



Twitter Data Sentiment Analysis on the Economic Sector: Public Response to Government Policies During the COVID-19 Pandemic in Indonesia

Isnaini Fitria Effendi¹ Dian Arlupi Utami¹ Roro Ayu Rahmawati¹
Roni Prasetyowibowo¹ and Prasetyo Isbandono¹

¹Public Administration, Vocational Program, State University of Surabaya, Surabaya, Indonesia
isnainifitria.20014@mhs.unesa.ac.id

Abstract. The COVID-19 pandemic has had a significant negative impact on the global economy, including Indonesia. One of the sectors that have fallen is MSMEs, which was an important pillar in the Indonesian economy. Several policies have been issued by the government to empower MSMEs during the pandemic, one of which is the provision of social assistance to poor and vulnerable MSME actors. This policy has drawn public responses and opinions that have been expressed through social media. Social media can play an important role in shaping public perception. This study aims to describe public opinion and responses through the social media platform Twitter to government policies aimed at providing BLT for MSMEs. This study uses sentiment analysis and SNA, or social network analysis, methods. Data collection and analysis using Netlytic.org and Brand24 web-based applications. The results showed that as many as 82% of the public had positive sentiments, while only 18% had negative sentiments. In addition, there is also a communication network that displays the interactions of several dominant actors, as well as the most discussed topic of discussion on Twitter regarding the MSME BLT policy issued by the government during the pandemic. This research provides an opportunity for the government to use Twitter data analysis in the decision-making process and policy evaluation. Further research could increase the scope of the data and increase the timeframe for data collection. In addition, it can be combined with other methods to produce research findings that are stronger at presenting the actual community response.

Keywords: Sentiment analysis, Twitter, MSME BLT, COVID-19 pandemic

1 Introduction

In 2019, a new virus emerged, namely the coronavirus (CoV), which was first detected in Wuhan, China. This virus is better known as COVID-19. COVID-19 is an infectious disease caused by a type of coronavirus that infects the respiratory tract in humans. At the beginning of 2020, COVID-19 began to spread in various countries. So that since March 2020, the world health organization, namely the World Health Organization (WHO), has designated COVID-19 as a pandemic due to its exponential spread globally because it is not limited to one geographic area [1]. The global spread of Coronavirus 2019 (COVID-19) has infected 233 countries with 609,848,852 confirmed positive cases, and 6,507,002 people worldwide have died from COVID-19 [2]. Several other

countries are also reported to have an increasing trend of new cases, which continues to increase until its peak in 2022. Meanwhile in Indonesia, the coronavirus has spread to 34 provinces, with a total of 6,415,328 positive cases of COVID-19 and more than 157,000 people in Indonesia. Indonesia has passed away [3].

There is little question that the COVID-19 pandemic has developed into a worldwide health emergency given the pattern of positive cases. This is evidenced by the fact that, since 2020, WHO has officially declared the COVID-19 pandemic outbreak a global pandemic. The occurrence of COVID-19 pandemic not only affected the health aspect but also caused a large global economic downturn as the number of deaths increased and economic activities closed. The shift in economic attitude during the first wave of the COVID-19 pandemic was comparable to or greater than during the Great Recession of 2007–2009, as can be seen over the past few decades [4]. In early 2020, several nations started to feel the effects of the recession on their economies. Even industrialized states like Japan, South Korea, and Australia were among the states that went through this recession in addition to underdeveloped nations [5]. The recession itself is a condition in a country where the economic condition is weakening, which results in its economic growth being at a minus point [6].

International financial organizations, namely the International Monetary Fund and the World Bank, also predict that by the end of the first quarter of 2020, the global economy will enter a recession, which will be very sharp [7]. Global economic growth may decline to negative 2.8% or up to 6% of global economic growth in the previous period. The two institutions previously predicted that the global economy at the end of the first quarter of 2020 would grow at a percentage rate of 3% [8]. In Indonesia itself, the economic impact that is starting to be felt is also quite large. This indicates that Indonesia's economic growth in the second quarter was not so good and was at a minus point of -5.32% [9]. Finally, the Central Statistics Agency (BPS) declared that Indonesia was officially in a recession because the country's economic growth remained negative during the third quarter [10]. This economic downturn highlights the severity of the global economic collapse brought on by COVID-19, as do the limits on communal activities (such as stay-at-home orders, bans on public meetings, closures of businesses and educational institutions, and travel bans) [11].

The Covid-19 pandemic chain of dissemination has been slowed down by limits on communal activities, which has led to out-of-control consumption in Indonesia as well as a fall in household consumption (RT) from 5.04% to -2.63% and non-profit institution consumption. The LNPRRT for stairs dropped from 10.62% to -4.29% [12]. The purchasing power of the population significantly decreased as a result of declining household consumption. Indonesian consumers have been negatively impacted by COVID-19, but business growth has also been hindered, particularly for MSME companies. The Large-Scale Social Restrictions (PSBB) movement, which is thought to be capable of expediting the response and prevention of the increasingly widespread COVID-19 in Indonesia, restricts the movement of MSME enterprises that need showrooms or promotions [13].

According to information from the Ministry of Cooperatives and Small and Medium Enterprises Central Statistics Agency [14], Micro, Small and Medium Enterprises (MSMEs) are the primary players that control the Indonesian economy. MSMEs were

heroes or foundations of the Indonesian economy throughout the 1997–1998 economic crisis, as seen by the growth in their numbers following the crisis [15]. According to data from the Ministry of Cooperatives and SMEs, MSMEs are the most significant pillars of the Indonesian economy. As of now, there are 64.2 million MSMEs, and by 2020, they will have contributed 61.97% of the PDB or Rp. 8,500 trillion, to the country's economy [16][17]. MSMEs also have a positive impact on the Indonesian economy because they can absorb 97% of the country's workforce in 2020, the highest amount of credit in 2018 (about 1 trillion rupiahs), and up to 60.4% of all investment [16][17].

In addition to the above, the single most important indicator of a country's or region's economic progress is the growth in the number of entrepreneurs who initially started with small and medium-sized businesses before expanding to larger businesses [13]. According to Kementerian Koperasi data, the number of UMKM in Indonesia in 2019 reached 65,471 units, representing 99.99% of all businesses in Indonesia. It shows that UMKM has important leadership in overseeing Indonesia's economy. But with the presence of COVID-19, many UMKM are in a down situation.

