

## **In-depth Sentiment Analysis of The Independent Campus Program in Islamic Higher Education using Abstractive Summarization**

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### **Abstract**

The implementation of the Merdeka Belajar Kampus Merdeka (MBKM) policy in Islamic Higher Education (PTKI) represents a significant shift in Indonesia's education system. This study evaluates the impact of MBKM on PTKI institutions using sentiment analysis and automatic text summarization. By analyzing 2,416 tweets (2020-2023) from PTKI academics, this study highlights perceptions, challenges, and policy implications. Results indicate that 82.76% of tweets expressed positive sentiment, emphasizing the benefits of MBKM in curriculum flexibility and industry collaboration. However, 17.24% of tweets highlighted challenges, including policy mismanagement, unclear implementation, and student stress. To enhance policy effectiveness, this study recommends stronger institutional support, clearer policy guidelines, and enhanced digital infrastructure to ensure MBKM benefits all PTKI students equitably.

Keywords: Automatic Text Summarization, Independent Campus Program, Sentiment Analysis, Transformers

### **Abstrak**

Penerapan kebijakan Merdeka Belajar Kampus Merdeka (MBKM) di Perguruan Tinggi Islam (PTKI) merupakan pergeseran signifikan dalam sistem pendidikan Indonesia. Studi ini mengevaluasi dampak MBKM terhadap institusi PTKI menggunakan analisis sentimen dan ringkasan teks otomatis. Dengan menganalisis 2.416 tweet (2020-2023) dari akademisi PTKI, studi ini menyoroti persepsi, tantangan, dan implikasi kebijakan. Hasil penelitian menunjukkan bahwa 82,76% tweet menyatakan sentimen positif, menekankan manfaat MBKM dalam fleksibilitas kurikulum dan kolaborasi industri. Namun, 17,24% tweet menyoroti tantangan, termasuk salah urus kebijakan, implementasi yang tidak jelas, dan stres mahasiswa. Untuk meningkatkan efektivitas kebijakan, studi ini merekomendasikan dukungan kelembagaan yang lebih kuat, pedoman kebijakan yang lebih jelas, dan peningkatan infrastruktur digital untuk memastikan MBKM memberi manfaat yang adil bagi semua mahasiswa PTKI.

Kata kunci: Analisis Sentimen, Kampus Merdeka, Peringkasan Teks Otomatis, Transformers

## **INTRODUCTION**

The evolution of education from time to time occurred with the aim of producing people who are able to adapt to changes in the times and build a better civilization. Starting from Education 1.0 with pedagogical learning where teachers are the center of knowledge and textbooks are sources of material (Gerstein 2014). Entering Education 2.0, learning is carried out using an andragogy approach where communication and discussion between teachers and students are carried out extensively (Gerstein 2014; Halupa 2015). The andragogy approach in Education 3.0 is characterized by collaboration, where learners are connectors, creators, and constructivists. Then, along with the development of technology, learning entered Education 4.0 with a heutagogy approach that applies flexibility and creativity across fields remotely. The heutagogy approach allows self-determined learning with various distance learning methods and becomes a 21<sup>st</sup>-century learning method because it utilizes technological advances comprehensively (Blaschke 2018; Blaschke and Hase 2016; Qassrawi 2023). Until Education 5.0 emerged as a manifestation of

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the future of education that implements real learning experience, network learning, and experimental learning to develop the personal competence of learners (Habash 2022; Rahim 2021; Skitsko and Osypova 2023).

The need for learning models that are in accordance with the needs of the times in every educational evolution encourages the government, in this case the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek), to innovate with the *Merdeka Belajar* (Independent Learning) priority program. Until now, there are 24 policies or programs related to this Merdeka Belajar program, one of which is the Merdeka Kampus Program, which is currently known as the *Merdeka Belajar-Kampus Merdeka* (MBKM, Independent Learning-Independent Campus) program. (Kementerian Pendidikan 2022).

This MBKM program certainly has an impact on the curriculum and learning process in higher education. The Ministry of Religion has 1,413 higher education institutions with a total of 27,772 students per odd semester 2023/2024 (Direktorat Jenderal Pendidikan Islam Kementerian Agama RI 2022). Madrasah institutions in 2022, 2,472 madrasah institutions have implemented the independent curriculum (Khoeron 2023), which is supported by the Guidelines for the Implementation of the Independent Curriculum in Madrasahs which are stipulated based on the Decree of the Minister of Religion of the Republic of Indonesia Number 347 of 2022 (K. A. R. I. Direktorat Jenderal Pendidikan Islam 2022). Meanwhile, in Religious Higher Education Institutions, especially Islamic ones, of the 964 PTKIs, it has not been recorded what percentage has implemented MBKM.

Based on the Regulation of the Minister of Education and Culture Number 3 of 2020, this MBKM policy allows students to study outside their study program for 3 semesters. The right to study for 3 semesters outside the study program can be implemented in the form of 8 programs illustrated in Figure 1, including the Student Exchange program, Internship/Work Practice program, Teaching Assistance program in Educational Units, Research/Research program, Humanitarian Project program, Entrepreneurship program, Independent study/Project program, and Village Development program.

