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Indonesian Public Response to School Reopening During Pandemic: Capturing Sentiment and Emotion Using X Data

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ABSTRACT

The COVID-19 pandemic caused global disruption for education delivery. To prevent adverse effects on student education, authorities instructed education institutions to implement virtual learning. For a developing country like Indonesia, inadequate knowledge and skills in utilizing e-learning applications, unstable networks, and a lack of virtual learning facilities were the biggest concerns in conducting virtual learning. This led *school reopening* to be a topic hotly discussed on public platforms when the plan was first introduced by the Indonesian government at the end of 2021. Uncertainty surrounding the implementation of school reopening, concerns about the risk of being infected by COVID-19, and concerns about the effects of learning loss on students increased the opinion polarization among the Indonesian public at the time. This study examines public opinion on school reopening during the pandemic and identifies Indonesian public sentiment and emotions toward the issue. A supervised machine learning approach was utilized to mine X (formerly known as Twitter) data that reflected the public opinion toward implementing face-to-face learning during the COVID-19 pandemic in Indonesia. Sentiment analysis on X for six months (September 2021–January 2022) revealed that the negative opinions (n=23,830) were prominent, far more than the positive (n=14,507) and neutral (n=5,413) opinions. Emotion analysis revealed that most of the public felt *joy* about school reopening. This study highlights some learnings from the pandemic for future crisis preparedness. Through sentiment analysis, mixed reactions toward school reopening were observed. This provides an understanding of public emotions that governments should listen to and act on to build trust.

Keywords: *COVID-19, school reopening, sentiment analysis, emotion analysis, machine learning.*

INTRODUCTION

The urgency of the COVID-19 pandemic may have waned, but the important learnings from this global pandemic must not be ignored. The pandemic emerged as a worldwide crisis affecting the global population's health and significantly disrupted education delivery. Specifically, schools were forced to close, and students had to adapt to e-learning delivery. Statistics show that 28 out of 29 countries had to implement school closures at the primary level of education throughout 2020 (OECD, 2021), and over 1.5 billion students were sent home due to school closures (Barrot et al., 2021). In preventing the potentially worse effect on student education, authorities instructed all education institutions to implement virtual learning. However, virtual learning is an approach with poor inclusivity for underprivileged

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groups. In Africa, many children received no education and had no access to online learning (Human Rights Watch, 2020), and approximately 37 million students, particularly in the eastern and southern parts of the region, were estimated to drop out of school (UNICEF, 2021a). A study also reported that schools were closed for almost a year, affecting more than 168 million students globally (UNICEF, 2021b).

Although many are still sceptical about the effectiveness of school closure due to the lack of empirical evidence (Litvinova et al., 2019), this measure has been considered the most impactful intervention to mitigate the spread of the COVID-19 virus among student populations. The decision to implement school closure during the pandemic was likely based on the evidence that the approach reduced influenza case rates during the past influenza outbreak (Esposito & Principi, 2020). Studies have reported the role of school closure in delaying pandemic peaks (De Luca et al., 2018) and reducing the attack rate of the virus (Nafisah et al., 2018). In Europe, countries that implemented school closure had lower new COVID-19 cases than countries that did not (Alfano, 2021). In the United States, this strategy was highly associated with a significant decline in new COVID-19 cases and mortality (Auger et al., 2020). In addition, a cross-country study involving Argentina, Italy, and South Korean populations showed the effectiveness of school closure in reducing the mortality rate, especially when enacted early on (Neidhöfer & Neidhöfer, 2020).

Nevertheless, the implementation of both school closure and virtual learning has led to many severe problems, such as mental health issues (Amran & Jamaludin, 2021; Chen et al., 2021; Hawrilenko et al., 2021; Lee, 2020), learning disruption (Rana et al., 2020), and a decrease in academic performance (Hammerstein et al., 2021) as they prevent students from attaining essential skills for learning (Hairol et al., 2023). Chaabane et al., through their review study, summarized that prolonged school closure and a decrease in daily physical activity not only led students to experience mental health issues such as loneliness, anxiety, sadness, stress, frustration, and hyperactivity but also contributed to the prevalence of physical health issues like the increase of body mass index and childhood obesity (Chaabane et al., 2021). A study by Engzell et al. (2021) provided strong evidence that students were learning less and only made little or even no progress during the pandemic compared to typical years, wherein another study was associated with a lower learning outcome (Schult & Lindner, 2021). School closure was also a significant challenge for schoolteachers and parents. A lack of resources and institutional preparedness for the transition into distance learning were potential contributors to the workload increase among teachers during the pandemic (Prado-Gascó et al., 2020). Among parents, parenting stress and anxiety increased significantly compared to before COVID-19-related restrictions and school closures were implemented (Kurata et al., 2021).