According to Katadata Insight Center [18] there will be a significant difference in business conditions before and after the COVID-19 pandemic in 2020, with 56.8% of UMKM being in poor business situations and only 14.1% being close to being situated in a good business. In addition to that, UMKM also disseminates negative as well as positive feedback. According to research from the Katadata Insight Center [18], only 5.9% of UMKM are positive about the current situation. However, there are 82,9% of business owners that engage in negative behavior during a pandemic, compared to just 11,2% who do not. Additionally, 63.9% of these individuals experience revenue declines of at least 30%.

The COVID-19 impact not only affects the UMKM sector but also the tourism sector. The COVID-19 pandemic prevented travelers to Indonesia from experiencing a decline. As a result of COVID-19 pandemic, tourism sectors, including restaurants, hotels, and even retail, are also affected [19]. The LIPI Economic Research Center (P2E LIPI) has predicted that one of the tourism sectors that will have the most impact is the food and beverage sector by 27% and handicrafts by 17.03% Hotel profitability suffers losses of up to 40%, which has an adverse effect on operational hotels [19]. The majority of foreign visitors also have negative opinions about the prices of restaurants or eating establishments, with foreign visitors from other countries being more prevalent [20]. In addition, the retail industry is also struggling due to weak tourism growth, particularly in the areas of Jakarta, Medan, Bangka Belitung, Kepulauan Riau, Manado, and Bali [19].

Based on the current situation, the government has issued a policy in the context of empowering UMKM affected by the COVID-19 pandemic. The government has provided support incentives for UMKM through the National Economic Recovery (PEN) program in 2020, which was completed in 2021. Due to the efforts of 30 million UMKM, a total of 112,84 trillion rupiah was lost in 2020, while in 2021, 121,90 trillion rupiah was confiscated by the government [21]. A few of the issues that the government raised are as follows: (a) Providing social assistance to poor and vulnerable UMKM actors; (b) UMKM tax breaks; and (c) UMKM loan relaxation and restructuring. (d)

Expansion of financing for unconnected working capital UMKM with financing/banking institutions; and (e) Using ministries, state-owned enterprises, and local governments as buffers for UMKM products [22].

The policies that have been issued by the government, especially on social assistance for MSME actors, have received various responses from the community. There are good and positive responses, but there are also negative ones that are being noticed. The public expresses its opinions and responses through social media. Social media can play a key role in influencing public opinion. This is because social media is the digital medium that the Indonesian population uses most frequently. In terms of social media, Twitter is the only place where the general public can do so with ease when reporting opinions [23]. Numerous suggestions and responses from the Indonesian populace may provide the opportunity to explore public opinion and analyze public sentiment to change public perceptions of government actions in the UMKM sector, especially social assistance for UMKM actors. In addition to that, through the responses that are provided, the general public using Twitter can provide input to the government as a benchmark for decision-making and evaluating the effectiveness of the UMKM.

Several studies to see the public's response to using Twitter have been done before. For example, research conducted by Brian Laurensz and Eko Sedyono [24], which states that positive sentiment is the most dominating sentiment, indicates that the COVID-19 vaccination action received a positive response from the community. In addition, there is also research conducted by Annisa Ristya Rahmanti, et al [25], that shows that the majority of tweets use positive sentiment toward the issue of the "New Normal" during the COVID-19 pandemic in Indonesia related to the emotions of "trust," "anticipation," and "excitement." Both studies used Twitter social media data for analysis.

This study has the main discussion of Twitter data analysis which is to reveal how people express their opinions and responses to government policies related to social assistance for MSME actors. This study aims to describe public opinion and response through the social media platform Twitter to government policies in providing BLT for MSMEs. Thus the government can respond to the public's perceptions and sentiments appropriately to be input in the decision-making process.

2 Theoretical Study

2.1 Analysis Sentiment

Sentiment analysis, also known as opinion mining, is a branch of data mining science that is commonly used to analyze textual data in the form of polarized opinions to produce information with positive, negative, or neutral values [24]. Opinion mining can be interpreted as a process for extracting objects and components to determine whether an opinion or opinion is positive, negative, or neutral [26]. By classifying the polarity of a text [27], sentiment analysis is a technique to extract information in the form of a person's attitude toward an issue or event. Sentiment analysis is a tool or application for language processing, text analysis, and linguistic computing for the identification

and classification of public opinion on social media, which aims to determine the attitude of researchers toward the subject of a document [28].

2.2 Social Network Analysis

Social Network Analysis is a science that focuses on human relations through the utilization and use of graph theory [29]. Scott, 2012 states that Social Network Analysis (SNA) is a research method for a systems approach that visualizes invisible flows in the network by identifying the types of interactions, correlations, and roles among users in the network [30]. Social Network Analysis involves the representation of organizational relationships as a system of nodes or actors connected by appropriately classified connections, along with mathematics that defines the structural characteristics of the relationships between nodes [31]. Through network analysis, it can be describe as the role of each actor who is a member of another group called a bridge [32].

2.3 Twitter

Shaman Kumar, Fred Morstatter, and Huan Liu [33] stated that Twitter is a social networking site that leads to fast communication [32]. Twitter is a social media platform that has become an important communication medium in publications at every level of society. Twitter is a microblogging medium that provides short content features in the form of rapid comments, phrases, video links, and photos [34]. Twitter users can send and receive tweets in the form of text with no more than 140 characters. Twitter also has several users that continue to increase every year. Since its first launch in March 2006, it has grown to 500 million users and generates more than 400 million tweets per day [35].

2.4 Public Opinion in Decision Making

In Hennessy's opinion, public opinion has a role in policy making (36), public opinion that counts is a complexity of views, groups, and individuals that should be referred to as public opinion or opinions held by members of the public [36]. This opinion plays a role in decision-making in various ways and in the combination of various voices to influence the stated policy, which is the balance (equilibrium) reached in the struggle of the group at a certain time [36]. Public opinion becomes a barometer of people's aspirations and can be a force in making decisions based on the behavior and preferences of millions of citizens who have a voice [37]. Public opinion can be expressed in the mass media as an intermediary between the government and the community.

3 Method

The current study makes use of a method that is both quantitative and formally oriented. The current study collects data using a variable that is angularly scaled and is then analyzed using a robust statistical procedure [38]. This research is descriptive, where this study aims to describe a characteristic of the object. In this study, it is to describe

the opinion, response, and public attention on social media, namely on Twitter, to government policies in the economic sector, namely BLT UMKM.