The Islamic Religious College (PTKI) within the Indonesian Ministry of Religion also welcomed the MBKM program. In fact, the Ministry of Religion has an additional program, namely Religious Moderation (Direktorat Jenderal Pendidikan Islam 2022). The MBKM policy of PTKI within the Ministry of Religious Affairs is based on the Decree of the Director General of Islamic Education Number 1591 of 2022 concerning Technical Instructions for the Implementation of Independent Learning-Independent Campus (MBKM) in Islamic Religious Higher Education. Various adjustments, especially in the curriculum and academic facilities, have been experienced by all PTKI. Since the announcement of the MBKM program in 2020, PTKI has been looking for an effective MBKM implementation pattern so that the MBKM goals can be achieved. During this period, various opinions emerged from the academic community within PTKI that took the initiative to start and compile guidelines for the implementation of their respective MBKM programs. Therefore, the development of MBKM implementation in PTKI needs to be evaluated, one of which is by knowing the opinions of the PTKI academic community from year to year since the MBKM program was launched.

Indonesia will have an abundant young generation demographic in 2045. This period is called the golden age of Indonesia. Therefore, entering the era of Industry 5.0 with the rapid development of science and technology, the government, through the Ministry of Education, Culture, Research, and Technology (Kemendikbud Ristek) prepares the young generation to become individuals who are ready to adapt to VUCA conditions. VUCA is Volatility, Uncertainty, Complexity, and Ambiguity, which are all dynamic (Baran and Woznyj 2021; Mack et al. 2016). The Ministry of Research, Technology, and Higher Education maximizes the heutagogy approach, where students and educators are individual learners through the Independent Learning Independent Campus (MBKM) policy. Based on the Regulation of the Minister of Education and Culture Number

3 of 2020, this MBKM policy allows students to study outside their study program for 3 semesters (Kementerian Pendidikan dan Kebudayaan 2022). The Indonesian Ministry of Education, Culture, Research, and Technology introduced the MBKM policy to enhance educational flexibility, industry collaboration, and independent learning. While MBKM has been widely discussed in higher education, its specific impact on PTKI remains underexplored. This study bridges that gap by evaluating policy effectiveness, societal impact, and institutional challenges in PTKI settings.

The MBKM policy allows students to study outside their academic program for three semesters and participate in internships, entrepreneurship programs, and village development projects. PTKI institutions face unique challenges in implementing this policy due to curriculum adjustments, religious moderation integration, and administrative limitations. Understanding the sentiment of PTKI academics and students provides valuable insights into how MBKM aligns with Islamic education policy objectives.

MBKM aligns with several key priorities of Islamic education policy, including curriculum reform, which encourages interdisciplinary learning while maintaining Islamic values. It also promotes equity in access, ensuring students from Islamic boarding schools and underprivileged backgrounds can benefit from MBKM opportunities. The policy integrates religious moderation, as MBKM's adaptation in PTKI includes the Religious Moderation initiative, promoting tolerance and inclusivity. Additionally, MBKM supports technological innovation in learning, encouraging digital learning tools to enhance Islamic education delivery. By analyzing sentiment, this study evaluates whether MBKM effectively supports these goals within PTKI institutions.

Analysis of PTKI academic community opinions on the implementation of the MBKM program can be done using Natural Language Processing (NLP) technology. NLP is an artificial intelligence technology for processing natural language or linguistic sciences (Chowdhary 2020; Khurana et al. 2023). NLP is a combination of Natural Language Understanding (NLU) and Natural Language Generation (NLG). Where NLU is the process of recognizing human natural language by computers, NLG is the computational process to process the natural language. Opinion analysis can be done using sentiment analysis techniques and automatic text summarization as part of NLP technology. Sentiment analysis is often used to determine the sentiment tendency of an issue or topic, whether the issue is positive, neutral, or negative (Birjali, Kasri, and Beni-Hssane 2021; Wankhade, Rao, and Kulkarni 2022; Yadav and Vishwakarma 2020). Sentiment analysis and opinion mining are two different things but can overlap. Sentiment analysis produces sentiment which is an impression of a text, while opinion analysis produces the content of ideas from a text. Next is automatic text summarization, which is an NLP technology that aims to extract important information from a document in a more concise form (Abualigah et al. 2020; El-Kassas et al. 2021; Widyassari et al. 2022). These two techniques can be combined to obtain an in-depth analysis of opinions on an issue or topic.

Various methods or algorithms continue to be developed in NLP technology. Transformers method, starting from the original transformer (Vaswani et al. 2017), Bidirectional Encoder Representations from Transformers (BERT) (Devlin et al. 2018), Text-to-Text Transfer Transformer (T5) (Raffel et al. 2020), Generative Pre-trained Transformer (GPT)-1 (Yenduri et al. 2023), GPT-2, GPT-3, GPT4, Robustly Optimized (Thoppilan et al. 2022) Pretraining Approach (RoBERTa) (Liu et al. 2019), Language Models for Dialog Applications (LaMDA) (Thoppilan et al. 2022), and Transformer XL (Dai et al. 2019), currently has good performance for various NLP tasks (Rothman 2021; Wolf et al. 2020). Based on the MBKM issue that continues to develop in the PTKI environment, this study aims to analyze changes in the opinions of the PTKI academic community from year to year since the announcement of the MBKM program, starting from 2020 to 2023. Opinion analysis was carried out using automatic text summarization and sentiment analysis techniques using the transformer method.