Along with the extensive distribution of vaccines and the decrease in daily COVID-19 cases, schools worldwide were reopened in stages by following the guidelines outlined by UNESCO (UNESCO, 2020). Although there was evidence suggesting that schools may reopen with proper precautionary measures (Lee et al., 2020), the decision led to a notable increase in COVID-19 cases in many countries such as the United States (Ertem et al., 2021; Tatapudi & Das, 2021) and the United Kingdom (Keeling et al., 2021), and was predicted to increase symptomatic illness among high school, middle school, and primary school teachers (Head et al., 2020). School reopening policies are critical components that need serious consideration by policymakers to manage the emotional and educational consequences of the pandemic on

child development (Keeling et al., 2021). In some cases, several countries were urged to resume face-to-face learning despite the spike in COVID-19 cases, among them Indonesia.

The implementation of school reopening has garnered mixed reactions from the Indonesian public. Those who supported this idea believed that school reopening would be a practical move to rekindle children's interest in studying and improve their education. Those against it were worried about the risk of infection as at the time, precautionary measures were not adequately implemented at schools and the vaccination coverage for children was still low (Yulisman, 2021). The voicing of opinions is a collective behaviour and a way for the public to exercise their freedom of speech. Therefore, the objective of this study is to employ a machine learning approach to mine the Indonesian public sentiment and emotions toward school reopening and face-to-face schooling during the COVID-19 pandemic. Trends in Indonesian public opinion and recommendations on future actions for policymakers will be further discussed.

RESEARCH BACKGROUND

Considering the educational loss incurred from almost 18 months of school closure, such as the risk of dropping out, learning achievements gap, and psychosocial pressure among students (Nugroho et al., 2020), UNICEF recommended that the Indonesian government reopen schools as soon as possible (UNICEF, 2021c). At the time, the advice did not meet the conditions recommended by the Indonesian Pediatric Association, which was to wait until the local infection rate reached below 5% before reopening school (Juliansen et al., 2021). The implementation of school reopening was initially planned to commence in July 2021 (Onde et al., 2021). However, the plan could not be realized due to the second wave of the pandemic, which saw Indonesia's highest infection rate during July-September 2021, with a peak of 56,757 positive cases on July 15 (Worldmeter, 2022). School reopening was then delayed and only enforced in early September 2021. The policy became a significant source of public debate as many viewed it as an unwise decision. A prior study proved the unpreparedness of Indonesian school populations in implementing school reopening (Murad et al., 2020). Many felt that the premature reopening of schools reflected that the authorities prioritized economic recovery over societal health and well-being (Sparrow et al., 2020) without considering health facility and human resource preparedness, funding, and strategic communication for school reopening (Kristiyanto et al., 2020).

Additionally, teaching during the pandemic has also negatively affected teacher pedagogic, social, and personal competence (Riris et al., 2021; Karuppiah & Awang, 2023), causing them to experience occupational exhaustion and a decrease in performance (Hussin et al., 2022). A recent study reported that many Indonesian teachers were concerned about face-to-face teaching during the COVID-19 pandemic. Many of them preferred to conduct blended teaching or even to continue teaching fully online due to the perceived risk of infection (Amri et al., 2021). A study also found that most Indonesian students in the eastern part of the country faced several barriers with virtual learning, but at the same time were not ready for school reopening due to difficulties in implementing COVID-19 preventive measures and limitations in following face-to-face learning precautions at school (Yulisman, 2021).

As one of the largest democratic countries, it is common for Indonesians to express their opinion freely and mass gatherings demonstrate the people's power. This is a way for the public to hold the government accountable for their decisions and actions. A recent mass

demonstration held during COVID-19 in Indonesia was an example of public determination to voice their concerns despite the government's lockdown order. This defiance shows that the public is not hesitant to take action when their voice is not heard (Sidhu & Wang, 2020). This occurrence demonstrates the importance of listening to and addressing public needs during times of crisis. Analysing public sentiment can be an effective social listening tool to assess public opinion and devise strategies to manage crises. This approach was proven effective in facilitating a quick and accurate decision-making process for the Jordanian government in handling the COVID-19 (Obiedat et al., 2021).