3.1 Data Collection and Data Processing

This study collects Twitter data from September 25, 2022, to October 26, 2022. The data is retrieved through Brand24 and Netlytic software. Brand24 is a tool for analyzing Twitter social media that has the ability to measure hashtag performance and can follow the user and community conversations on Twitter, as well as accurately measure Tweet reach [28]. This study limits tweets to the keywords "BLT UMKM," "Bantuan UMKM," and "UMKM" starting from September 25 to October 26, 2022. The output of Brand24 consists of the total number of results from Twitter, several tweets containing words or hashtags according to keywords, estimated reach, interactions, social media shares, number of likes, and number of positive and negative mentions during a certain period [28].

In addition, data is also collected using the Netlytic.org software. Netlytic is a cloud-based social media analysis tool that is able to find popular topics and can build, visualize, and analyze online communication networks using social network analysis [39]. This research collects data through Netlytic software, which is not paid so it is limited to 1000 tweets with the hashtag #bltumkm. This data retrieval is called UGC (User Generated Content) mining [31]. Data retrieval using the keyword #bltumkm which was taken from October 1 to October 5, 2022.

3.2 Data Analysis

All tweets that have been processed are then analyzed for data. This study uses social network analysis (social network analysis) and text mining. Text mining is used to see words that often appear related to BLT and UMKM and the public's response to these words. Meanwhile, social network analysis is used to identify important or central actors in disseminating information related to MSME BLT on Twitter and other social media.

The Text Mining method used in this research is word cloud formation and sentiment analysis. Wordcloud can be interpreted as a visualization of words where the size is adjusted to the frequency with which the word appears and to see words that often appear related to a topic [40]. The software used in the processing and analyzing of the data are Brand24 and Netlytic which are used in the creation of word cloud, sentiment analysis, and Social Network Analysis (SNA). The following is the process of Brand24's mind map [28] in Figure 1. While Figure 2 is a mind map of Netlytic [31] in analyzing data from Twitter.

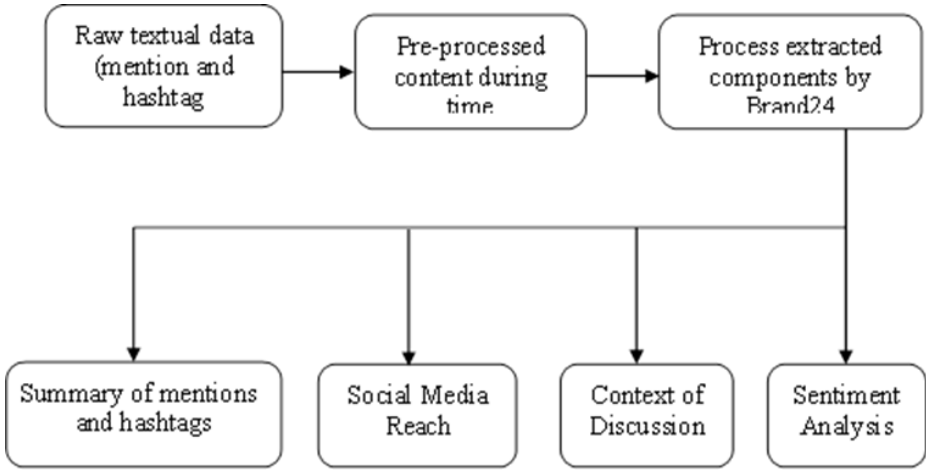


Fig. 1. Mind Map of Brand24 Analysis Process [28].

Twitter social media analysis Through Brand24, researchers only need to choose the selected keywords, called raw textual data. Based on Figure 1, the data taken by Brand24 through raw textual data are mentions and hashtags. Then the researcher determines the period of data coverage. After the data is processed by Brand24, an automatic extraction process is carried out to produce infographics in the form of sentiment, a summary of mentions, hashtags, and reach [41]. From these results, a discussion stage was carried out.

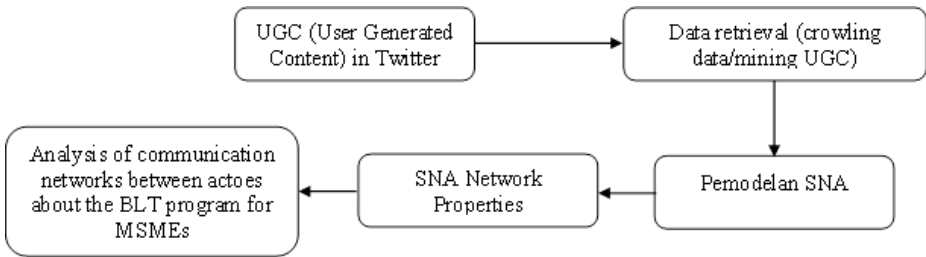


Fig. 2. Mind Map of Netlytic Analysis Process [31] (Researcher Processed, 2022).

Based on Figure 2, the data used in this study were retrieved via Twitter using Netlytic. UGC mining, UGC mining, or data retrieval using keywords are carried out. Then the results of the data crawl will produce SNA modeling, which forms the value of the Network Property for communication and interaction between users in the BLT policy for MSME actors.

4 Results and Discussion

The MSME BLT policy is a program issued by the government to assist micro, small and medium enterprises (MSMEs) during the economic crisis caused by the COVID-19 pandemic in Indonesia. The MSME BLT program has been implemented since October 2021, from October to December. Assistance will be held again in October and December of 2022. This policy is widely reported and discussed by the public. It is because, in Indonesia itself, many MSMEs are experiencing the impact of the COVID-19 pandemic. This makes the MSME BLT policy issued by the government get responses and opinions from the Indonesian people through Twitter, the social media.

4.1 Trend Analysis Through the Number of Mentions

Trend analysis through the number of tweets or mentions in this study using Brand24. We conducted a search using the keywords "umkm", "umkm assistance", and "blt umkm" from September 25 to October 26, 2022. Figure 3 shows the number of mentions in 2022.



Fig. 3. Number of Twitter Mentions.

Source : the result of the Brand24 data process

Picture 3 shows that there were 32,108 mentions from September 25 to October 26, 2022. This shows how widely MSME BLT is discussed in the local community. On September 26, public attention was still low due to the discourse from the government regarding the plan for assistance to MSME actors. The government has not issued an official statement on whether to provide MSME BLT in 2022, so the public response is low. However, there was a significant increase on September 28 with 1496 mentions after the announcement that the MSME BLT also applied to online motorcycle taxis. This government action will help Ojek Online in the midst of the economic crisis and reduce the risk of an increase in the inflation rate due to the COVID-19 pandemic.