## RELATED WORKS

The MBKM program in the PTKI environment requires continuous attention and evaluation. Evaluation from the academic community of PTKI can be obtained from the experience of the academic community during the implementation of the MBKM program. By utilizing NLP technology, especially automatic text summarization and sentiment analysis, this study reveals the experience of implementing the MBKM program through the opinions or responses of academic communities in the PTKI environment. Several previous studies discuss sentiment analysis of the MBKM program, sentiment analysis technology, and automatic text summarization using transformers, including:

- a. Sentiment analysis of the MBKM program using machine learning (Febriyani and Februariyanti 2023; Gunawan et al. 2022; Irawansyah and Wiriasto 2023; Pandunata, Ali, and Nurdiansyah 2023; Rahayu, Fauzi, and Indra 2022; Rezki, Thamrin, and Siswanto 2023; Rozaq, Yunitasari, Sussolaikah, and Sari 2022; Rozaq, Yunitasari, Sussolaikah, Sari, et al. 2022; Sartika 2023; Undamayanti, Hermanto, and Kaniawulan 2022). These studies were conducted using various algorithms such as: Naïve Bayes and Multinomial Naïve Bayes (Fayyad et al. 2023; Febriyani and Februariyanti 2023; Irawansyah and Wiriasto 2023; Pandunata et al. 2023; Rahayu et al. 2022; Rozaq, Yunitasari, Sussolaikah, and Sari 2022; Rozaq, Yunitasari, Sussolaikah, Sari, et al. 2022); *Particle Swarm Optimization* (Undamayanti et al. 2022); *Support Vector Machine* (Rahayu et al. 2022; Rezki et al. 2023); *K-Nearest Neighbor* (Gunawan et al. 2022; Rozaq, Yunitasari, Sussolaikah, Sari, et al. 2022; Sartika 2023), and *Decision Tree* (Rozaq, Yunitasari, Sussolaikah, Sari, et al. 2022). Most of these studies collected response or opinion data from social media Twitter; only one study took data from Telegram. The results of many of these studies revealed the tendency of the public to respond to the MBKM program with positive sentiments, although the difference between neutral and negative sentiments was not that significant.
- b. The main output of sentiment analysis research is the findings or valuable information from each sentiment produced, not just the percentage of each sentiment. Therefore, to reveal more deeply the opinion of each sentiment, you can utilize the automatic text summarization technique (Bacco et al. 2021; Bryan, Intan, and Juwiantho 2022; Darmawiguna, Pradnyana, and Jyotisananda 2021; Dogan and Kaya 2019; Gao et al. 2023; Musto et al. 2019; Roul and Sahoo 2020; Setiawan, Darmawiguna, and Pradnyana 2022; Wahid and SN 2016). Several studies have applied this technique to various case studies such as: game reviews (Bryan et al. 2022); learning evaluation (Darmawiguna et al. 2021; Setiawan et al. 2022); application review (Gao et al. 2023); recommender system (Roul and Sahoo 2020); and social networks (Dogan and Kaya 2019). Some of them have already used deep learning methods (Dogan and Kaya 2019; Setiawan et al. 2022) and *transformer* (Bacco et al. 2021).

Based on previous research, some opportunities and differences will be carried out in this research, including:

- a. Previous research related to sentiment analysis of the MBKM program has focused more on the performance of the algorithm used, including precision, recall, and accuracy. Several studies that reveal the percentage of each sentiment do not discuss in more depth the opinions that appear in each sentiment group. This results in the analysis results that provide less insight into the evaluation and the MBKM program. Therefore, this study will conduct an in-depth analysis of the sentiment results by revealing the opinions of each sentiment group using automatic text summarization technology.
- b. The sentiment analysis of the MBKM program that has been carried out takes data from social media in general, so that sentiment can come from anywhere, be it academics, practitioners, parents, or even the general public. In addition, the sentiment towards the MBKM program that was analyzed was the MBKM program in general. In this study, sentiment data

specifically is the MBKM program implemented in the PTKI environment. Therefore, data was taken from the social media of academics in the PTKI environment. Not only keywords but hashtags and mentions come from academics and institutions in the PTKI environment.

- c. The sentiment analysis of the MBKM program conducted in this study was not only in one time period or combining all data obtained from social media related to the MBKM program like previous studies. However, this study grouped the text data obtained based on the time span starting from 2020 (when the MBKM program was first initiated) to 2023 (during the MBKM program was running at PTKI). This technique is expected to find deeper insights into the similarities, differences, and changes in opinion from year to year regarding the implementation of the MBKM program in the PTKI environment. So that it can provide evaluation results and recommendations on the quality of education with a detailed and targeted MBKM program.

All previous studies that conducted sentiment analysis on the MBKM program used classical machine learning methods or algorithms such as Naïve Bayes, Support Vector Machine, Particle Swarm Optimization, K-Nearest Neighbor, and Decision Tree. This study will use the transformer method, which is a development of deep learning. The choice of the transformer method is because currently, this method has the best performance compared to other NLP methods. It is hoped that this study can contribute to the development of the transformer method for NLP by combining sentiment analysis and text summarization techniques.

