Sentiment Analysis and Marketing Mix in Twitter Conversations About Mixue

Rully Arifiansyah
Asaindo University, Indonesia
Correspondent: rully@asaindo.ac.id

ABSTRACT: This study delves into the rapid growth and public reception of Mixue, a Chinese beverage and ice cream franchise, in post-pandemic Indonesia. Employing Twitter sentiment analysis through the lens of the 7P marketing mix framework (Product, Price, Promotion, Place, People, Process, Physical Evidence), the research evaluates consumer attitudes towards Mixue amidst its explosive expansion and recent Halal certification. Data was collected through Twitter API and Scrapy, encompassing 7087 Indonesian-language tweets related to Mixue between January and February 2023. Sentiment analysis revealed an overall positive reception towards Mixue, particularly regarding its products and affordability. However, concerns emerged surrounding limited flavor variety, perceived high prices, promotional saturation, and queuing difficulties. Implications of these findings highlight the importance of franchise businesses adapting to evolving consumer preferences in the post-pandemic market. Mixue could benefit from diversifying its menu, addressing queuing issues, and tailoring promotions to enhance the customer experience. Gaining insights into public sentiment allows Mixue and other franchises to refine their strategies and maintain long-term success in the ever-changing Indonesian market. This research serves as a valuable stepping stone for further exploration into consumer preferences for specific flavor variations, conducting price comparisons, evaluating promotional effectiveness, and optimizing outlet placement and customer service. Addressing these aspects can fuel Mixue's continued growth and strengthen its position within the thriving Indonesian food and beverage landscape.

Keywords: Sentiment Analysis, Marketing Mix, 7P, twitter

INTRODUCTION

The development of the national food and beverage industry after the pandemic is currently experiencing rapid growth, data from the BPS in 2022 shows the growth rate at 2.54%. This can be seen through the mushrooming of cafes and food and beverage outlets in urban areas and its supporting regions. The increase in online services is also increasingly spurring the growth of this industry. The growth rate of this industry is able to attract investors from both home and abroad.

One form of business that is in demand by the public is Franchise. Franchise is formal permission given by a company to somebody who wants to sell its goods or services in a particular area; formal permission given by a government to somebody who wants to operate a public service as a business, A franchise is a win-win partnership where one company (franchisor) shares its brand and know-how with another (franchisee) for mutual growth, both financially and through brand expansion (Lee et al., 2021).

Currently, there are three types of franchise types that are developing, first Product and Trade Name Franchise (PATNF) such as Toyota and Honda, second Business Format Franchises (BFF) like McDonald's, and Affiliate and Conversion Franchise (CF) like the Hilton Hotel. Currently, it is predicted by the Chairman of Franchise & License Indonesia that the growth of franchise business can reach 5.3%, with a dominance of food and beverage services by 44.09%. Other than that, including retail (14.17%), non-formal education services (11.02%), beauty/health services (11.02%), and laundry services (7.09%) (Bisnis.com, 2022). The franchise system has advantages over its own business, so it is quite attractive to investors and entrepreneurs. Amir Karamoy (Amir Karamoy, 2013) explains several advantages of the franchise system, a well-established concept, mentoring, technical assistance as well as operational management, SOPs, low risk, access to credit, while weaknesses are outlined, including Not free, Monotonous, low position in the agreement, dependence. Meanwhile, for the franchise company, the goal is to expand the market, save capital, share risks, and utilize entrepreneurs.

One of the most phenomenally growing current franchise products is Mixue, a beverage and ice cream product from China. This product began its business in Indonesia in Bandung in 2020, and with the implementation of the franchise system, Mixue has reached 300 outlets throughout Indonesia in early 2023. In the management of the franchise system, Mixue is present with a cost of around Rp. 800 million, with details of a deposit of Rp. 40 million, management 20 million, tools and machines 200 million, raw materials 100 million, and renovation costs of 300 million. Estimated monthly turnover is 300 million.

The rapid growth of Mixue outlets has become a topic of discussion among people in the online world. Based on Google Trend data, the increase in Google searches skyrocketed drastically in January when Mixue outlets massively entered major cities such as Jakarta, Surabaya, and Bali.
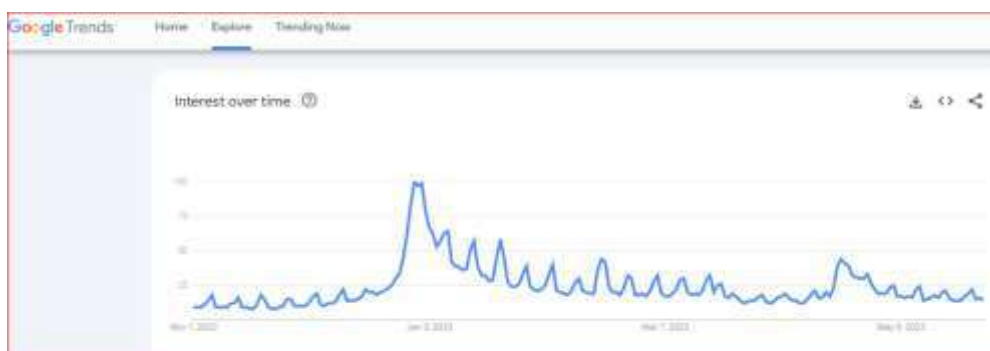
Picture1. Google Trends "mixue"

Additionally, it became a very intense conversation and content on social media such as Twitter, Instagram, and YouTube. The conversation of Mixue on Twitter is getting more and more attention from netizens as some influencers try to dissect the Mixue marketing strategy from their

respective perspectives. The marketing mix campaign strategy or marketing mix (7P: Product, Price, Promotion, Place, People, Process, Physical Evidence) is very worthy to be discussed in this study, using a sentiment analysis approach on Twitter social media, through conversations on Twitter about Mixue, positive or negative sentiment data on Mixue will be obtained, and can see the Gap between public expectations and actual acceptance of Mixue products, franchise companies must be able to respond to the culture adopted by the community (Subawa et al., 2020) for example related to the Halal product which has not yet been obtained by Mixue, where Halal is currently one of the reference issues for some consumers in Indonesia. Furthermore, franchise companies must also pay attention to the changes in lifestyle that occur in the community, this is related to the increasing public concern about the health impact that will emerge in the future considering that Mixue products contain a high sugar content. Also related to the product life cycle, especially beverages in Indonesia, which are usually quite short in age. As explained in previous research, the sustainability of the franchise business is positively correlated with the level of knowledge of franchise owners (Ayup-Gonzalez et al., 2019).