Then, starting in early October, the response and public attention increased after the government officially announced that it would assist in the form of BLT to MSME actors, which was previously also given in 2021. After this period, public attention began to decline and then rise gradually. This changing trend shows that with this

assistance, MSME actors can improve their businesses and help MSME actors' capital during the economic crisis due to the COVID-19 pandemic. In addition, the community also believes that the MSME BLT policy can impact the economy and help the recovery of community economic activities.

Until then there was a decrease in a public response to 677 mentions on October 28, after the Coordinating Minister for Small and Medium Enterprises estimated that the disbursement of the MSME BLT could not be carried out in 2022 due to limited time and budget. The statement was not published by the official account representing the government, namely KemenkopUKM, but through verified news accounts, namely Twitter Katadata (@Katadatacoid) and Merdeka (@merdekadotcom) in their tweets. The two Twitter accounts contain the same statement from the Expert Staff of the Minister of Cooperatives and SMEs for Productivity and Competitiveness, that the disbursement of direct cash assistance for MSME actors is still unclear. Overall, it can be concluded that government policies and actions related to MSME actors can influence public response and attention on Twitter.

4.2 Sentiment Analysis on MSME BLT

Sentiment analysis using Brand24 in Figure 4 shows that positive sentiment is higher at 82% compared to negative sentiment at 18%. This indicates that the positive view of the community towards the MSME BLT policy is greater than the negative view. The sentiment was obtained during the period from September 25 to September 26, 2022, from 32,108 mentions on Twitter.

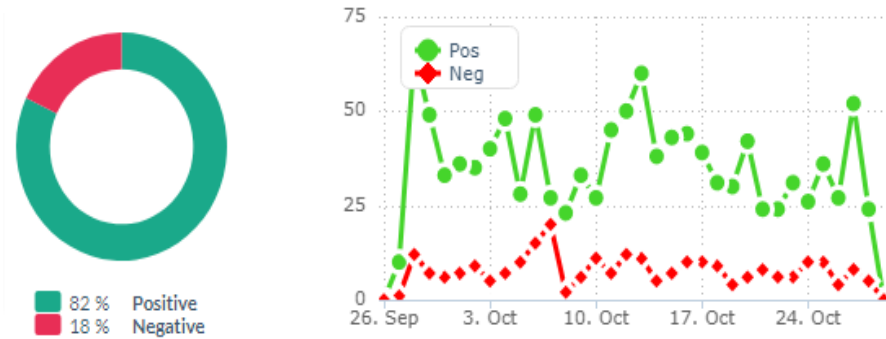


Fig. 4. Percentage and Graph of Sentiment Analysis Results (result of the Brand24 data process).

The algorithm used is if there are more tweets containing positive sentences than those containing negative sentences, the analysis result will be positive (+1 value), but on the other hand, if there are more tweets containing negative sentences than those

containing negative sentences, the analysis result is negative (-1 value), and if the number of positives and negatives is the same, the result is neutral (0) [28]. In sentiment analysis, tweets about MSME BLT and MSME assistance contain more positive sentences than negative sentences. So it shows that the results of the sentiment analysis on the MSME BLT policy are worth +1, which is positive.

The positive sentiment towards the MSME BLT policy is more because the community, especially MSME actors, felt helped by the assistance program to improve business and capital assistance for MSME actors. In addition, society has views and opinions regarding the hope that assistance such as BLT and others, both working capital and providing a place for MSMEs, can continue to be carried out. In the MSME sector, the community responded that the government must continue to encourage more MSMEs or SMEs through various assistance schemes such as BLT and training. In addition, the community also supports Jokowi in prioritizing and prioritizing the MSME sector to build the community's economy through assistance programs for MSMEs. This is one proof of concern for MSME actors so that they can develop as business actors. The community issued all opinions and community responses through Twitter.

Negative sentiment towards the MSME BLT policy can arise because people feel that MSME assistance is difficult to obtain for some people who apply for BLT. On social media, Twitter, the public expressed their views and opinions that the MSME BLT was misdirected to community groups that should not receive MSME assistance. There are groups of people who can't afford it, and those who lack technological skills don't get help. In addition, the community also believes that some community groups that have received other assistance should also receive BLT MSMEs so that the assistance obtained becomes doubled. There are also people who ask that the requirements for BLT MSMEs are not too complicated and lengthy for medium-to-low MSMEs. Overall, it can be concluded that public opinion and response through Twitter can be a positive or negative sentiment towards government actions related to BLT policies for MSME actors.

4.3 Hashtags

On Twitter, hashtags that are trending or the hashtags that appear the most and are most often searched for are marked with a Figure 5 shows the trending hashtags during the period from September 25 to October 26, 2022.

Trending hashtags

| | HASHTAG | MENTIONS |
|----|------------------------------------|----------|
| 1 | #bltumkm | 10 |
| 2 | #blt | 10 |
| 3 | #beritaterbaru | 7 |
| 4 | #beritaterkini | 7 |
| 5 | #bpum | 6 |
| 6 | #kmpenyaluranblttepatsasaran | 6 |
| 7 | #sukseskankebijakanpemerintah | 6 |
| 8 | #bansosbbmringankanrakyat | 6 |
| 9 | #bltbmbantumasayarakat | 6 |
| 10 | #subsidiiberkeadilanuntukmasadepan | 6 |

Fig. 5. Trending Hashtags in Twitter (result of the Brand24 data process).

In Figure 5, it can be seen that #bltumkm is trending number 1, which shows that during this period netizens talked the most about BLT MSMEs. This is because the public wants to know about the MSME BLT program issued by the government. Trending number 2 #BLT, which is assistance provided by the government to people affected by the COVID-19 pandemic, especially to the community who can't afford it. The two hashtags are sought after by the public due to the declining economy of the community. The economic sector is the most affected by the COVID-19 pandemic, so it is hoped that assistance in the form of BLT for MSME actors, can help businesses affected by the COVID-19 pandemic.