Analysis of public opinion on face-to-face learning in Indonesia has been examined by several researchers. Utilizing X data ranging from March 2020 to July 2021, Harvian (2022) attempted to classify public opinion on face-to-face schooling and found that the Indonesian public's sentiment was likely to be negative rather than positive. In contrast, Kanugrahan and Wicaksono (2021) reported that the opinion toward school reopening mined from May until June 2021 was positive. However, both studies were conducted before school reopening was actively implemented. Thus, this study will attempt to fill the gap by mining public opinion toward school reopening and face-to-face schooling starting from the policy implementation in early September 2021 until January 2022.

The findings of this study are expected to provide a reference for policymakers in Indonesia regarding the polarization of public opinion on the reopening of schools during the pandemic. Opinions voiced on X show the concerns and expectations of the public, including school populations. Consideration of these voices is essential to promote inclusivity in the policy-making process. Furthermore, understanding public opinion on school reopening will help policymakers strategize ahead to ensure that the quality of education and its delivery is not disrupted in emergencies such as a pandemic.

METHODOLOGY

Research Design

This study utilized a supervised machine learning approach to mine X (formerly known as Twitter) data that reflected public opinion toward implementing face-to-face learning during the COVID-19 pandemic in Indonesia. The data was collected using the Twitter application programming interface (API) developed by Perl Programming Language; Net::Twitter. X was chosen as the data source of this study, considering its reputation as the most popular microblogging provider widely used as a vital source of social media research in the academic and industrial sectors to determine public opinion on various issues (Asare et al., 2021). Previous studies acknowledge the platform as a data source to examine public sentiment toward COVID-19-related topics such as lockdown and restriction measures (Afroz et al., 2021; Chandra & Krishna, 2021; Gupta et al., 2021; Tri Sakti et al., 2021), online education in the pandemic (Ali, 2021; Almurtadha & Ghaleb, 2021; Bhagat et al., 2021), and COVID-19 vaccination (Alam et al., 2021; Aygun et al., 2021; Yousefinaghani et al., 2021). Based on these studies, X data was chosen as the unit of analysis for this study.

Data Crawling

The timespan of the study was set from September 1, 2021 until January 31, 2022. This time frame was chosen based on the Indonesian national government's decision to reopen schools at 50% capacity beginning early September 2021. The plan to reopen schools to 100% capacity was introduced in the second week of January 2022. Two keywords, namely *sekolah tatap*

muka (face-to-face school) and *sekolah offline* (offline school) (Kanugrahan & Wicaksono, 2021), were set to retrieve X posts related to school reopening. The keywords were chosen as both were the terms popularly used by the Indonesian public to describe physical learning.

Data Preprocessing

The data preprocessing phase involved several stages; duplication removal, text normalization, tokenization, stop-word removal, and stemming. In the duplication removal stage, it was decided that only original posts and replies which contained the predefined keywords would be included in the analysis. Therefore, all reposts were excluded. Subsequently, the posts retrieved were normalized by removing usernames, URLs, stop words, and all nonalphanumeric characters. All typos and the multiple occurrences of a letter within a word were corrected and standardized (e.g., "GREAAAAT" to "GREAT"). The text sentences were then tokenized into smaller units before the stemming. The stemming process was done to standardize the words into their base form by removing the affixes (e.g., the stem of words learning, learned, and learnt is learn). The Naïve Bayes classifier was chosen as the algorithm to classify the sentiment into three categories: negative (0), positive (1), and neutral (2). A large number of tokenized words were included in a training data set and trained using a k-fold cross-validation procedure to ensure the accuracy of the sentiment. A web-based annotating system that allows admin interventions to redefine the sentiment label was developed to improve the accuracy of the labelling. At this stage, the inter-annotator agreement approach involving three annotators was employed in the review process. In addition, a dictionary-based emotion analysis was also conducted by utilizing the regular expression feature on the Pearl software. The emotion category was derived from the basic emotion framework (Plutchik, 2001), including joy, trust, fear, surprise, sadness, disgust, anger, and anticipation. Finally, visual presentation of the data was created utilizing the Power BI desktop.

RESULTS AND DISCUSSION

Data Demography

The text mining on X retrieved a total of 43,750 posts from Indonesian users that mentioned the keywords (*sekolah tatap muka* & *sekolah offline*) from September 1, 2021 until January 31, 2022. The highest number of mentions was found in September (20,963/43,750, 48%), followed by October (10,550/43,750, 24.1%), January 2022 (5,395/43,750, 12.5%), November (3,761/43,750, 8.6%) and December (3,081/43,750, 7%). The X data frequency for each month is presented in Figure 1.