Table 1. Phenomenon of Research

Phenomenon	Description
Rapid growth of Mixue outlets:	Mixue outlets in Indonesia have grown from 0 in 2020 to 300 in early 2023, sparking online discussions and content creation.
High public interest:	Google search and social media conversations about Mixue have skyrocketed, particularly on Twitter where influencers analyze its marketing strategy.
Potential issues:	1. Halal certification: Mixue currently lacks Halal certification, which may affect some consumers in Indonesia.
	2. High sugar content: Concerns about the health impact of Mixue's high sugar content have emerged.
	3. Short product life cycle: The Indonesian beverage market typically has short product lifecycles, raising questions about Mixue's long-term sustainability.

Marketing Mix

The marketing mix is a marketing strategy divided into four crucial parts to achieve a goal: product, price, promotion, place (Kotler & Armstrong, 2008). Product relates to planning and developing a product or service that suits market needs, product diversity, design, size, customer service, and includes product warranties. Price is a primary but flexible element of the marketing mix. It can be adjusted according to needs, unlike product characteristics and distribution channels (Kotler & Kevin Keller Lane, 2009). Promotion is used as a means of communication to consumers, providing information about product uniqueness, utility, and benefits. It also acts as a tool to influence consumers in the purchasing process (Tjiptono, 2019). According to (Kotler & Armstrong, 2008), companies can promote through advertising, personal selling, sales promotion, and public relations. Place refers to the combination of location and distribution channels; how strategic a company's location is in relation to the distribution methods applied by the company. According to (Lovelock & Wirtz, 2011), the next 3Ps are People, Process, and Physical evidence.

People include recruitment, training, and motivating employees. Process is related to managing the service process for customers, and Physical evidence includes tangible proof related to visual components such as product packaging and business place design, allowing customers to engage in business relationships more tangibly. Based on research (Jumari & Astutiningsih, 2022) the implementation of marketing mix strategy is able to increase sales volume.

Text Mining

The process involves using computer algorithms and natural language processing techniques to extract useful information from unstructured text (Feldman & Sanger, 2006). The primary aim of text mining is to discover patterns, trends, and insights from text, including documents, articles, tweets, or other text entities. Common techniques used in text mining include tokenization (breaking text into smallest units like words), removing stop words (eliminating common and uninformative words), word modeling (depicting words as numerical vectors), sentiment analysis (identifying and classifying opinions or emotions in text), classification (categorizing text into specific groups), and entity mining (identifying entities such as names of people, locations, and organizations in text). By applying text mining techniques in SNA (Social Network Analysis), researchers can gain a deeper understanding of the characteristics and dynamics of formed social networks, aiding better decision-making in various fields like business, politics, and social realms (Martínez-Navalón et al., 2020).

Sentiment Analysis

Sentiment analysis involves identifying, extracting, and evaluating sentiments or opinions in text or other data. Its goal is to understand and analyze views, emotions, attitudes, or judgments expressed in text like customer reviews, social media, news articles, among others. Opinions and sentiments are highly relevant to our daily lives. Hence, there's a need to automatically analyze user-generated data to monitor public opinions and assist decision-making. For example, Twitter posts have been utilized to forecast election outcomes. Sentiment analysis is an effective tool for companies, governments, and researchers to extract and analyze public moods and views, gain valuable insights in the business world, and make better decisions (Birjali et al., 2021). Sentiment analysis yields positive sentiments in the form of appreciation for promotional events, customer-oriented policies, user-friendly applications, and quick user experiences. Meanwhile, negative sentiments arise in the form of complaints about poor user experiences with applications and complex policies (Andrian et al., 2022). Sentiment analysis on Twitter data presents a significant challenge due to involved ambiguity, like slang usage, misspellings, emoticons, and more. This project is a small step towards efficient sentiment analysis automation focusing on ambiguous statements. The proposed system aims to extract genuine emotions from tweets, which would be highly beneficial for marketing teams to obtain accurate and detailed user feedback (Berlin et al., 2022).

Sentiment Classification Techniques

The Support Vector Machine (SVM) algorithm is one of the supervised learning techniques commonly used for classification and regression. The fundamental principle of SVM is as a linear classifier, which is then extended to handle non-linear problems through the use of the kernel trick in high-dimensional workspace. Research utilizing sentiment analysis on cosmetic product shows

results indicating that the majority of consumers are satisfied with the Laneige Water Sleeping Mask's quality, yet some consumers experience negative effects and find the price relatively high (Dheanis et al., 2021). In another study, the Support Vector Machine (SVM) method was used in sentiment analysis to classify sentiment as complaints or non-complaints. In sentiment analysis of @Ovo_ID, the accuracy level of the SVM method reached 94% with 1000 tweets (Sulastomo et al., 2022).

METHOD

This study generally involves data acquisition from Twitter, data preprocessing, aspect classification, and sentiment classification using Support Vector Machine. Validation of classification results is carried out using the 10-fold cross-validation method and confusion matrix.
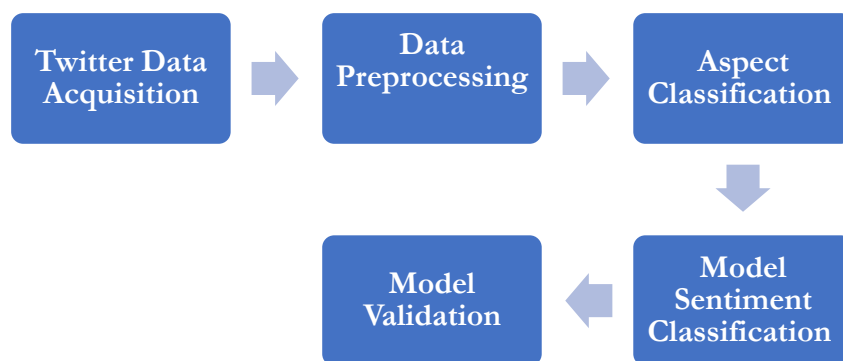
Picture 2. Research Method

Twitter Data Acquisition

In this research, the data used comprises tweets related to Mixue and written in the Indonesian language. Twitter API is utilized to collect these tweet data. The collected tweet data spans from January 1 to February 28, 2023, totaling 7087 tweets. These Twitter data were then annotated by three annotators. Annotation involved referencing seven aspects of the marketing mix known as the 7Ps: product, price, promotion, place, process, people, and physical evidence. Annotation guidelines were prepared as a reference for annotators in labeling the data. Each tweet was annotated based on relevant 7P aspects, with positive, negative, or neutral labels which describe on table 2.

