The first part of 424 student opinions obtained some positive sentiments that are more dominant than negative and neutral sentiments. The results show that the presence of Society 5.0 is seen as a positive phenomenon because of efficiency, effectiveness, and productivity it is very helpful in various sectors with a record of being ready for change utilizing continuous improvement skills so that the changes that occur lead to a more positive direction The second section 427 student opinions obtained some positive sentiments that are more dominant than negative and neutral sentiments. The results show a work shift that could originally be done by human labor is now replaced by the existence of Big data, Robotics, and Artificial Intelligence, then in terms of work efficiency and effectiveness and being able to minimize costs incurred. The third section of 429 student opinions obtained a greater number of positive sentiments compared to neutral and negative sentiment levels, with the results of this study interpreting that students agree that the accounting profession is one part of the profession affected by the disruption. The fourth section of 425 student opinions obtained a greater number of positive sentiments compared to the level of negative and neutral sentiments. The results of this study indicate that the accounting profession in its activities is greatly assisted by the existence of robotics, Big Data, and Artificial intelligence technology. In the fifth section, 429 student opinions obtained a greater number of positive sentiments compared to the level of negative and neutral sentiments, with the results of this study it can be seen that students who give a positive response to the accounting profession will be displaced by Robotic, Big Data, and Artificial intelligent technology if not balanced with STEM knowledge (Science, Technology, Engineering, Mathematics).

Accuracy value on Naïve Bayes algorithm with Term-Frequency Inverse Document Frequency feature selection: The first part of the accuracy value (78%) shows that out of all the predictions made by the model 78% of them are correct. This is a relatively good accuracy rate. The second part of the accuracy value (62%) shows that the Naive Bayes model has a lower success rate in predicting compared to the first case. The third part of the accuracy value (47%) shows that the Naive Bayes model has a low performance in predicting. In this context, it is necessary to evaluate whether the model has specific challenges, such as class imbalance or problems in the training data.

The fourth part of the accuracy value (56%) shows the moderate performance of the model. It shows that the Naive Bayes model can predict correctly about half of the time. The fifth section's accuracy value (52%) shows the unsatisfactory performance of the Naive Bayes model. The model is not significantly better than random guessing (50%). In this case, further evaluation and analysis of the model may be required to understand what improvements or enhancements can be made.

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