In trending number 5, #bpum is one type of Direct Cash Assistance (BLT) provided by the government to MSME actors. The BPUM (Productive Assistance for Micro Enterprises) is almost the same as the BLT for MSMEs, where the amount of assistance funds provided is the same. However, people are more familiar with and discuss BLT MSMEs on Twitter, so #bpum is under #bltumkm, which is trending at number 1. Furthermore, trending with # successforgovernmentpolicy and # kmpenyaluranblttepatsasaran also did not escape being discussed on Twitter. The two hashtags are also indirectly related to policies related to MSME BLT, where it is hoped that the assistance program to the community can help MSME business actors and the government provide BLT to the community in a targeted manner. Overall, it can be concluded that the government's actions can become the most talked about trending topic among the Indonesian people through Twitter.

4.4 Top Public Profiles

Public figures are public figures who have been known by the public so that what is conveyed has an influence. Figure 6 shows the top public profiles talking about BLT MSMEs.

Top public profiles

| | PROFILE | SOURCE | VOICE SHARE | INFLUENCE |
|---|----------------|--------|-------------|-----------|
| 1 | Bisniscom | | 29.418% | 298 337 |
| 2 | pikiran_rakyat | | 25.174% | 255 288 |
| 3 | kompascom | | 16.713% | 169 487 |
| 4 | liputan6dotcom | | 8.78% | 89 040 |
| 5 | tempodotco | | 4.252% | 43 119 |

Fig. 6. Top Public Profiles during 26 September - 25 October 2022 (result of the Brand24 data process)

The top public profile is important because it relates to the influence that is conveyed to the entire audience on Twitter so that it will generate broad sentiment. Some of the Twitter accounts above are accounts with a high level of influence on readers because the Twitter account is a verified news account. Number one of the top five is Bisniscom an online version of the daily newspaper and a member of the Indonesian Business Media Group (BIG Media), which provides financial news, market insights, industry, politics, Indonesian economic issues, and international relations. Figure 7 shows the tweet that Bisniscom posted in regard to the MSME BLT policy.

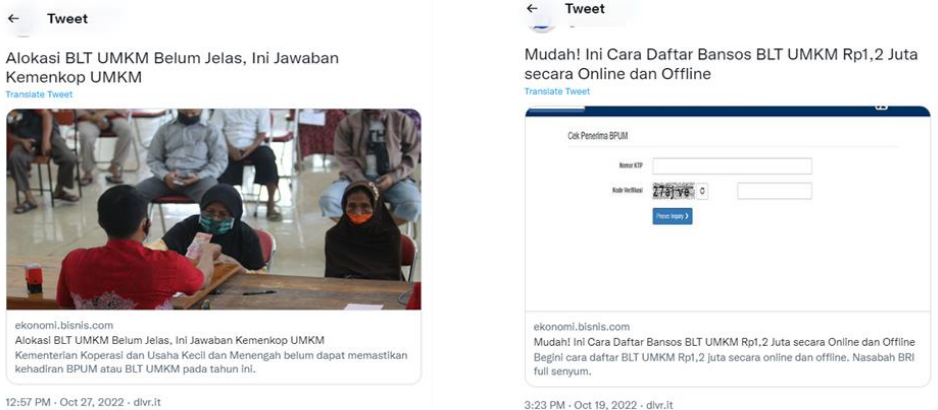


Fig. 7. Tweets Posted by Bisniscom (result of the Brand24 data process).

Among other things, the tweets related to the procedures for registering BLT MSMEs online and offline easily. Then there was also a tweet that the allocation of BLT for MSMEs was still unclear, where the Kemenkop MSME as a representative of the government clarified the statement. Readers' perspectives will be impacted by Bisniscom's tweets because their followers will read them. Overall, it can be concluded that public opinion will be affected by social media platforms like Twitter. A number of studies have also shown that the media can still influence what people think [42].

4.5 Network Pattern of Social Network Analysis

After conducting network analysis, information on the communication network was collected from #bltumkm. The results of modeling the communication network formed from user interactions in conversations have 206 nodes, which describe actors, and 1148 edges, which describe the relationship (line) between actors. Based on the actor's communication pattern, some of the actors are divided into grub clusters. Figure 8 shows the cluster from Netlytic's analysis into 5 networks.

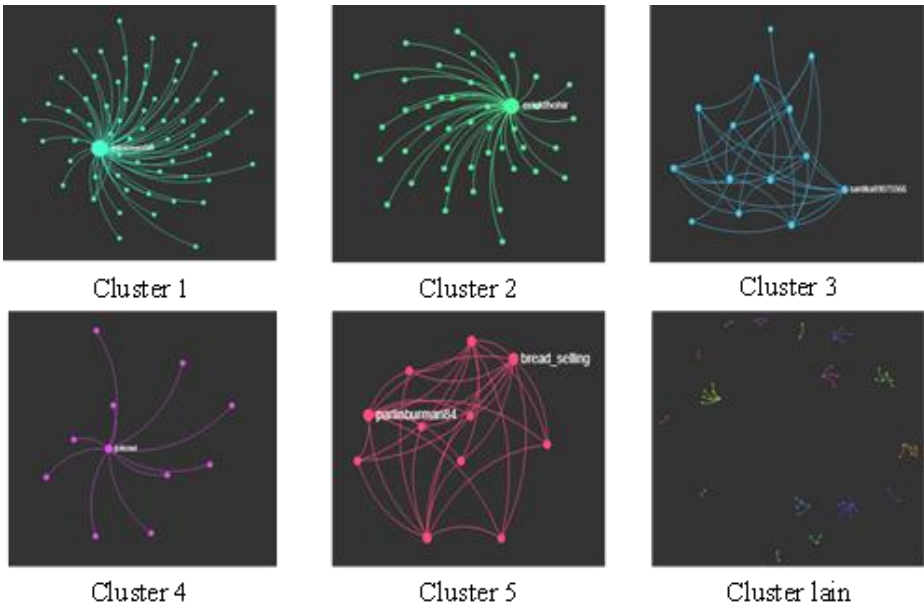


Fig. 8. Clusters on the #bltumkm Network (result of the Netlytic.org data process).

Netlytic analysis also resulted in calculations from Network Properties, obtaining the following data:

Table 1. Network Properties from Netlytic.

| Network Properties | |
|--------------------|----------|
| Diameter | 6 |
| Density | 0.005541 |
| Reciprocity | 0.008658 |
| Centralization | 0.147200 |
| Modularity | 0.835600 |

Table 1 shows the value of the overall measurement results at the system level. The network formed by #bltumkm has a diameter of 6. This means that the distance from one actor to another is 6 steps in the network. The density value describes the proximity of actors to a network. In the table above, the density value is 0.005541, which indicates that the intensity of communication between actors on #bltumkm is low, so it can be concluded that the dissemination of information is slow. In this network, actors on #bltumkm interact and converse with each other less.