Table 2. 7P Sentiment Category

Sentiment Categories	Positive Sentiment	Neutral Sentiment	Negative Sentiment
Product	Expressions of delight, satisfaction, positive experiences, praise for taste/quality/certification	Statements neither heavily praising nor criticizing Mixue products	Critiques on flavor variety/menu issues/indifference towards Halal
Price	Favorable comments on affordability/discounts/value	Neutral statements about pricing without strong opinions	Complaints about high prices/negative comments on pricing
Promotion	Enthusiastic responses to promotions/mascots/marketing	Posts sharing promotional info without explicit feelings	Negative opinions about excessive promotions/inconsistencies
Place	Positive reactions towards outlets, excitement about new openings	Comments lacking clear sentiment about outlets	Complaints about difficulty finding outlets/disappointment with locations
People	Positive remarks on service/efficiency/recruitment	Neutral observations about employees or outlets	Negative comments about behavior/delivery issues
Process	Satisfaction with purchasing process, except for potential queue complaints	Statements lacking strong sentiment about the process	Discomfort/reluctance due to queuing
Physical Evidence	Positive comments on taste/freshness/attributes	Opinions that aren't explicitly positive or negative	Disliking the taste/dissatisfaction with branding

These categories provide a comprehensive view of how sentiments are expressed across various aspects related to Mixue, capturing the range of responses from Twitter users.

Data Preprocessing

The data collected undergoes preprocessing to clean and prepare it before further analysis. The preprocessing process involves steps such as removing irrelevant elements like URLs, punctuation, special characters, and short links. Additionally, words that do not contribute significantly to sentiment analysis are eliminated through three main stages: tokenization, stopword filtering, and stemming (Table 3)

In the tokenization stage, sentences or text are broken down into individual words, and the relationship between these words is preserved to facilitate network association analysis. The next stage involves stopword filtering, aiming to eliminate phrases or words that do not provide meaningful contributions to the analysis. Lastly, stemming is performed to clean word affixes such as prefixes, suffixes, infixes, and confixes, with the goal of combining words that originate from the same root word for subsequent association analysis. After undergoing these preprocessing stages, the remaining number of tweet data is 6745 as shown on Table 4.

Table 3. Processing Data

text	LABEL 7P	clean	Case_Folding_&_Clean_Emoji
@convomfs Alhamdulillah berakhir sudah keributan mixue halal atau ga halal	Product	Alhamdulillah berakhir sudah keributan mixue halal atau ga halal	alhamdulillah berakhir sudah keributan mixue halal atau ga halal
2x beli mixue tapi ngecawain banget pelayanan nya 😳 nanya pake nada tinggi,judesnya minta ampun juga wkwkw https://t.co/8fzF5UKyTC	People	x beli mixue tapi ngecawain banget pelayanan nya 😳 nanya pake nada tinggijudesnya minta ampun juga wkwkw	x beli mixue tapi ngecawain banget pelayanan nya nanya pake nada tinggijudesnya minta ampun juga wkwkw
Aaaaasik mixue sekarang udah ada sertifikat halalnya! Udah ga perlu ragu-ragu lagi buat beli hihi. Amaaaan!! #mixue #viral https://t.co/SNmJ2MF14e	Product	Aaasik mixue sekarang udah ada sertifikat halalnya Udah ga perlu raguragu lagi buat beli hihi Amaan	aaasik mixue sekarang udah ada sertifikat halalnya udah ga perlu raguragu lagi buat beli hihi amaan
/info mixue nih ngadi ngadi banget dah, udah murah + dapat diskon lagi pula. Note = sender bukan pegawainya ya https://t.co/3JWwZeZSP0	Price	info mixue nih ngadi ngadi banget dah udah murah dapat diskon lagi pula Note sender bukan pegawainya ya	info mixue nih ngadi ngadi banget dah udah murah dapat diskon lagi pula note sender bukan pegawainya ya

@tanyakanrl Mixue udah ada deket rumah aku, kayaknya nempatin ruko kosong ato cafe yg udah tutup https://t.co/aJlLYePTXp https://t.co/ziglvpqrdK	Place	Mixue udah ada deket rumah aku kayaknya nempatin ruko kosong ato cafe yg udah tutup	mixue udah ada deket rumah aku kayaknya nempatin ruko kosong ato cafe yg udah tutup
22/365. awali pagi dengan minum mixue depan kosan. https://t.co/n558ZAw5Jz	Physical Evidence	awali pagi dengan minum mixue depan kosan	awali pagi dengan minum mixue depan kosan
beli mixue dalemkaum penuh bgt udah kaya antrian di bank https://t.co/DdIxNru98i	Process	beli mixue dalemkaum penuh bgt udah kaya antrian di bank	beli mixue dalemkaum penuh bgt udah kaya antrian di bank
Padahal niatnya pulang nnton persib pengen beli mixue, krna lg ada event valentine :) https://t.co/m6BeFb6wNN	Promotion	Padahal niatnya pulang nnton persib pengen beli mixue krna lg ada event valentine	padahal niatnya pulang nnton persib pengen beli mixue krna lg ada event valentine

slang_word	Tokenizing	Filtering	Stemming
alhamdulillah berakhir sudah keributan mixue halal atau enggak halal	['alhamdulillah', 'berakhir', 'sudah', 'keributan', 'mixue', 'halal', 'atau', 'enggak', 'halal']	['alhamdulillah', 'keributan', 'mixue', 'halal', 'halal']	alhamdulillah ribut mixue halal halal
kali beli mixue tapi ngecawain banget pelayanan nya tanya pakai nada tinggijudesnya meminta ampun juga wkwkw	['kali', 'beli', 'mixue', 'tapi', 'ngecawain', 'banget', 'pelayanan', 'nya', 'tanya', 'pakai', 'nada', 'tinggijudesnya', 'meminta', 'ampun', 'juga', 'wkwkw']	['kali', 'beli', 'mixue', 'ngecawain', 'banget', 'pelayanan', 'nya', 'pakai', 'nada', 'tinggijudesnya', 'ampun', 'wkwkw']	kali beli mixue ngecawain banget layan nya pakai nada tinggijudesnya ampun wkwkw
aaasik mixue sekarang sudah ada sertifikat halalnya sudah enggak perlu raguragu lagi buat beli hihi amaan	['aaasik', 'mixue', 'sekarang', 'sudah', 'ada', 'sertifikat', 'halalnya', 'sudah', 'enggak', 'perlu', 'raguragu', 'lagi', 'buat', 'beli', 'hihi', 'amaan']	['aaasik', 'mixue', 'sertifikat', 'halalnya', 'raguragu', 'beli', 'hihi', 'amaan']	aaasik mixue sertifikat halal raguragu beli hihi ama
info mixue nih ngadi ngadi banget deh sudah murah dapat	['info', 'mixue', 'nih', 'ngadi', 'ngadi', 'banget', 'deh', 'sudah', 'murah', 'dapat', 'diskon', 'lagi', 'pula', 'note',	['info', 'mixue', 'nih', 'ngadi', 'ngadi', 'banget', 'deh', 'murah', 'diskon',	info mixue nih ngadi ngadi banget deh murah