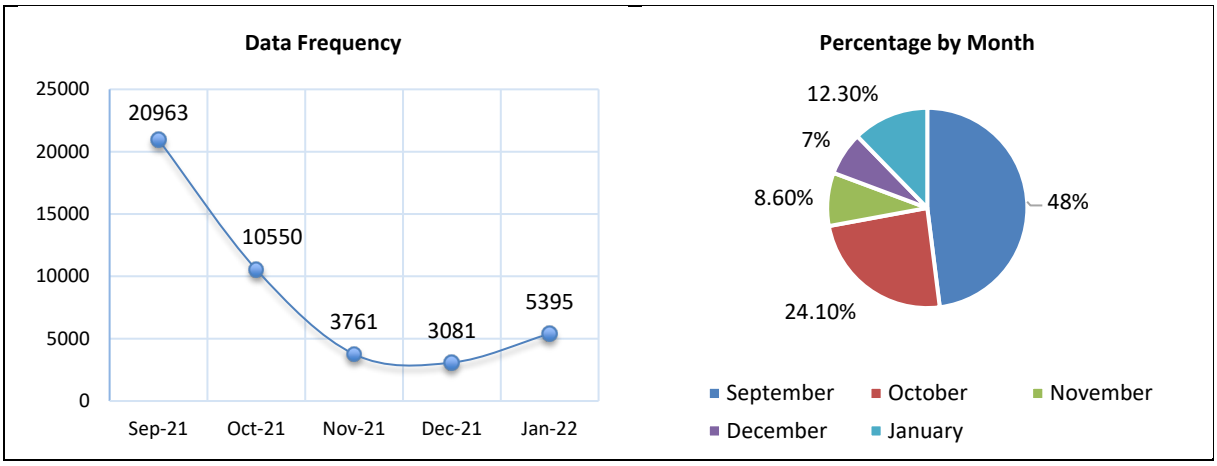
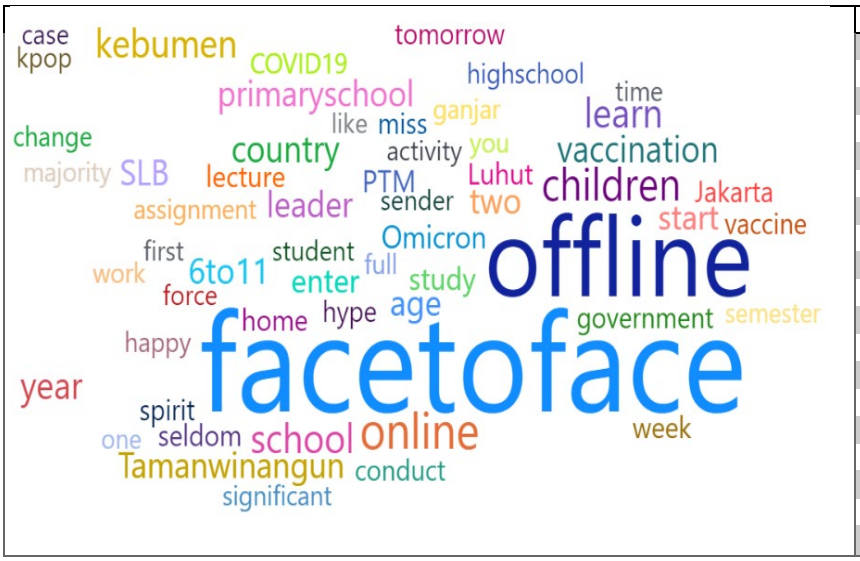


Figure 1: X data frequency per month

The number of social media posts that contained school reopening issues, as expected, was high and reached its peak in September 2021, as the authorities first began implementing the regulation from that month. The discussion revolved around two major ideas; implementing offline/in-person schooling or keeping schools closed and maintaining the remote learning method. At the time, the WHO and UNICEF had urged the Indonesian government to reopen schools immediately after the 18-month closure to prevent the potential latent effect of school closure on learning lag. In doing this, the Indonesian health authorities considered factors such as the low COVID-19 infection rate of children (which was recommended to be lower than 5%), strengthening school preparedness in implementing the 3T protocol (tracing, testing, and treatment), and studying how other countries implemented school reopening measures. The decision was made to reopen all schools from pre-school until high school level in zones where the infection rate was low and the distribution of the first dose of COVID-19 vaccine was at or above 50%. Henceforth, various public opinions on the school reopening instruction dominated the conversation trend on social media, particularly on X. The word cloud presented in Figure 2 maps the words most used by the public when discussing face-to-face learning.