## RESEARCH METHODS

This study uses the stages in the SKKNI Data Science method to produce an analysis of changes in sentiment for the MBKM program, starting from business understanding, data understanding, data preparation, modeling, and model evaluation. This study did not deploy software. However, it adds further analysis related to changes in opinion from each sentiment each year since the MBKM program was launched. At the stage of recognizing this business, several activities were carried out to identify problems in building an automatic summary model and sentiment towards the MBKM program in the PTKI environment, including: 1. Understanding the form of MBKM implementation applied in the PTKI environment of the Ministry of Religion, such as the addition of a program, namely the Religious Moderation program. 2. Collecting various viral issues discussed related to the MBKM program, starting from the announcement of the program to its implementation in the PTKI environment.

At the data understanding stage, the data needs to be processed, reviewed, and collected. The data source in this study is the social media Twitter (X). The data collection process requires keywords, hashtags, or viral mentions related to the MBKM program in the PTKI environment during 2020 to 2023. For example, academics are already familiar with the abbreviation MBKM, so searching for data on Twitter is sufficient using the abbreviation MBKM only. Some keywords that can be used include “*mbkm kemenag*”, “*mbkm uin*”, “*mbkm iain*”, “*mbkm stain*”, “*mbkm iahn*”, “*mbkm ptki*”, “*mbkm moderasi*”, “*kampus merdeka uin*”, “*kampus merdeka ptki*”, “*kampus merdeka kemenag*”, and so on. Furthermore, the data is grouped by year.

This study collected 2,416 tweets (2020-2023) related to MBKM in PTKI, filtering 609 relevant tweets. Sentiment analysis was conducted using BERT-based NLP models, classifying sentiments into positive and negative categories. Text summarization was applied using automatic abstractive summarization to extract key themes from academic discussions. Finally, policy evaluation was performed by analyzing sentiment trends to assess MBKM's effectiveness and challenges.

The process in the intermediate data preparation activity is to conduct a review and pre-process of text data. Pre-processing of text data is very important to do because, at this stage, the

data is prepared, cleaned, and selected based on the needs to maintain the quality of the input data (Maylawati, Aulawi, and Ramdhani 2019; Vijayarani, Ilamathi, and Nithya 2015). Next, the modeling activity is to build a transformer model to produce an automatic summary of the academic community sentiment group in the PTKI environment related to the MBKM program. Model development is carried out with two main processes, namely pre-training and fine-tuning.

This research uses the Transformers method, which is an artificial intelligence method based on neural networks that uses an encoder-decoder structure connected to an attention layer in its architecture (Vaswani et al. 2017). The Transformers model simplifies recurrent neural network and convolutional neural network models by replacing recurrent and convolution layers with an attention mechanism. Figure 9 shows the architecture of the transformer model. Transformers method has been continuously developed since the original transformer (Vaswani et al. 2017), *Bidirectional Encoder Representations from Transformers* (BERT) (Devlin et al. 2018), *Text-to-Text Transfer Transformer* (T5) (Raffel et al. 2020), *Generative Pre-trained Transformer* (GPT)-1 (Yenduri et al. 2023), GPT-2, GPT-3, GPT4, *Robustly Optimized* (Thoppilan et al. 2022) *Pretraining Approach* (RoBERTa) (Liu et al. 2019), *Language Models for Dialog Applications* (LaMDA) (Thoppilan et al. 2022), dan *Transformer XL* (Dai et al. 2019). Transformer models have proven to have excellent performance for various NLP techniques or tasks, such as chatbots, automatic text summarization, sentiment analysis, spelling correction, search engines, and others. Here are some algorithms that use the basic transformer model.

Specifically, the transformer method used in this study is Bidirectional Encoder Representations from Transformers (BERT), a transformer model that uses pre-trained language representation methods for various NLP tasks (Devlin et al. 2018). BERT trains a language understanding model using a large text corpus (such as Wikipedia) and then applies the model to NLP tasks. BERT outperforms previous methods because it is a very deep, unsupervised bidirectional system for NLP pre-training. Unsupervised means BERT is trained using only a plain text corpus, which is important because a large amount of plain text data is publicly available on the web in various languages. BERT has two stages, namely pre-training and fine-tuning as shown in Figure 1.

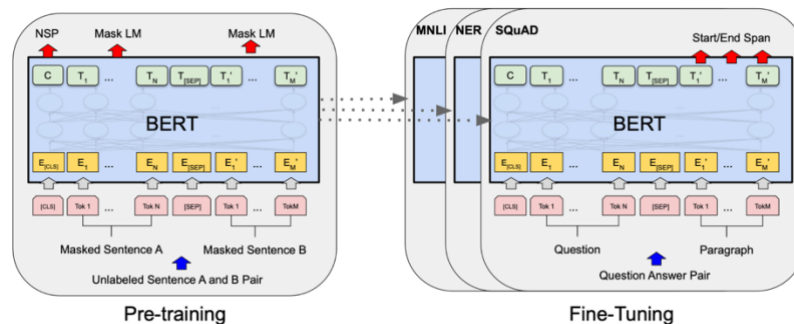


Figure 1 Contoh Pre-training dan fine-tuning pada model BERT untuk Question Answering System (Devlin et al. 2018)