diskon lagi pula note sender bukan pegawainya ya	'sender', 'bukan', 'pegawainya', 'ya']	'note', 'sender', 'pegawainya', 'ya']	diskon note sender pegawai ya
mixue sudah ada dekat rumah aku kayaknya nempatin ruko kosong atau cafe yang sudah tutup	['mixue', 'sudah', 'ada', 'dekat', 'rumah', 'aku', 'kayaknya', 'nempatin', 'ruko', 'kosong', 'atau', 'cafe', 'yang', 'sudah', 'tutup']	['mixue', 'rumah', 'kayaknya', 'nempatin', 'ruko', 'kosong', 'cafe', 'tutup']	mixue rumah kayak nempatin ruko kosong cafe tutup
awali pagi dengan minum mixue depan kosan	['awali', 'pagi', 'dengan', 'minum', 'mixue', 'depan', 'kosan']	['awali', 'pagi', 'minum', 'mixue', 'kosan']	awal pagi minum mixue kosan
beli mixue dalemkaum penuh banget sudah kayak antrian di bank	['beli', 'mixue', 'dalemkaum', 'penuh', 'banget', 'sudah', 'kayak', 'antrian', 'di', 'bank']	['beli', 'mixue', 'dalemkaum', 'penuh', 'banget', 'kayak', 'antrian', 'bank']	beli mixue dalemkaum penuh banget kayak antri bank
padahal niatnya pulang menonton persib pengin beli mixue karena lagi ada event valentine	['padahal', 'niatnya', 'pulang', 'menonton', 'persib', 'pengin', 'beli', 'mixue', 'karena', 'lagi', 'ada', 'event', 'valentine']	['niatnya', 'pulang', 'menonton', 'persib', 'pengin', 'beli', 'mixue', 'event', 'valentine']	niat pulang tonton persib pengin beli mixue event valentine

Table 4. 7P Label Marketing Mix

Label	Negatif	Netral	Positif
LABEL 7P			
People	5	9	15
Physical Evidence	40	105	97
Place	328	599	548
Price	17	57	62
Process	36	71	58
Product	605	1630	1860
Promotion	82	293	228

Source: author data analysis

Aspect Classification

Data that has undergone preprocessing is then analyzed to calculate the frequency of the most commonly occurring words in each aspect using the count vectorizer method. The words that frequently appear in the count vectorizer for each aspect are then grouped based on word categories related to the factors influencing each aspect. This categorization allows each tweet to be classified into one or several aspects simultaneously. Subsequently, tweets will be classified based on word category using the string matching method with Thefuzz library. In this process, each tweet will be checked to determine if it contains words belonging to the word category using Thefuzz. The classification is based on the 7P criteria (Table 5). For instance, in the

promotion category, there is the word "clown," where the promotional mix is often done using attractive and funny clowns to attract consumer interest.

Table 5. 7P Classification

Product	Price	Place	Promotion	Process	People	Physical Evidence
Beli	bayar	area	badut	antri	karyawan	kemasan
Bentuk	diskon	cabang	event	melayani	pelayan	Logo
brand	harga	distribusi	iklan	orderan	petugas	minum
enak	pembayaran	gerai	marketing	pelayanan		online
fitur	biaya	kedai	mascot	pemesanan		pacakging
halal	gratis	lokasi	maskot	pengalaman		
ice	murah	outlet	Promotion	pesan		
Jajan		ruko		proses		
Kualitas		toko				
Makan						
menu						
nyoba						
rasa						
size						
ukuran						
varian						
warna						

Sentiment Classification

The sentiment classification process is carried out using the Support Vector Machine algorithm. In a study concerning customer feedback on mobile banking via Twitter, it was shown that sentiment classification and accuracy performance evaluation using the Support Vector Machine (SVM) machine learning algorithm are the best-performing models with the highest values in accuracy, precision, recall, and F1 score (Rahman et al., 2022).

This step produces a model used to identify sentiments for each aspect within the 7Ps (Table 2). Subsequently, Mixue review data that has undergone preprocessing, weight calculation, and aspect classification is used as the test data.

Data Validation

In validation, the confusion matrix and 10-fold cross-validation are employed as methods. The goal of the model validation stage is to measure the model's performance by seeking accuracy, precision, recall, and F1 score values.

RESULT AND DISCUSSION

This section covers topics such as WordCloud, aspect classification results, and sentiment classification in tweets related to Mixue. The classification model's performance using the Support Vector Machine algorithm is displayed in the form of bar graphs and a confusion matrix. Sentiment

analysis results are represented through bar graphs, with blue indicating positive sentiment, yellow for negative sentiment, and green for neutral sentiment.

Tweet data that has undergone preprocessing by python (Picture 3) is visualized using WordCloud for each aspect that holds sentiment value, as seen in Figure 5.