Word	Count
facetoface	373
offline	281
online	82
children	66
school	54
learning	53
kebumen	47
year	43
vaccination	40
country	39
6to11	37
age	37
two	37
leader	36
primaryschool	36
SLB	36
tamanwimangun	36
start	34
enter	29

Figure 2: X data frequency per month

The five most used words were face-to-face (n=373 words), offline (n=281 words), online (n=82 words), children (n=66 words), and school (n=54 words). The conversation trend represented by the above word cloud highlights the transformation in education delivery from virtual to physical learning. To understand the topics that became the epicentre of discussion during the timeframe, social media posts with the most engagement among Indonesian users were extracted.

Table 1: Most engaging posts

User	Post	Followers	Reposted	Liked
@AREAJULID	WDYT? How is it, guys? The offline school will be cancelled again 🙂 🙂 https://t.co/3bN9nakBgb **13/Sep/2021 19:54 WIT**	1,204,201	2091	♥ 29,635
@JeromePolin	How's the face-to-face school? Hahaha **4/Jan/2022 11:31 WIT**	1,668,785	218	♥ 13,756
@GoogleForEdu	Whether inside or outside the house, connected or not, studying can be anywhere with offline mode by #Chromebook. #GoogleEdu #SchoolWithGoogle 💡 **29/Nov/2021 15:59 WIT**	728,625	878	♥ 8,041
@schfess	Sch! The reason why I am worried about the offline school A thread https://t.co/hCm2aYD5sL **2/Jan/2022 20:10 WIT**	404,901	270	♥ 7,938
@jokowi	hospitals are no longer crowded with covid-19 patients, self-isolation centres are starting to loosen up, houses of worship and tourism destinations are starting to open, and schools have started face-to-face learning. Stay alert and never let your guard down because Covid-19 is still around us. https://t.co/X4DIvmE2ue **27/Sep/2021 14:14 WIT**	16,145,761	968	♥ 6,412
@kristoimmanuel	The zoom-schooling habit is carried away when entering offline school 😓 https://t.co/mFMKjgRRnx **14/Oct/2021 13:11 WIT**	419,744	1250	♥ 4,742
@olietamami	It will be great if the class is offline. You can hang out at the library until night, and you just need to cross the road to return to the hostel. Azerbaijan is a safe country, and cameras are everywhere. Crime is rare here. Religion is not taught in schools, and parents are responsible for teaching it at home. They know more about manners https://t.co/r5PH8jRBT4 **7/Oct/2021 01:33 WIT**	8,857	644	♥ 4,199
@tubirfess	2beer! Call all medical students and health workers, and everyone gives your opinion bout this. Do you think it is possible to conduct an offline school? if yes, are there any reasons to support the implementation of the offline learning system in this kind of situation? (cont) https://t.co/KnPF8LKYoq **2/Jan/2022 18:05 WIT**	673,225	332	♥ 4,033
@txtdaripelajar	face-to-face school https://t.co/9TouVKMS7Z **6/Oct/2021 15:27 WIT**	433,446	269	♥ 2317

In September 2021, the Indonesian public was highly engaged with posts that fully supported face-to-face learning. A post by @AREAJULID (reposted 2091 times) drew public attention by addressing worries about the possibility of the government reclosing schools due to a sharp increase of COVID-19 cases caused by the reopening. A school cluster where 54 students tested positive was identified at a school in Jakarta at the time. By the end of September 2021, a total of 2.8% of the whole school population had contracted COVID-19. However, the Indonesian Ministry of Education and Culture clarified that the 2.8% population was not only from schools implementing face-to-face learning but also included those that

were still conducting virtual learning since July 2020 (Chaterine, 2021). The safety of school reopening was reassured through President Jokowi's post (reposted 968 times), which mentioned that the country was in a much better position in handling the pandemic. Both posts mentioned above were of the opinion that reopening schools was the right decision despite the many debates questioning the urgency of face-to-face schooling.

The school reopening narratives shifted slightly in January 2022. Several high-engagement posts identified during the month warned the public about the potential adverse effects of school reopening on student mental health and public health. @schfess, through a thread post (reposted 270 times) on January 2, garnered attention after raising concerns on burnout, exhaustion, anxiety, and bullying among new students in face-to-face learning. Another post from @tubirfess (reposted 332 times) questioned the reason behind continuing face-to-face schooling while Omicron cases increased significantly. However, although Omicron cases had reached a thousand by the end of January, the education authorities neither stopped physical activity at schools nor added any specific measures in response, as the main source of the Omicron infection was dominantly from international travel. Both posts suggested a possibility of a shift in public preferences, from supporting to doubting the need to reopen schools.