Reciprocity is a bond that shows two-way or reciprocal communication between actors in the network. Reciprocity on #bltumkm has a value of 0.008658, which means that there is low two-way or reciprocal communication between actors. So it shows that the number of one-sided conversations and two-way conversations has a small number.

Centralization is a measurement of the average centrality level of all nodes in the network. When the network has high centralization (closer to 1), it indicates that there is a central actor that dominates the flow of information, but if the network is low centralized (closer to 0), it is considered decentralized, and information flows more to many actors [32]. Centralization on #bltumkm has a value of 0.147200, which indicates that the network has low centralization because it is closer to 0. This means that the number of actors in the network has low dominance, not just one.

Modularity determines whether the clusters found represent different communities in a network. The modularity value in #bltumkm is 0.835600, which indicates that the value is below 0.5, so it can be concluded that the clusters found in the network overlap more.

4.6 Actors in Network

The Netlytic analysis found several actors involved in the network. The network has several connections from one node to another. In Figure 9, you can see the ten actors who are mentioned and retweeted the most; in Figure 10, you can see the ten actors who frequently post and retweet.

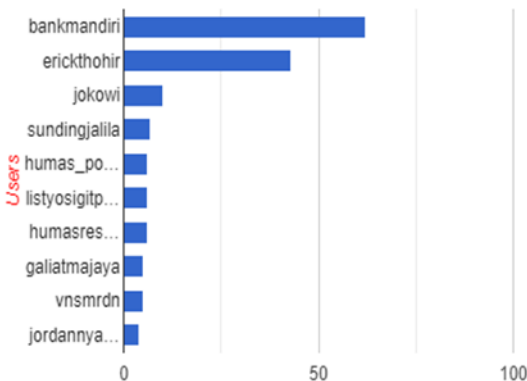


Fig. 9. Top 10 Users (based on In-degree centrality).

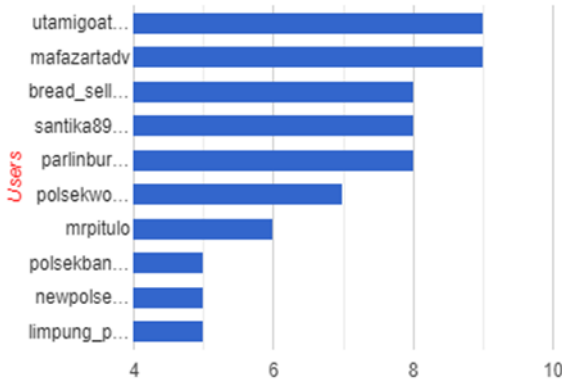


Fig. 10. Top 10 Users (based on Out-degree centrality).

In Figure 9, it is known that the first actor, @bankmandiri, is the account that is most mentioned or retweeted 62 times, where Bank Mandiri is one of the banks that distributes assistance to MSME actors. Then, followed by the second actor, namely the @erickthohir account, which was mentioned 43 times. Minister Erick Thohir also provided business capital assistance for MSME actors and provided training and skills to MSME actors. The third order is to use the account @jokowi 10 times. The President of Indonesia, Jokowi, issued a BLT program for MSME actors and prioritized the MSME sector to improve the community's economy.

In Figure 10, it can be seen that the first actor, @utamigoatmilk, and the second actor, @mafazartadv, are the accounts that post the most about BLT UMKM 9 times. while the third to fifth accounts, namely @bread_selling, @santika89075566, and @parlinburman84, posted 8 times. Overall, it can be concluded that some of these accounts greatly affect the relationships between actors and find out how important actors or nodes in a network are.

4.7 Conversation Content

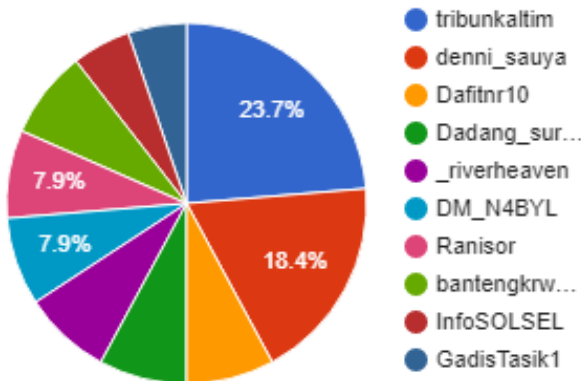


Fig. 11. TopTen Posters (resul of theNetlytic.org data process).

Figure 11 shows the percentage of account data that has the most or dominant tweets on the #bltumkm network. The @tribunkaltim account contributed the most tweets, namely 23.7% of all tweets in this network. An analysis process is carried out on the content of conversations in the #bltumkm network so that they can be grouped into 2 groups. A first group is a community group that supports the MSME BLT program, while the second group is a community group that criticizes the MSME BLT program.

Based on the results of the analysis from excel, in community groups that support the number of tweets, as many as 514 tweets Supporting community groups shows that the community feels helped by the assistance of MSME actors. In addition, the public believes that the President of the Republic of Indonesia, namely Jokowi, cares about the fate of MSMEs. The community also feels the impact of the assistance so that it can be used as business capital for MSME actors.

As for groups of people who criticize, people tend to criticize with a total of 152 tweets. This criticism leads to the implementation of BLT UMKM in the field, which is not well targeted and some people get double assistance. Some residents have businesses and are less well off but do not get help. So the community gives criticism so that the provision of BLT can be more targeted, especially for poor MSME actors. As for the remaining 332 tweets containing neutral posts.

4.8 Word Cloud



Fig. 12. Word Cloud in Netlytic.com

The results of the word cloud (figure 12) in the conversation interaction #bltumkm show that the word that appears the most is the word "UMKM" with 495 written down and "bantuan" with 470 written down. Then there is the word "BLT" with 102 written down. From the results of word cloud, one can see what factors affect the network. So it can be concluded that the #bltumkm network is influenced by several factors, namely the words UMKM, assistance, and BLT, which often appear in conversational interactions.