Picture 3. Pyhton processing data
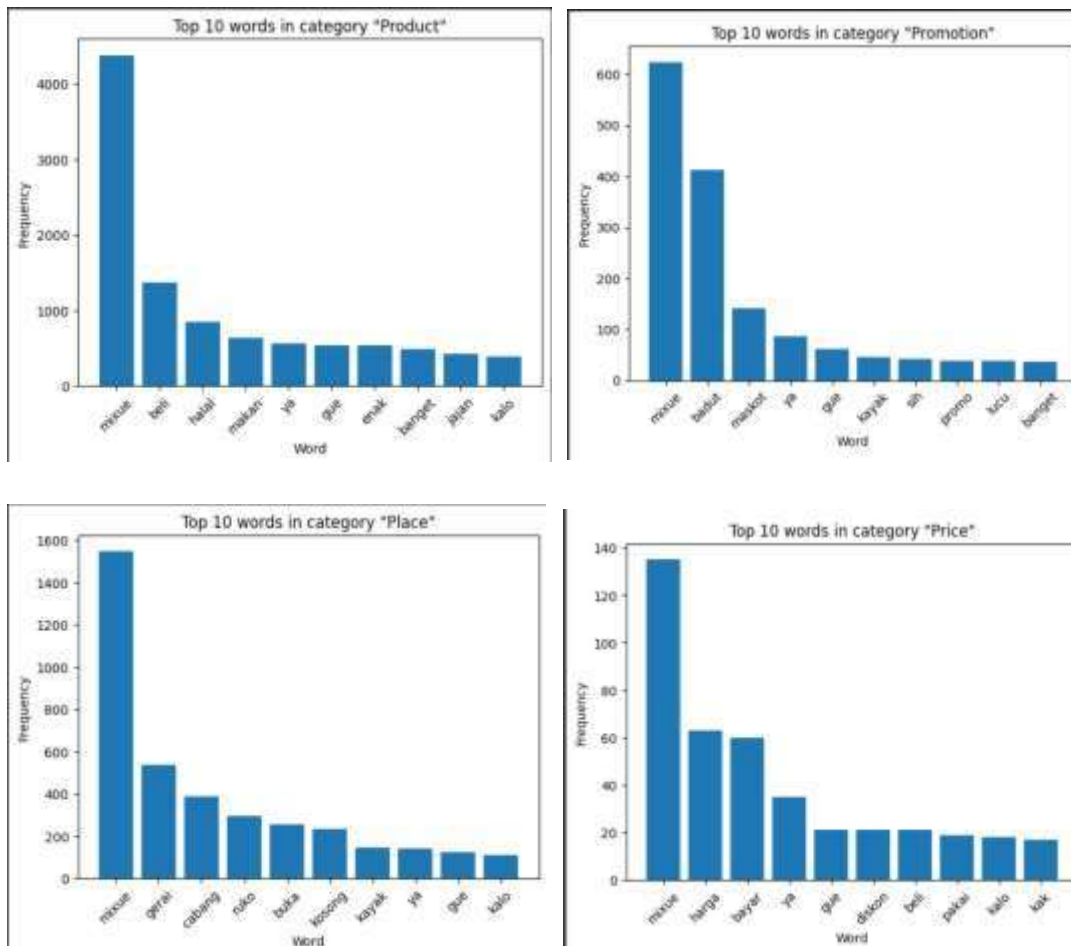
Picture 4. Top 10 Word in 7P

Picture 5. Visualization Word Cloud

The WordCloud visualization demonstrates that in the product aspect, words like "delicious," "purchase," "Halal," "really," and "try" reflect consumers' experiences in buying Mixue products and their feelings towards Mixue products. In the price aspect, dominant words are "affordable," "discount," and "payment method," indicating that consumers appreciate this aspect due to the affordable price, available discounts, and transaction convenience. In the promotion aspect, Mixue went viral due to its clown/mascot attraction, and words like mascot, clown, and cute were widely discussed.

Regarding the place aspect, words like store, shop unit, branch, and store are mentioned, indicating the netizens' attention towards Mixue outlets, with some even recommending empty shop units to be turned into Mixue outlets. The people aspect encompasses employees and duties, relating to how Mixue employees perform their tasks. The process aspect highlights words like "queue," "order," and "really," reflecting consumers' difficulties in purchasing Mixue due to queues at outlets. Lastly, the physical evidence aspect discusses logos, Halal, and smiles, relating to consumer concern about Mixue's Halal logo, which is not yet present.

The experiment was conducted to classify aspects in order to group data into different 7P aspects. After undergoing the preprocessing process and the aspect classification stage, the resulting dataset has could see in Table 6 Confusion matrix.
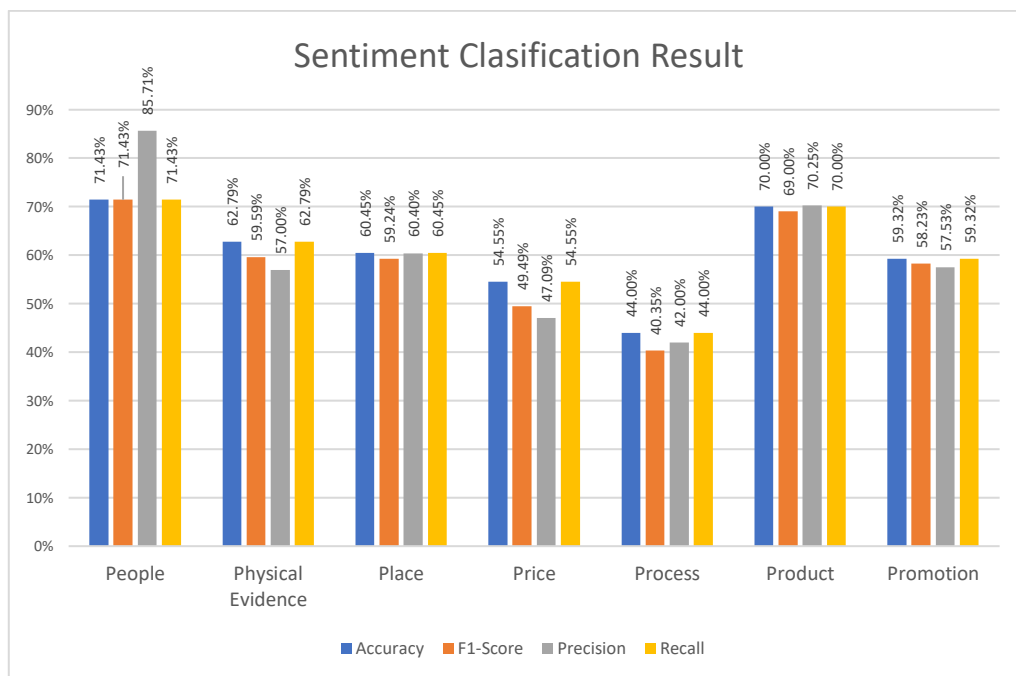
Picture 6. Sentiment Clasification Result

Figure 6 shows the classification model performance with SVM after aspect classification. The People aspect has the highest accuracy score at 71.43%, followed by the Product aspect at 70%, the Physical Evidence aspect at 62.79%, the Place aspect at 60.45%, the Promotion aspect at 59.3%, the Price aspect at 54.5%, and the Process aspect at 44%.