Public Sentiment Toward Face-to-Face Learning

Sentiment analysis on X for six months (September 2021–January 2022) revealed that negative sentiment (n=23,830) was prominent, far more than positive (n=14,507) and neutral (n=5,413) sentiments. Figure 3 below presents the distribution of public sentiment per week's study period.

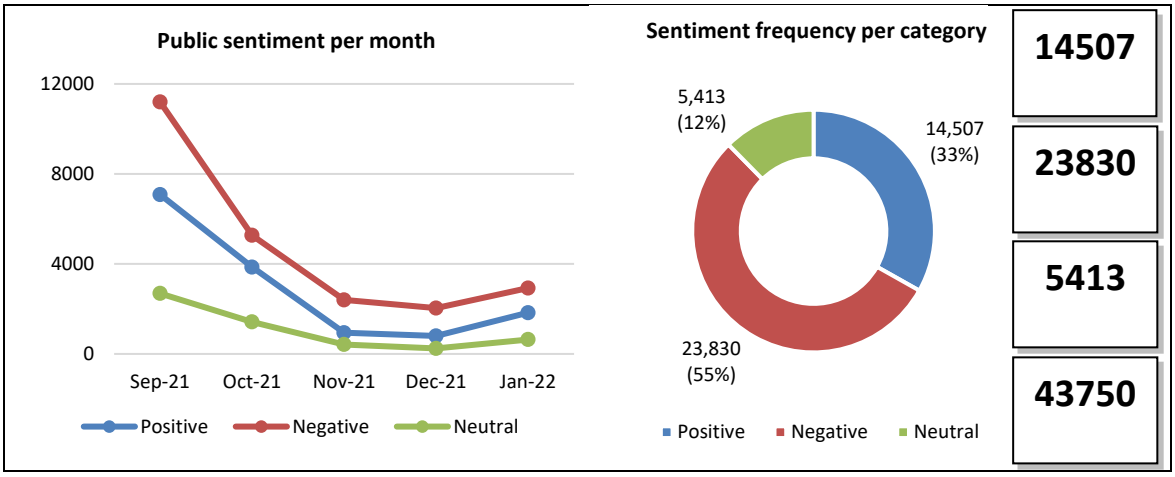


Figure 3: Distribution of sentiment

Negative sentiment dominated over positive and neutral sentiments almost weekly, especially during the first month of school reopening. The circulation of negative opinions was identified to reach a peak in the second and fourth week of September 2021. During the first and second week of the month, most negative opinions were related to the government's sudden decision to reopen schools, scepticism on school preparedness to conduct face-to-face teaching and learning, as well as parent and student preparedness for school to be fully conducted in a physical setting. Student opinions on physical school experiences were mostly found during the third and fourth week of September. Even so, the opinions circulating within

the month revealed that most of the public was concerned about the education authorities' ability to ensure that school premises were safe and ready for face-to-face teaching and learning.

Another significant gap between negative and other sentiments was found in the third week of November 2021 following a spike of positive COVID-19 cases on school premises. It was reported that among the 490,000 schools that were allowed to reopen, only 59.9% of them stated readiness to conduct teaching and learning in a physical setting, causing more than 800 students and 50 teachers to be infected as of that week (Iswinarno & Hutasuhut, 2021). All schools in Depok city, West Java, were forced to reclose and revert to distance learning due to a notable increase of school clusters in the town (Purnama, 2021). Although many parties, including the Indonesian Pediatric Association, proposed school reopening as a strategic move to optimize learning outcomes, the situation showed that many schools were unable to implement consistent COVID-19 prevention measures as suggested by the education authorities.

A notable increase in negative sentiment was also detected in January 2022, especially in the second week of the month. This was due to the government's plan to lift the 50% restriction on school capacity in face-to-face learning beginning January 10, 2022. The decision was made considering that all provinces in Indonesia were no longer in Community Activities Restrictions Enforcement (CARE) level 4. However, this regulation was considered risky as the COVID-19 vaccine distribution among students had yet to reach the desired rate. Additionally, the full reopening of schools was announced only a few days after the first Omicron variant case was detected in Jakarta. Many were worried that school reopening would cause higher local transmission of this new COVID-19 variant.

Public Emotion Toward Face-to-Face Learning

The dictionary-based emotion analysis utilizing regular expression features was conducted to collectively explore Indonesian public emotions surrounding face-to-face learning during the study period. The investigation revealed that although the overall public sentiment toward the issue was negative, the *joy* emotion (n=1527) was higher than the other emotion categories. The distribution and trend of public emotion on X are presented in Figure 4 below.