5 Conclusion

5.1 Summary

Based on the results of research from sentiment analysis and social networks on government policies in providing BLT for MSME actors, the following conclusions are obtained. The results of sentiment analysis on MSME BLT policies show that positive sentiment is 82% higher than the negative sentiment of 18%, so it can be interpreted that public opinion and response through Twitter can form positive or negative sentiments towards government actions in BLT policies for MSME actors. Some

hashtags are trending or the hashtags that appear the most and are most often searched for on Twitter related to the MSME BLT policy, namely #bltumkm being trending number 1 and #blt being trending number 2, so it can be interpreted that government actions can become trending topics most talked about and sought after by the people of Indonesia through Twitter. There are top public profiles that talk about MSME BLT on Twitter, including the top one, *Bisniscom*; then there are *pikiran_rakyat*, *kompascom*, *liputan6dotcom*, and *tempodotco*, which are the next four top public profiles. The results of research from social network analysis show that the communication network in conversation that describes the relationship between actors has a total of 206 nodes and 1148 edges. Based on the actor's communication pattern, the cluster is divided into 5 networks. The calculation of network properties from Netlytic produces measurement values at the system level consisting of diameter, density, reciprocity, centralization, and modularity that are formed in the network.

The Netlytic analysis found several actors involved in the network, namely the 10 actors who were most mentioned and retweeted, as well as the 10 actors who frequently posted and retweeted BLT MSMEs on Twitter. The actor with the most dimensions is the first actor, @bankmandiri; the second actor is the @erickthohir account, and the third actor is the @jokowi account. Meanwhile, the actor who posts the most about BLT UMKM is the first actor, @utamigoatmilk; the second actor is the @mafazartadv account, and the third to fifth actors are @bread_selling, @santika89075566, and @parlinburman84. From the results of the word cloud in the #bltumkm conversational interaction, it shows that the word that appears most often is the word "UMKM." The second is the word "bantuan," and the third is the word "BLT."

5.2 Recommendation

Based on the conclusions above, the suggestions that can be given by researchers are as follows. The use of Twitter social media as a medium for the aspirations of the Indonesian people should be wiser in using social media, especially by creating a link on Twitter so that it can be seen that the use of Twitter social media can indeed be applied to the effective distribution of information in shaping public perception or opinion. This research is limited to SNA modeling generated through the crawling data process on government policies for providing BLT for MSME actors, so quite a bit of data is produced. This is because there are only a maximum of 1,000 datasets that can be recalled by Netlytic. The data in this study is still quite small because it only covers one month. Based on these limitations, further research can increase the data collection period. Future researchers are expected to be able to elaborate the analysis with other methods such as observation and interviews so that stronger research findings can be produced in presenting the actual community response to government policies in providing BLT for MSME actors.

References

1. COVID-19 STP. Menuju COVID-19 Sebagai Endemi Menkominfo : Ayo Perkuat Disiplin Bermasker dan Segerakan Vaksinasi [Internet]. [cited 2022 Sep 1]. Available from:

- <https://covid19.go.id/id/berita/menjuju-covid-19-sebagai-endemi-menkominfo-ayo-perkuat-disiplin-bermasker-dan-segerakan-vaksinasi> (2021)
2. COVID-19 STP. Data Sebaran Global [Internet]. [cited 2022 Sep 1]. Available from: <https://covid19.go.id/id> (2022)
 3. COVID-19 STP. Data Sebaran Indonesia [Internet]. [cited 2022 Sep 1]. Available from: <https://covid19.go.id/id> (2022)
 4. Wielen W, Barrios S. Economic sentiment during the COVID pandemic: Evidence from search behaviour in the EU. *J Econ Bus* [Internet]. Elsevier Inc.(October 2020):105970. Available from: <https://doi.org/10.1016/j.jeconbus.2020.105970> (2021)
 5. Padhana KA, Sadikin M. Analisis Sentimen Masyarakat Terhadap Kondisi Perekonomian di Indonesia Pada Masa Pandemi 2020. *J Ilmu Tek dan Komput.* (2021)
 6. Yamali FR, Putri RN. Dampak Covid-19 Terhadap Ekonomi Indonesia. *Ekon J Econ Bus.* (2020)
 7. Liu W, Yue XG, Tchounwou PB. Response to the covid-19 epidemic: The chinese experience and implications for other countries. *Int J Environ Res Public Health.* (2020)
 8. Carrillo-Larco RM, Castillo-Cara M. Using country-level variables to classify countries according to the number of confirmed COVID-19 cases: An unsupervised machine learning approach. *Wellcome Open Res* (2020)
 9. Lengkong NC, Safitri O, Machus S, Putra YR, Syahadati A, Nooraeni R. Analisis Sentimen Penerapan Psbb Di Dki Jakarta Dan Dampaknya Terhadap Pergerakan Ihsg. *J Teknoinfo.* (2021)
 10. Reza T. Indonesia Resmi Resesi, Ekonomi Kuartal III-2020 Minus 3,49 Persen [Internet]. [cited 2022 Sep 1]. Available from: <https://www.kompas.tv/article/121206/indonesia-resmi-resesi-ekonomi-kuartal-iii-2020-minus-3-49-persen> (2020)
 11. Rahman MM, Ali GGMN, Li XJ, Samuel J, Paul KC, Chong PHJ, et al. Socioeconomic factors analysis for COVID-19 US reopening sentiment with Twitter and census data. *Heliyon* [Internet]. Elsevier Ltd. Available from: <https://doi.org/10.1016/j.heliyon.2021.e06200> (2021)
 12. Pratiwi YR. Pemulihan Perekonomian Indonesia Setelah Kontraksi Akibat Pandemi Covid-19 [Internet]. [cited 2022 Sep 3]. Available from: <https://www.djkn.kemenkeu.go.id/kpkn-banjarmasin/baca-artikel/14769/Pemulihan-Perekonomian-Indonesia-Setelah-Kontraksi-Akibat-Pandemi-Covid-19.html> (2022)
 13. Anggraeni Wilfarda Charismanur NWP, Nurdiah. *Journal of Government and Politics* Government Policy in Empowering SMEs during the Covid-19 Pandemic in Indonesia. *J Gov Polit.* (2021)
 14. Menengah KK dan UK dan RI. *Perkembangan Data Usaha Mikro , Kecil , Menengah Dan Usaha Besar.* WwvDepkopGoId. (2018)
 15. Sarfiah S, Atmaja H, Verawati D. *UMKM Sebagai Pilar Membangun Ekonomi Bangsa.* J REP (Riset Ekon Pembangunan). (2019)
 16. Limanseto H. *UMKM Menjadi Pilar Penting dalam Perekonomian Indonesia* [Internet]. [cited 2022 Sep 3]. Available from: <https://ekon.go.id/publikasi/detail/2969/umkm-menjadi-pilar-penting-dalam-perekonomian-indonesia> (2021)
 17. BKPM. *Upaya Pemerintah Untuk Memajukan UMKM Indonesia* [Internet]. [cited 2022 Sep 3]. Available from: <https://www.bkpm.go.id/id/publikasi/detail/berita/upaya-pemerintah-untuk-memajukan-umkm-indonesia>
 18. Katadata Insight Center. *DAMPAK COVID-19 TERHADAP UMKM* [Internet]. [cited 2022 Sep 3]. Available from: <https://katadata.co.id/umkm> (2020)
 19. Nasution DAD, Erlina, Muda I. *Dampak Pandemi COVID-19 terhadap Perekonomian Dunia.* *J Ekon Perjuangan.* (2021)
 20. Block D. *Political economy in applied linguistics research.* Vol. 50, *Language Teaching.* (2017)