Table 6. Confusion Matrix

Confusion Matriks For Category "Product"			
Actual	**Negatif**	43	32	50
	Netral	10	281	59
	Positif	5	92	251
		Negatif	**Netral**	**Positif**
		Prediction		

Confusion Matriks For Category "Price"			
Actual	**Negatif**	0	1	3
	Netral	0	6	4
	Positif	0	2	6
		Negatif	**Netral**	**Positif**
		Prediction		

Confusion Matriks For Category "Promotion"			
Actual	**Negatif**	1	6	3
	Netral	3	45	15
	Positif	2	19	24
		Negatif	**Netral**	**Positif**
		Prediction		

Confusion Matriks For Category "Place"			
Actual	**Negatif**	31	21	19
	Netral	5	111	22
	Positif	10	46	46
		Negatif	**Netral**	**Positif**
		Prediction		

Confusion Matriks For Category "People"			
Actual	**Negatif**	1	0	0
	Netral	0	2	2
	Positif	0	0	2
		Negatif	**Netral**	**Positif**
		Prediction		

Confusion Matriks For Category "Process"			
Actual	**Negatif**	2	3	5
	Netral	1	6	0
	Positif	2	3	3
		Negatif	**Netral**	**Positif**
		Prediction		

Confusion Matriks For Category "Physical Evidence"			
Actual	**Negatif**	0	2	3
	Netral	0	20	6
	Positif	0	5	7
		Negatif	**Netral**	**Positif**
		Prediction		

Based on the classification results in the provided Confusion Matrix, it can be concluded that Mixue receives predominantly positive sentiment, especially in the "Product" category, with 251 True Positive classifications. This indicates tweets expressing positive sentiment regarding Mixue products. However, there are indications of negative sentiment in specific categories:

- In the "Product" category, there are 43 True Negative classifications, indicating tweets expressing negative sentiment about Mixue products. and there are 50 instances where the Negative class was predicted, but it should have been classified as Positive (False Negative)

- In the "Promotion" category, there is 1 True Negative classification, indicating tweets expressing negative sentiment regarding promotions.

- In the "Place" category, there are 31 True Negative classifications, suggesting tweets expressing negative sentiment about Mixue's location.

True Negative (TN): Data that are correctly predicted as the Negative class.

False Negative (FN): Data that are incorrectly predicted as the Negative class when they should have been classified as Positive.

Table 7. 7P Sentimen Label

Label	Negatif	Netral	Positif	Negatif	Netral	Positif
LABEL 7P				LABEL 7P (%)		
Product	605	1630	1860	15%	40%	45%
Price	17	57	62	0%	1%	2%
Promotion	82	293	228	2%	7%	6%
People	5	9	15	0,1%	0,2%	0,4%
Place	328	599	548	8%	15%	13%
Process	36	71	58	1%	2%	1%
Physical Evidence	40	105	97	1%	3%	2%
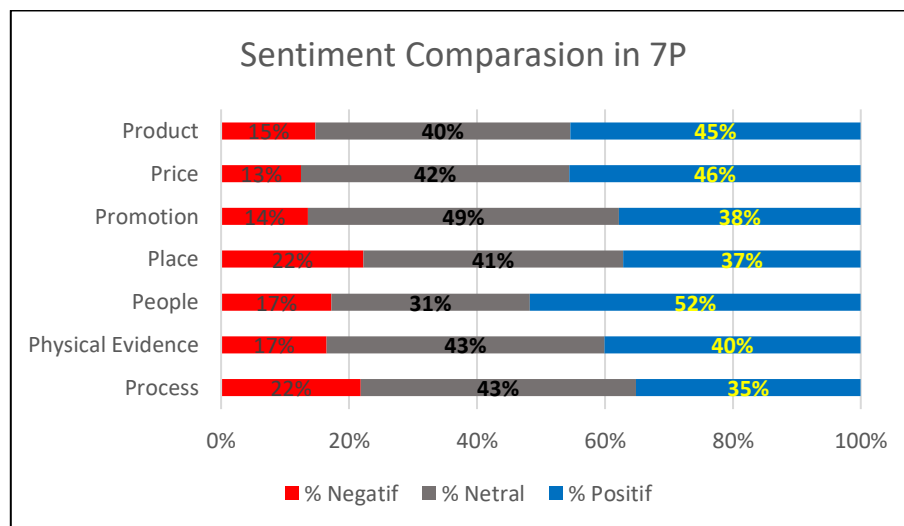
Picture 7. Sentiment Comparison in 7P

Product

There's a combination of positive, negative, and neutral sentiments regarding Mixue products (Picture 7). The product aspect garnered a positive sentiment of 45% (1860 tweets are positive sentiment from total tweet about product category), where the positive sentiment reflects consumers' joy and enthusiasm regarding the halal certification of Mixue products. The introduction of Mixue in Indonesia and obtaining the MUI halal certificate were highlighted as positive aspects. Consumers also showed appreciation for Mixue products, especially the Ice Cream product, due to its delicious and distinctive taste. However, there are also negative sentiments concerning Mixue's flavor variety and menu, where some individuals felt there was a lack of diversity and issues with menu names. Additionally, there were comments indicating indifference towards the halal status of the products. Apart from positive and negative sentiments, there were also neutral sentiments related to questions, menu recommendations, and information exchange among users. Some users expressed their desire to try Mixue or recommended their favorite menu items. Overall, despite some negative sentiments, the predominant positive

sentiment indicates a high interest and enthusiasm for Mixue products after obtaining the MUI halal certification. This sentiment analysis provides insights for readers regarding consumer responses and perceptions of Mixue products.

link	author	description
https://twitter.com/lppom_mui/statuses / 1626439158297243648	lppom_mui	#sobatlppom, setelah melalui pemeriksaan yang ketat dari LPPOM MUI, kini seluruh outlet Mixue (PT. Zhisheing Pacific Trading) telah bersertifikat halal loh.... cekidot !!. #mixue #viral #news #update #sertifikathalal #lph #lppommui #bpjph #halalindonesia #kamuharustau https://t.co/P64emIeVcS
https://twitter.com/connxid/statuses/ 1626521252671426560	connxid	Majelis Ulama Indonesia (MUI) resmi menerbitkan ketetapan halal untuk produk es krim Mixue. Keputusan ini dikeluarkan setelah Komisi Fatwa melaksanakan sidang produk halal pada Rabu, 15 Februari 2023. https://t.co/zRwjBv8giq
https://twitter.com/ajengcute16__/status es/ 1626234304048291842	ajengcute16_ _	MUI Tetapkan Fatwa Halal untuk Mixue Indonesia, Sudah Diajukan Sejak 2021 https://t.co/ucHQjelfBD

Price

Overall, sentiment towards the price indicates a positive sentiment of 46%, with only 13% expressing negative sentiment. Various evaluations regarding Mixue's price are as follows: Positive Sentiment: Some data reflected positive sentiments regarding Mixue's price. Some comments indicated that Mixue's price is affordable, cheap, discounted, and provides good value for the money spent. Some people were also delighted to avail Mixue discounts. Neutral Sentiment: Some data had a neutral sentiment regarding Mixue's price. Some comments only mentioned Mixue's price without expressing strong opinions, either positive or negative. For example: "I'll pay using Mixue," "I'll follow back, I'll pay using Mixue," "I pay with Mixue, right." The majority of sentiments regarding Mixue's price are positive, with some negative and neutral sentiments. Mixue's price is considered affordable and offers good value by some, although there are complaints about the perceived high price by some individuals.