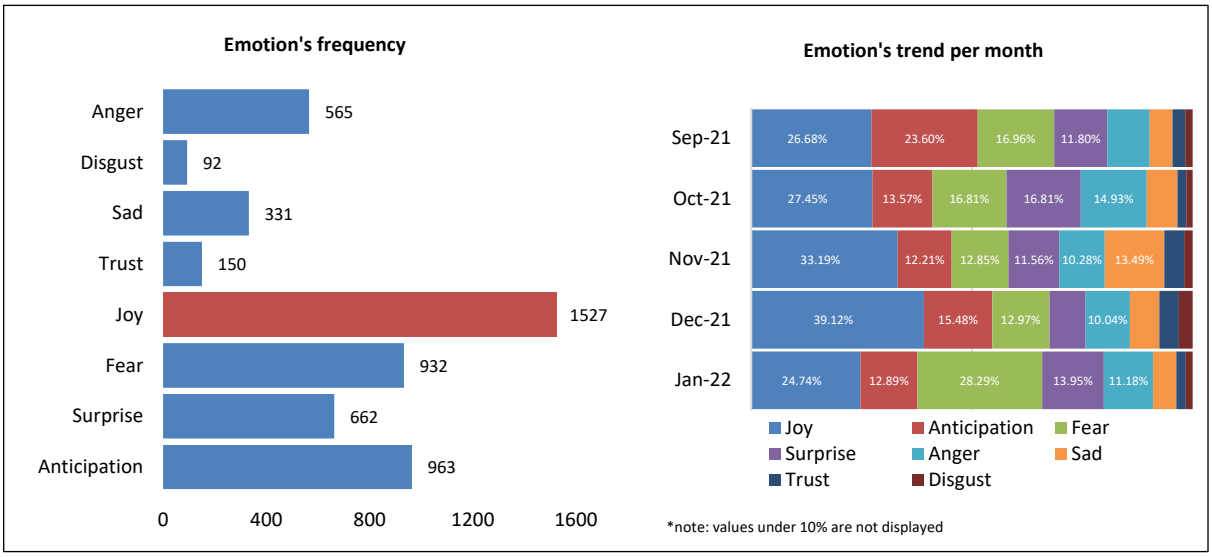


Figure 4: Emotion analysis

The contradiction in sentiment and emotion analysis suggests that face-to-face learning was received as an acceptable and fair solution in response to learning disruption despite the many negative opinions circulated in public conversations. Many posts related to *joy* highlighted face-to-face learning as an awaited event. These posts show the occurrence of *joy* as widespread within the negative concerns of the public. For example, in a post expressing fear of being infected with COVID-19, excitement to finally interact with peers and teachers physically was also conveyed. Even so, the spread of negative emotions should also be a matter of concern. The anticipation and fear emotions were still significant and relatively equal in number. The posts related to *anticipation* expressed public anxiety about the uncertainties during and after the implementation of school reopening. Although the *anticipation* emotion distribution is relatively the same across five months, this type of emotion was identified as more significant in September 2021 because the reopening policy was first implemented in that month. Posts related to *fear* were about the public's perceived risk of COVID-19 infection and other expected negative outcomes of school reopening. The distribution of *fear* was significant and surpassed the other emotion categories in January, wherein that month, the reopening of schools at 100% capacity was introduced, and the first case of the Omicron variant was detected.

The results show that while the topic of learning disruption was among the top narratives at the time, many Indonesians were apprehensive toward the government's plan to reopen schools. Negative sentiment was associated with factors such as school readiness and lack of preparedness to conduct teaching and learning in physical settings, high COVID-19 transmission rates, and low vaccine coverage among school populations. Positive sentiment was linked to perceptions that school reopening was the best remedy to learning disruption during the pandemic. Understanding public opinion is an essential step for an inclusive problem-solving process and provides deep insight into problems faced at the grassroot level. This can result in swift decision-making and effective actions that the government can take to mitigate situations and avoid negative aftereffects.

The opinion trends identified in this study reflect those of Harvian, who studied Indonesian public opinion toward face-to-face activities in the COVID-19 recovery phase on X (Harvian, 2022). Their study suggested that the Indonesian public had grown comfortable with the virtual environment and preferred activities to be conducted online rather than physically. Asare et al. corroborated that nearly half of the public sentiments (48.9%) toward online learning were positive, and at the same time, there were mixed reactions to school reopening (Asare et al., 2021). Online learning was found to be a favorable solution for the public during the pandemic despite the many problems that came with online learning (Tri Sakti et al., 2022). However, a sentiment analysis conducted before the implementation of school reopening suggested otherwise, where public support for face-to-face learning was found to be higher than willingness to continue online learning (Kanugrahan & Wicaksono, 2021). The difference in public sentiment before and after school reopening emphasizes the mix of attitudes, as is common in situations of uncertainty.