Pre-training aims to train the BERT model that does not yet have knowledge of a particular NLP task. There is a self-attention mechanism in the pre-training process that is used to learn word representations that can capture relationships between words in a sentence. Meanwhile, Fine-Tuning is the process of adjusting the trained model to a particular task. In this process, self-attention is used to adapt the word representations that have been learned in the pre-training process, which are supplemented with the model's knowledge of a particular task. In the pre-training process, there are two processes, Masked Language Model (MLM) and Next Sentence Prediction (NSP), which are important for understanding the context of words in a sentence. BERT has been proven to be able to represent words by paying attention to the two-way context, which

has an impact on the meaning and context of words in a sentence being well maintained. However, it does require large computation and data quantity in the pre-training process. In its development, BERT has various variants, including DistilBERT (Sanh et al., 2019), Robustly Optimized Pretraining Approach (RoBERTa) (Liu et al., 2019), ALBERT (Lan et al., 2019). This research uses the base model of BERT with default hyperparameter settings to analyze the sentiment and produce abstractive summarization.

## RESULT AND DISCUSSION

### Data Characteristics and Needs

The data for this analysis was taken from the Twitter/X platform throughout 2020 to 2023. The tweets collected were tweets relevant to the Merdeka Belajar Kampus Merdeka (MBKM) program, using keywords related to the program. From a total of 2,416 tweets collected, a data cleaning process was carried out, which included deleting tweets that were not relevant to the research, resulting in a final dataset of 609 tweets. This cleaning process ensures that only tweets that are truly relevant to the topic being analyzed are included. The data that has been taken and cleaned is then stored in CSV format, which facilitates further processing and analysis. The CSV format was chosen because it allows data to be stored in an organized structure and is compatible with various data analysis tools, thus facilitating the process of extracting information and determining sentiment.

Data was collected from the Twitter/X platform using the Tweet-harvest tool by filtering using keywords relevant to the research to ensure that the data obtained is directly related to the Merdeka Belajar Kampus Merdeka (MBKM) program. Before sentiment analysis is carried out, the data must go through a preprocessing stage, which aims to increase the accuracy of the analysis. This preprocessing process includes several important steps, including: remove the retweet attribute by removing 'RT', remove the mentioned account to remove the mention attribute, remove hashtags, remove emojis, remove URLs, remove all punctuation, and change all words to lowercase (case folding).

These steps ensure that the data used is clean and consistent so that sentiment analysis can provide more accurate and relevant results. This cleaning process is very important to reduce noise in the data and facilitate better information extraction from the collected tweets. Table 1 shows an example of the results of cleaning tweet data before being used in the sentiment model-building process.

**Table 1 Tweet Data Cleaning Example**

Activity/Result	Condition
Tweet	<p><i>Kunjungan Dosen Universitas Islam Negeri (UIN) Ar-Raniry Banda Aceh dalam rangka melakukan kerjasama terkait Merdeka Belajar Kampus Merdeka (MBKM) dengan BPBAP Ujung Batee. #KKPThrive #KKPGOID #MenteriKKP #saktiwahyutrenggono <a href="https://t.co/A7mk7jpPdq">https://t.co/A7mk7jpPdq</a></i></p> <p>(Visit of Lecturers of the State Islamic University (UIN) Ar-Raniry Banda Aceh in order to collaborate on the Independent Learning Independent Campus (MBKM) with BPBAP Ujung Batee. #KKPThrive #KKPGOID #Minister of Marine Affairs and Fisheries #saktiwahyutrenggono <a href="https://t.co/A7mk7jpPdq">https://t.co/A7mk7jpPdq</a>)</p>
Delete Retweets	<p>Kunjungan Dosen Universitas Islam Negeri (UIN) Ar-Raniry Banda Aceh dalam rangka melakukan kerjasama terkait Merdeka Belajar Kampus Merdeka (MBKM) dengan BPBAP Ujung Batee. #KKPThrive #KKPGOID #MenteriKKP #saktiwahyutrenggono <a href="https://t.co/A7mk7jpPdq">https://t.co/A7mk7jpPdq</a></p>

Activity/Result	Condition
Delete Mention	Kunjungan Dosen Universitas Islam Negeri (UIN) Ar-Raniry Banda Aceh dalam rangka melakukan kerjasama terkait Merdeka Belajar Kampus Merdeka (MBKM) dengan BPBAP Ujung Batee. #KKPThrive #KKPGOID #MenteriKKP #saktiwahyutrenggono <a href="https://t.co/A7mk7jpPdq">https://t.co/A7mk7jpPdq</a>
Delete Hashtag	Kunjungan Dosen Universitas Islam Negeri (UIN) Ar-Raniry Banda Aceh dalam rangka melakukan kerjasama terkait Merdeka Belajar Kampus Merdeka (MBKM) dengan BPBAP Ujung Batee. <a href="https://t.co/A7mk7jpPdq">https://t.co/A7mk7jpPdq</a>
Delete Emoji	Kunjungan Dosen Universitas Islam Negeri (UIN) Ar-Raniry Banda Aceh dalam rangka melakukan kerjasama terkait Merdeka Belajar Kampus Merdeka (MBKM) dengan BPBAP Ujung Batee. <a href="https://t.co/A7mk7jpPdq">https://t.co/A7mk7jpPdq</a>
Delete URL	Kunjungan Dosen Universitas Islam Negeri (UIN) Ar-Raniry Banda Aceh dalam rangka melakukan kerjasama terkait Merdeka Belajar Kampus Merdeka (MBKM) dengan BPBAP Ujung Batee.
Removing Punctuation	Kunjungan Dosen Universitas Islam Negeri UIN ArRaniry Banda Aceh dalam rangka melakukan kerjasama terkait Merdeka Belajar Kampus Merdeka MBKM dengan BPBAP Ujung Batee
Case Folding	kunjungan dosen universitas islam negeri uin arraniry banda aceh dalam rangka melakukan kerjasama terkait merdeka belajar kampus merdeka mbkm dengan bpbap ujung batee