21. Moegiarso S. Optimalisasi Pemanfaatan Anggaran Program PEN Untuk Mendorong Akselerasi Pemulihan Ekonomi Nasional [Internet]. [cited 2022 Sep 4]. Available from: <https://www.ekon.go.id/publikasi/detail/3400/optimalisasi-pemanfaatan-anggaran-program-pen-untuk-mendorong-akselerasi-pemulihan-ekonomi-nasional> (2021)
22. Kemenparekraf. Skema Perlindungan dan Pemulihan Ekonomi Bagi UMKM di Tengah Pandemi Covid-19 [Internet]. [cited 2022 Sep 4]. Available from: <https://pedulicovid19.kemenparekraf.go.id/skema-perlindungan-dan-pemulihan-ekonomi-bagi-umkm-di-tengah-pandemi-covid-19/> (2020)
23. Setiawan VN. Riset Medsos: Publik Lihat Negatif Kebijakan Pemerintah Atasi Corona [Internet]. [cited 2022 Sep 4]. Available from: <https://katadata.co.id/agungjatmiko/berita/5ea5c764827c4/riset-medsos-publik-lihat-negatif-kebijakan-peemerintah-atasi-corona> (2020)
24. Laurensz B, Eko Sedyono. Analisis Sentimen Masyarakat terhadap Tindakan Vaksinasi dalam Upaya Mengatasi Pandemi Covid-19. *J Nas Tek Elektro dan Teknol Inf.* (2021)
25. Rahmanti AR, Ningrum DNA, Lazuardi L, Yang HC, Li YC. Social Media Data Analytics for Outbreak Risk Communication: Public Attention on the “New Normal” During the COVID-19 Pandemic in Indonesia. *Comput Methods Programs Biomed* [Internet]. Elsevier B.V.; Available from: <https://doi.org/10.1016/j.cmpb.2021.106083> (2021)
26. Bing L. Opinion Mining. Department of Computer Science, University of Illinois at Chicago (2010)
27. Bing L. *Sentiment Analysis and Mining of Opinions.* California: Morgan & Claypool (2012)
28. Dwianto RA, Nurmandi A, Salahudin S. The Sentiments Analysis of Donald Trump and Jokowi’s Twtters on Covid-19 Policy Dissemination. *Webology* (2021)
29. Utami SR, Safitri RN, Kuncoroyakti YA. Analisis Jaringan dan Aktor # BatalkanOmnibusLaw di Media Sosial Twitter Menggunakan Social Network Analysis (SNA) topik populer yang berupa tagar pada Twitter adalah # BatalkanOmnibusLaw . # BatalkanOmnibusLaw yang ramai menjadi pembicaraan warganet se. (2021)
30. Seung-Pyo J, Do-Hyung P. Visualization of brand positioning based on consumer web search information: using social network analysi. (2017).
31. Diky Prabhawa M, Rahayu D. Penentuan Top Kampanye Pemasaran Menggunakan Social Network Analysis Pada Shopee Dan Tokopedia Di Media Sosial Twitter. (2022)
32. Anestha P, Fatoni DA. Analisis Jaringan Komunikasi Percakapan #Tetapdukungsbb Di Twitter Pada Penerapan Psbb Kedua Dki Jakarta Communication Network Analysis #Tetapdukungsbb Conversation in Twitter on Second Implementation of the Psbb in Dki Jakarta. *J Spektrum Komun.* (2020)
33. Kumar S, Morstatter F, Liu H. *Twitter Data Analytics.* Springer (2014)
34. Stieglitz S, Mirbabaie M, Ross B, Neuberger C. Social media analytics – Challenges in topic discovery, data collection, and data preparation. *Int J Inf Manage* [Internet]. Elsevier; 2018;39(December 2017):156–68. Available from: <https://doi.org/10.1016/j.ijinfomgt.2017> (2017)
35. Spina D, Zubiaga A, Sheth A, Strohmaier M. Processing social media in real-time. *Inf Process Manag.* (2019)
36. Chatamallah M. *Opini Publik dan Kebijakan Pemerintah.* Mediator. (2007)
37. Putri DTE. Pengaruh Hasil Polling Terhadap Pembentukan Opini Pemilih Pemula. *Bunga Rampai Tata kelola Pemilu Indones.* (2020)
38. Creswell JW, Creswell JD. *Research Design Qualitative, Quantitative, and Mixed Methods Procedures.* Fifth. SAGE Publications; (2018)
39. Rohimi P. SNA Dengan Netlytic pada Kolom Komentar Video Youtube Gus Miftah Ceramah Gereja. *Proceeding 1st Conf n Strength Islam Stud Digit Era Vol.* (2021)
40. Inayah D, Purba FL. Implementasi Social Network Analysis Dalam Penyebaran Informasi Virus Corona (Covid-19) Di Twitter. *Semin Nas Off Stat.* (2021).

41. Ali SR, Dobbs TD, Whitaker IS. Webinars in plastic and reconstructive surgery training - a review of the current landscape during the COVID-19 pandemic. *J Plast Reconstr Aesthetic Surg.* (2020)
42. Krings W. Impacting the B2B-Business Development Process: Social Media Usage within a Global Software Environment. *Int J Account Financ Rev.* (2020)

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