link	author	description
https://twitter.com /intannurftn/statuses/1626586865095827458	intannurftn	Mixue tu bener bener porsi banyak harga murce nangis 🫰
https://twitter.com /crestcendo/statuses/1623830255512457216	crestcendo	Loh memang harga mixue semurah ini? https://t.co/rAOkVJX0J o
https://twitter.com /nurfajarwati28/statuses/16250810351753871 37	nurfajarwati2 8	bakalan jd eskrim favorite, selain harganya yg murah, juga deket rumah ♥ luvvv bgt dah pokoknya sama mixue https://t.co/H7zUxLXd0 4

Promotion

Based on the provided sentiment data, promotion received a positive sentiment of 38%, while 9% were neutral. Several conclusions regarding tweet sentiments about the promotion aspect are as follows: Positive Sentiment: Some users welcomed Mixue's promotions with enthusiasm and were delighted to see the cute Mixue mascot. They expressed happiness and excitement about these promotions. Negative Sentiment: Though fewer in number, some users expressed negative sentiments about Mixue's promotions. They felt there were too many promotions or that they did not align with the brand they knew. Some users might have been less satisfied with these promotions. Neutral Sentiment: Most users shared information about Mixue's promotions without expressing strong positive or negative sentiments. They updated about the promotions but didn't specifically express their feelings or opinions about them. Responses to Mixue's promotions varied. While most responses were neutral or positive, there were negative responses that need attention. Companies or marketing teams can use these insights to understand user sentiments about promotions and adjust their promotion strategies in the future.

link	author	description
https://twitter.com / Soxe/statuses/1626 170538644369409	Soxe	@wishikey Badut mixue manis ya kalo senyum
https://twitter.com / hesti_rya/statuses/ 162537596604137062 5	hesti_rya	@besokyuk mixue mana mana wes kan ada sing promo valentine itu loohh
https://twitter.com / arrameowmeow/st atuses/16264414200 38115329	arrameowm eow	Mood bgt pengen cosplay jd maskot mixue, tersenyum dan menggemaskan

https://twitter.com/yesdigital__/statuses/1623604248562012161	yesdigital__	Banyaknya gerai Mixue di Indonesia berhasil mengundang perhatian warganet. Mixue-isasi adalah fenomena yang menarik dalam dunia marketing karena perusahaan tersebut berhasil menerapkan konsep-konsep marketing strategy dengan tepat. Disini mimin mau kasih tau Strategi Mixue nih! https://t.co/vg8Jh6BPgC
https://twitter.com/ujuvng/statuses/1625384410723000321	ujuvng	Marketingnya keren banget si mixue https://t.co/qqMpEWDiea

Place

Based on the sentiment analysis, positive sentiment towards the place aspect is at 37%, with the following conclusions: Positive Sentiment: Most comments expressed excitement and enthusiasm for the opening of new Mixue outlets. Some comments stated that Mixue outlets are crowded and nice. There were comments expressing satisfaction with Mixue products. Negative Sentiment: Some comments mentioned difficulty finding Mixue outlets or disappointment with the outlet's location. Neutral Sentiment: Some comments did not show a clear sentiment or were neutral about Mixue outlets. Most comments show positive sentiment towards Mixue outlets, with many users hoping for Mixue to open outlets in their areas. However, there are complaints about empty outlets or difficulties finding Mixue outlets.

link	author	description
https://twitter.com/IDNTimes/statuses/1623594606792417280	IDNTimes	Ada Gambar Ruko Es Krim di Unggahan Jokowi, Publik Heboh Sebut Mixue https://t.co/flEI7OMLeU
https://twitter.com/hweppyy/statuses/1616610935451549697	hweppyy	@convomfs Bandung emg banyk bgt gerai mixue😜
https://twitter.com/nihthorik/statuses/1616330346903252992	nihthorik	Tolong dong mixue buka cabang deket gate 4 atau gate 3 telyu, jauh banget kalau harus ke pesbal buat beli mixue
https://twitter.com/ariesthekid24/statuses/1624370038210957313	ariesthekid24	nyarii gerai mixue di cianjur susah

Process

Based on sentiment analysis in the Process aspect with a 35% positive point, the following conclusions were drawn: Positive Sentiment: The majority of data had a positive sentiment towards Mixue.

- Easy and Fast Ordering Process. Many netizens expressed that the ordering process at Mixue stores is easy and fast. They didn't have to wait long to order and pay for ice cream.

- Convenient Payment Process. Netizens also appreciated the convenience of paying at Mixue stores. They can pay using various methods, such as cash, debit cards, or credit cards

Negative Sentiment: There were some sentences indicating negative sentiment about queuing at Mixue. Examples of sentences expressing negative sentiment include

- Long and disorganized queues. Netizens complain that the queues at Mixue stores are often disorganized, making it difficult for them to queue.

- Long waiting times. Netizens complain that the waiting time to buy Mixue ice cream is very long, even for hours. This makes them reluctant to queue.

- Inefficient queuing process. Netizens complain that the queuing process at Mixue stores is inefficient, making them feel bored and uncomfortable.

link	author	description
https://twitter.com/FOODFESS2/statuses/1624625829404893184	FOODFESS2	Bukan maen ya fess ya antri beli mixue di siang hari ramenya, kota kalian gimana? https://t.co/dVEgQFe8Os
https://twitter.com/Lrol__Nai/statuses/1616805474988617728	Lrol__Nai	@kimkailatte_ Iya betul, mixue itu malesinnya ngantri
https://twitter.com/angelicxties/statuses/1623995504773435392	angelicxties	Ngantri sih kak, penuh mulu. Lebih lama nungguin pesanan daripada ngabisin mixue nya 😊
https://twitter.com/engkauu_/statuses/1616823197101625344	engkauu_	Beli mixue gampang bayarnya pakai qris bisa

The majority of users have positive sentiments towards Mixue, although some express negative sentiments about the queuing experience. However, overall, Mixue still receives positive responses from users.