**Analysis of PTKI Academic Community Sentiment towards the MBKM Program**

Of the 609 tweets analyzed, 504 tweets (around 82.76%) were categorized as positive, indicating that the majority of the academic community has a good view of the MBKM program. A total of 105 tweets (around 17.24%) were categorized as negative, indicating criticism or dissatisfaction with the program. This data provides the general perception of the academic community towards the MBKM program, making it easier to see the proportion of different sentiments.

In addition to the bar chart, wordclouds were also used to visualize the most frequently occurring words in tweets with positive and negative sentiments. Wordclouds help identify key topics or issues frequently discussed by the PTKI academic community in the context of the MBKM program. Figure 2(a) shows a wordcloud for positive sentiment, while Figure 2(b) shows a wordcloud with negative sentiment. The sentiment results show that most tweets have positive sentiment, indicating good acceptance of the MBKM program among the PTKI academic community. Although the number of negative tweets is smaller, it is still important to note because it provides insight into areas that may need improvement or special attention.



Figure 2 (a) Positive Sentiment Wordcloud, (b) Negative Sentiment Wordcloud



These findings can be used by MBKM program managers to identify and respond to issues raised in negative tweets, as well as strengthen aspects that receive positive responses. Recommendations can be made based on this analysis to improve the MBKM program, for example by conducting a more in-depth survey on aspects that receive criticism.

This sentiment analysis provides a clear picture of the PTKI academic community's perception of the MBKM program. The majority of positive sentiments indicate good acceptance, while negative sentiments provide important insights for program improvement. By utilizing these findings, program managers can take strategic steps to improve the effectiveness and acceptance of the MBKM program. An in-depth analysis of positive and negative opinions is explained using automatic text summarization techniques.

Positive sentiments can be used to strengthen aspects that receive positive responses to help increase program acceptance and success, and use positive feedback to develop and expand the program. Meanwhile, negative issues in the findings of this study can be used by MBKM program managers to identify and respond to issues raised in negative tweets. And can conduct a more in-depth survey for aspects that receive criticism to further understand the existing problems.

The results of the study show that the Merdeka Belajar Kampus Merdeka (MBKM) program was well received by the majority of the academic community, as reflected in 82.76% of the tweets analyzed having positive sentiment. This indicates that most of the academic community sees the benefits and positive potential of the program. In contrast, 17.24% of tweets showed negative sentiment, indicating criticism or dissatisfaction with some aspects of the MBKM program. The wordcloud used in this study clarifies the main topics that are often discussed in positive and negative tweets, providing insight into areas that are appreciated and those that need improvement. This insight can be used by MBKM program managers to improve communication, improve aspects that are criticized, and strengthen aspects that are appreciated, so that the program can be more effective and better received by the PTKI academic community.

### ***In-depth Positive Sentiment Analysis***

Based on sentiment findings that show that most of the opinions of the PTKI academic community towards the MBKM program are positive. Figure 3 shows the wordcloud of automatic summarization for positive sentiment. Several positive opinions are summarized through automatic text summarization as follows:

*kampus merdeka riau menyelenggarakan ujian masuk universitas merdeka mbkm dan universitas lain yang juga prokesifikasi dan pelatihnannya di hari pertama kampus, sabtu ( 16 / 6 ). belajar dan praktek memang bukan kampus mudah tapi memiliki peluang. kok kuliah itu kan salah kaprah amat banyak. dan belajar pada ums pun cukup menarik karena ada yang membeli kecamata yang tak banyak tetapi inilah perjalanan belajar di kampus merdeka dan persoalan kampus dan kampus merdeka bukan masalah yang pokok bagi semua lapisan masyarakat dan tentu saja kampus adalah stasiun belajar dan...*



Figure 3 Wordcloud Summary of Positive Sentiment

The text summary describes the various dynamics that occur in the higher education environment in Indonesia, especially in the context of the Merdeka Belajar Kampus Merdeka (MBKM) program. The MBKM program is being implemented in various universities in Indonesia, including the University of Riau and the Muhammadiyah University. This program involves the development of a new curriculum and human resource management mechanisms to open up wider learning opportunities. There are several challenges in its implementation, which indicate that despite the many opportunities, the implementation of the MBKM program in the field faces various challenges. Several campuses are still struggling with issues of coordination and adaptation to the changes required by this program.

Perceptions and acceptance of the MBKM program among the PTKI academic community vary widely. Some faculty members and lecturers show great enthusiasm and passion for learning and innovating, while others may be more skeptical or face difficulties in adjusting. Technology and innovation are important factors in supporting the implementation of the MBKM program. Technological developments in the fields of education and agriculture are mentioned as areas with many opportunities. Furthermore, there are collaborative efforts between various universities and faculties to support the MBKM program. Lecturer visits and collaboration between faculties and universities are part of the strategy to overcome challenges and take advantage of existing opportunities.