Various studies have examined school population preferences and emotions toward face-to-face learning. Those who experienced difficulties learning virtually perceived online learning as a method lacking interaction, explanation, and practical application (Gherheș et al., 2021). Interestingly, although the current study found that the majority of the Indonesian public on X felt *joy* about school reopening, a different study in Iran revealed positive emotion

toward virtual learning during the pandemic (Mirahmadizadeh et al., 2020). These studies suggest that the change in education delivery during the pandemic may not be the only factor affecting student emotions. Additionally, the findings of the present study revealed a mix of emotions in expressing their learning preferences. This may not necessarily be due to the learning experience itself but for other reasons such as to find academic support, to feel fully present and more comfortable in physical classes (Burry et al., 2020). Teachers also experienced emotional vulnerability during the pandemic (Klusmann et al., 2023). The melding of a teacher's professional and personal territories during online classes meant that they would have to play the roles of teacher and parent to their children at home.

The findings of this study provide insight for the education authority in Indonesia to understand public concerns related to changes required in education delivery during a public emergency. Sentiment analysis provides quick insight to identify problems in the community, address service gaps, and monitor the quality of program implementation. It can be an effective social listening tool for government agencies to understand the needs of their citizens, proactively identify areas of improvement and take preventive measures. This in general will improve operations, reduce costs and indirectly build accountability and public trust.

Trust in the government in handling a crisis has proven crucial to the success of a country in managing the pandemic. However, public trust toward health authorities and media during the pandemic has varied across different countries (Majid et al., 2022). A study conducted in Vietnam found a significant positive correlation between public trust in government and reliable communication during the COVID-19 pandemic (Vu, 2021). Han et al. suggest that if the public perceives the government as well organized, fair, and able to disseminate clear messages and knowledge on COVID-19, the public trust and the adoption of COVID-19 preventive measures are more likely to be higher (Han et al., 2021). Therefore, in achieving public compliance with policy, transparency in government communication is needed in disseminating accurate and comprehensive information.

Given that uncertainty is a major cause of trust issues, governments need to strategize effective communication plans to disseminate clear health instructions, remove ambiguity, and foster a sense of collective responsibility among the public. Particularly on the issue of physical schooling during the pandemic, governments should earn trust and confidence from students, teachers, and parents, before initiating any plans to reopen schools. Prior research in the United States indicated that trust in information given by the government influences public preferences for school reopening (Collins, 2023).

It is important to assure parents that safety measures are in place to ensure that children can be sent back to school with a low risk of infection. A nationwide study examining parent perceptions on school reopening in Indonesia found that only 55.7% of parents were confident about sending their children to school when schools were reopened. Their hesitancy toward school reopening was associated with several factors such as COVID-19 risk perception, children with comorbidities, the presence of vulnerable populations at home, concerns about the efficacy of COVID-19 vaccination, and the presence of COVID-19 cases and deaths in the community (Pudjiadi et al., 2022). Socioeconomic factors should also be considered, as in several studies, this factor was associated with parental knowledge about COVID-19. For instance, low household income was associated with an insufficient understanding of preventive measures, clinical symptoms, COVID-19-related information

(Juliansen et al., 2021), and poorer knowledge related to COVID-19 (Roy et al., 2022). These are some concerns that need to be addressed in planning for future crisis preparedness.

CONCLUSION

Overall, this study shows that the Indonesian public held negative sentiments (n=23,830) toward the idea of reopening schools during the pandemic. Negative emotions such as fear and anticipation were prominent. A further analysis, which attempted to match sentiment trends with notable events within the study period, found a link between the negative sentiment and emotions with several issues such as school readiness, student preparedness for the learning transition, the significant spike in COVID-19 cases at school premises, and the emergence of the Omicron variant. However, despite the high level of negative sentiment, there were many posts that expressed joy. Positive sentiments and emotions were linked to the desire for face-to-face interaction and better education delivery. School reopening was seen as a highly anticipated event for many.

Even so, this study is not without limitations. The data analysed was obtained from X during a period where uncertainty was high and public emotions were highly polarised. Over time, the public has accepted COVID-19 as part of daily life. The findings of this study are applicable to the time and context specifically mentioned. These results are expected to provide empirical evidence and reference for policymakers in understanding public needs and concerns toward reopening schools during health crises. Caution must be exercised when using this case to inform future decision-making in other crisis situations.

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