Despite the great opportunities generated by this program, the economic crisis and financial problems still pose obstacles for some universities and faculties in implementing the MBKM program. The success of the MBKM program depends greatly on the ability of universities and faculties to adapt and be flexible to changes and challenges. Regulations and policies that support the MBKM program must continue to be developed and improved to ensure effective implementation. Sharia and business faculties at certain universities are mentioned as examples in the preparation of these regulations. Overall, this text describes a complex and challenging journey in implementing the MBKM program, but also shows great potential for innovation and improvement in the higher education system in Indonesia.

### ***In-depth Negative Sentiment Analysis***

The cleaned and labeled tweet dataset was subjected to several analysis techniques, including TF-IDF vectorization, topic modeling with LDA, and text summarization using the BERT model. TF-IDF vectorization is a very effective method for converting raw text into numerical representations that can be processed by machine learning algorithms. One of the main advantages of TF-IDF is its ability to reduce the number of features while retaining the most relevant information. This not only reduces computational complexity but also ensures that only significant features are considered in the analysis. Latent Dirichlet Allocation (LDA) is a topic modeling technique that helps identify hidden patterns and structures in text. With LDA, documents can be grouped based on topics that are not directly visible. TF-IDF vectorization and topic modeling with LDA are a powerful and efficient combination in text analysis. TF-IDF ensures relevant and meaningful feature representation, while LDA identifies hidden topic structures in text data.



Figure 4 Negative Sentiment Summary Wordcloud

Negative sentiments in the results of this study need to be considered to improve the MBKM program in the PTKI environment. Figure 4 shows the wordcloud of automatic summarization results for negative sentiments. Several negative opinions are summarized through automatic text summarization as follows:

*mendengar sangkaan banyak mama tapi prakteklah yang salah. pasalnya, kendati jelas jalur kampusnya macet total justru hiiiiin. jurusan merdeka yang memiliki peluang banyak kecurangan dan persaingan sama kampus merdeka dan tak diunggulkan pihak lain padahal itu motor - jawabnya. kok bisa begitu karena peserta kuliahnya bingung belajar dan malu kuliah. karena heran, kuliah itu malah gagal...*

From the text containing negative sentiments, many students feel confused about the MBKM program. There is a lack of clarity regarding the educational path and implementation of the program, which makes them hesitate to participate in learning activities on campus. The MBKM program is said to have opportunities for cheating and unhealthy competition between students. This creates an environment that is not conducive to learning and development. In addition, some students feel pressured by this program, especially when they have to face assignments such as the Real Work Lecture (KKN), which are felt to be very burdensome to an unpleasant level. The MBKM program is also considered late in its implementation and still faces many management problems. There are also errors in organizing and handling various problems, which make students and lecturers feel dissatisfied. Some academics feel that the MBKM program reduces academic freedom, especially for those who sit in parliament or have important roles in university governance. Many students and lecturers feel that they have not fully understood and mastered the systems and practices required in the MBKM program. This raises doubts and uncertainty about the effectiveness of the program. Then, there are concerns about the stigma and negative accusations against those involved in the MBKM program. They fear being seen as damaging the campus or engaging in improper activities.

Despite the great potential of the program, many students feel that these opportunities are not fully realized. They see the opportunity for success but are often hampered by the various obstacles and problems that exist. Some students have overcome problems and achieved success through the program, but these experiences and achievements vary significantly. Not all students can experience the same benefits from the MBKM program. There is also criticism of the way the program is managed and developed. Some feel that the MBKM program still needs a lot of improvement in terms of management, supervision, and support for students. These insights show that although the MBKM program has good intentions, its implementation still faces many challenges and obstacles that need to be overcome to ensure that all students can experience the benefits equally.

### **Key Findings and Recommendations**

The results of the study found good acceptance of the MBKM program by the PTKI academic community. Most academics accept and support the MBKM program well, as evidenced by 82.76% of tweets showing positive sentiment, reflecting a positive view of the program. Many academics appreciate the learning and practice opportunities provided by the MBKM program. The positive sentiment wordcloud highlights words that reflect opportunities, innovation, and valuable learning experiences. The program is considered innovative and flexible, allowing students to explore a variety of fields of study and practical activities. Many see the program as a way to develop new skills and knowledge. The MBKM program encourages collaboration between universities, faculties, and industry, which is seen as a positive step to enrich students' learning experiences.

Findings indicate that MBKM enhances learning flexibility, as academics appreciate the opportunity for interdisciplinary studies. The policy also strengthens university-industry

collaboration, providing students with practical experience through internships and entrepreneurship programs. Furthermore, MBKM aligns with Islamic education by promoting holistic learning approaches.

Many students feel confused and less confident with the path and implementation of the MBKM program, as evidenced by 17.24% of tweets showing negative sentiment, reflecting dissatisfaction and confusion. If managed properly, this negative sentiment can be an early warning system that can develop and improve the MBKM program in the PTKI environment. Allegations of cheating and unfair competition are among the negative sentiments toward the MBKM program. The program is considered to have opportunities for cheating and creates unhealthy competition among students. This creates an environment that is not conducive to learning. This opinion arose from students who felt pressured by the burden of assignments and activities such as KKN, which were felt to be very burdensome and stressful. In addition, the program was considered late in its implementation and still faced many management problems, which hampered its effectiveness. Many students and lecturers felt that they did not fully understand the systems and practices required in the MBKM program, causing doubt and uncertainty. There were concerns about stigma and negative accusations against those involved in the program, causing fear and resistance. Although there is great potential in the program, many students felt that these opportunities were not fully realized due to various obstacles and problems.

Despite its benefits, MBKM faces policy implementation issues, with PTKI institutions struggling with unclear regulations and mismanagement. There are also equity concerns, as students struggle to access MBKM opportunities due to digital infrastructure gaps. Additionally, student stress and overload remain significant issues, as the high workload and unclear expectations create mental health challenges.

The implementation of the MBKM program at PTKI can be more effective, transparent, and able to meet the expectations and needs of the academic community while also overcoming the challenges and problems identified through sentiment analysis. Therefore, this study provides recommendations based on the findings of sentiment analysis and automatic text summarization, including:

1. There needs to be improvement in the management and implementation of MBKM in the PTKI environment. This can be done by strengthening coordination between faculties, departments, and campus management to ensure that every aspect of program implementation runs according to plan. Clear and open communication regarding the path and stages of program implementation will help reduce confusion among students and lecturers. The management team needs to be strengthened by forming a special team that focuses on the management and implementation of the MBKM program, including supervision of potential fraud and unfair competition.
2. Uniformity of understanding and support for the MBKM program in the PTKI environment needs to be maintained by holding training and workshops for students and lecturers on the systems and practices required in the MBKM program. This will help them understand the goals, methods, and benefits of the program in more depth. As well as providing mentors or supervisors who can help students in undergoing the MBKM program, providing the support and direction needed to reduce confusion and uncertainty.
3. It is also necessary to consider the burden of assignments in the MBKM program, so it is necessary to create a more flexible and realistic schedule to ensure that students can complete assignments well without feeling stressed. Then, to support students' mental health, it is necessary to provide counseling services and mental health support for students who feel stressed or pressured by the burden of the program.
4. A good monitoring system can prevent and detect fraud in the implementation of the MBKM program. This includes an anonymous reporting mechanism for students who are aware of fraudulent practices. This monitoring system includes enforcing the rules firmly and providing

appropriate sanctions for those involved in fraud. Transparency in this process will help create a more conducive learning environment.

5. The MBKM program requires the involvement and collaboration of many parties. Therefore, collaboration facilities between higher education institutions, at least among PTKI, need to encourage collaboration between universities, faculties, and industry to enrich students' learning experiences. This can include internship programs, collaborative projects, and joint seminars. Innovation in learning can be done by adopting innovative and flexible learning approaches that allow students to explore various fields of study and practical activities in accordance with the spirit of the MBKM program.

Next, responding to negative sentiment requires analysis and proactive action by using negative sentiment as an early warning system to identify areas that need improvement. Proactive action can be taken to address emerging issues before they grow larger. Receiving continuous feedback from students and lecturers regarding their experiences with the MBKM program is a good step. This will help program organizers continue to improve and develop the program according to the needs and expectations of the academic community. To align MBKM with Islamic education policy objectives, this study suggests strengthening institutional support by establishing PTKI-specific MBKM guidelines that integrate Islamic curriculum requirements and provide targeted training for faculty on Islamic pedagogy in MBKM settings. Improving access and equity is crucial, and this can be achieved by increasing MBKM scholarships for struggling students and developing hybrid learning models to bridge the digital divide. Additionally, enhancing student well-being should be prioritized by implementing student mental health programs to address academic stress and introducing flexible workload management within MBKM activities.

## **CONCLUSION**

This study highlights that while MBKM has positively transformed learning in PTKI, challenges in implementation, access, and student well-being remain. To maximize MBKM's impact, policymakers must address institutional readiness, equitable access, and curriculum integration with Islamic education values. By refining MBKM policies, Indonesia can ensure a more inclusive and effective higher education system that aligns with Islamic education's role in shaping ethical and skilled graduates.

Since the launch of this MBKM program, various responses have emerged. Universities immediately adapted to implement the MBKM program into their curriculum, including Islamic religious universities (PTKI) under the Ministry of Religion. The diverse readiness of the academic community in the PTKI environment in implementing this MBKM program needs to be evaluated continuously. Because since its launch in 2020, the Ministry of Religion has officially made guidelines for implementing MBKM at PTKI in 2022, so of course PTKI independently took the initiative to adapt to the MBKM program,

Evaluation of the MBKM program at PTKI can be seen from the response or opinion of the PTKI academic community. Therefore, this study attempts to uncover the opinions of academicians in the PTKI environment from year to year by utilizing Natural Language Processing technology, especially by combining automatic text summarization and sentiment analysis techniques. Based on the results of the study, the Merdeka Belajar Kampus Merdeka (MBKM) program was well received by most academicians, who saw it as a positive step for innovation and educational development. However, its implementation still faces various challenges, including confusion, poor management, and pressure felt by students. To increase the effectiveness of the program, efforts need to be made to address these issues, clarify pathways and practices, and ensure that all students can benefit from the program equally. This research also uses Twitter/X only to collect opinion data,

so future research can use other social media such as Facebook, Instagram, TikTok, Youtube, and so on.

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