Physical Evidence

Based on the sentiment analysis, 40% positive sentiment was identified. Consequently, several conclusions can be made:

1. In the Physical Evidence category, the majority of sentiments were neutral, followed by positive and negative sentiments.
2. Some positive comments were related to Mixue drinks, mentioning their deliciousness, freshness, and hydrating qualities.
3. Some negative comments were related to people disliking the taste of Mixue drinks.
4. Neutral comments were also quite dominant, indicating that most opinions about Mixue didn't have strong sentiments.
5. The Mixue logo also appeared in some comments but didn't significantly affect sentiment.
6. Some comments touched on the Mixue logo containing a halal message, but it didn't directly impact sentiment.
7. There were no extremely negative or positive sentiments in this analysis. Most comments were neutral or had sentiments that weren't too strong. The general conclusion from this analysis is

that most opinions about Mixue in the Physical Evidence category tend to be neutral, with some positive and negative opinions emerging. The Mixue logo didn't significantly impact sentiment in the analyzed comments.

link	author	description
https://twitter.com/kvusanali/statuses/1624719730237120512	kvusanali	tersenyum spti logo mixue https://t.co/QSQtYi19Hb
https://twitter.com/hrtrvs_/statuses/1626309181136601088	hrtrvs_	Gak pernah beli Mixue bukan karena gak punya duit. Tapi, belom ada logo halalnya. Dan karena katanya udah ada ketetapan halal dari MUI, mari kita beli!
https://twitter.com/c1010lie/statuses/1626578529050849280	c1010lie	BOTOL MINUM MIXUE BOTOL MINUM SNOW KING VIRAL LUCU https://t.co/GvqENhsmVi https://t.co/8LUyD4LGKg
https://twitter.com/keiiiiiix/statuses/1627257616299872256	keiiiiiix	mnurut gw mixue eskrim nya kemanisan sih tp kalo buat minuman nya boleh lah prove https://t.co/32OeDIdcoA
https://twitter.com/clumsywow/statuses/1627060077483134981	clumsywow	Dan americano coffee nya mixue kan masih tergolong manis banget ya, kemaren lusa gue minum itu… PAS SAMPE RUMAH GUE DEG DEG AN PARAH ANJIR

People

The sentiment data included several comments about Mixue employees and outlets. Here are the conclusions drawn from this sentiment data:

1. Some positive comments highlighted the prompt service, recruitment of new employees, and positive impressions of Mixue employees.
2. Some negative comments referred to drama among Mixue employees and issues with delivering orders through food delivery services.
3. There were several neutral comments that didn't express clear sentiments regarding Mixue employees or outlets. Overall, the majority of sentiments in the data were neutral or positive towards Mixue employees, although some negative comments reflected less satisfactory experiences.

link	author	description
https://twitter.com/baeby_1234/statuses/1624024404069089282	baeby_1234	2x beli mixue tapi ngecawain banget pelayanan nya 🙄 nanya pake nada tinggi,judesnya minta ampun juga wkwkw https://t.co/8fzF5UKyTC
https://twitter.com/mousse_twst/statuses/1625867029852061703	mousse_twst	Mixue salah kasih orderan gue terus kan sempet berantem antar karyawan sama g*jek drivr gue… terus eh beneran gue ditelpon bosnya buat refund sama minta maaf karena

		karyawannya ga sopan etc shock seketika… 😭
https://twitter.com/__Jfff777/ statuses/1626482039582232577	__Jfff777	Kayaknya hari ini petugas di gerai Mixue lagi sibuk ya 😄
https://twitter.com/ngeluhdikitt/ statuses/1624033481297891328	ngeluhdikitt	pelayanan mixue rivai top mntp bestt😍😍

CONCLUSION

Mixue products received predominantly positive sentiment after obtaining the MUI halal certification base (https://halalmui.org/) (Detik.com, 2023) and Consumers showed joy and enthusiasm for the presence of halal Mixue products in the market. Some negative sentiments emerged regarding flavor variety and menu names at Mixue, where some criticized these shortcomings. The majority of sentiments regarding Mixue's pricing are positive, with some negative sentiments considering Mixue's prices to be high. Responses to Mixue's promotions varied, with mostly neutral or positive responses, but there were also some negative responses regarding excessive promotions or brand alignment. Positive sentiments dominated comments related to the place aspect, particularly Mixue outlets, with users expressing delight at the opening of new outlets and satisfaction with products. Most comments about Mixue's processes were positive, with some negative sentiments related to long queues. Overall, users still provided positive responses to Mixue. Neutral sentiments dominated comments related to Mixue's Physical Evidence, with some positive comments about drink taste and some negative comments regarding flavor preferences. The Mixue logo didn't significantly influence sentiment. Sentiments related to Mixue employees tended to be neutral or positive, although some negative comments touched on employee drama or delivery issues. Suggestions for future research include further exploring consumer preferences for desired flavor variations, conducting price comparison studies with similar products in the market, evaluating the effectiveness and relevance of Mixue's promotional strategies, exploring factors influencing consumers' search for Mixue outlets, and identifying efforts to enhance customer experiences and address issues related to employees and delivery.

REFERENCE

Amir Karamoy. (2013). *Waralaba - Jalur Bebas Hambatan Menjadi Pengusaha Sukses*. Gramedia Pustaka Utama.

Andrian, B., Simanungkalit, T., Budi, I., & Wicaksono, A. F. (2022). Sentiment Analysis on Customer Satisfaction of Digital Banking in Indonesia. *International Journal of Advanced Computer Science and Applications*, *13*(3), 466–473. https://doi.org/10.14569/IJACSA.2022.0130356

Ayup-Gonzalez, J., Calderon-Monge, E., & Carrilero-Castillo, A. (2019). The effects of management and environmental factors on franchise continuity. *Economic Research-Ekonomska Istrazivanja* , *32*(1), 982–997. https://doi.org/10.1080/1331677X.2019.1592008

Berlin, I., Is, T. U., Patterns, P., Sagan, C., Data, B., Data, T., & Analysis, S. (2022). *ANALYSIS OF BRAND POPULARITY USING BIG DATA AND. 21*(4), 558–566.

Birjali, M., Kasri, M., & Beni-Hssane, A. (2021). A comprehensive survey on sentiment analysis: Approaches, challenges and trends. *Knowledge-Based Systems*, *226*, 107134. https://doi.org/10.1016/j.knosys.2021.107134

Bisnis.com. (2022). Bisnis Waralaba Diproyeksi Naik Lebih dari 5 Persen Tahun Depan. *Bisnis.Com.*

Detik.com. (2023). Majelis Ulama Indonesia Nyatakan Es Krim Mixue Halal. *17 Feb 2023.*

Dheanis, K., Salsabila, A., Trianasari, N., Artikel, R., Kunci, K., & Konsumen, P. (2021). Jurnal Teknologi dan Manajemen Informatika Analisis Persepsi Produk Kosmetik Menggunakan Metode Sentiment Analysis Dan Topic Modeling (Studi Kasus: Laneige Water Sleeping Mask) Info Artikel ABSTRAK. *Jurnal Teknologi Dan Manajemen Informatika*, *7*(1), 1–9.

Feldman, R., & Sanger, J. (2006). The Text Mining Handbook. In *The Text Mining Handbook*. https://doi.org/10.1017/cbo9780511546914

Jumari, I. F., & Astutiningsih, S. E. (2022). Implementation of 9P Marketing Mix Strategy in Order to Increase Sales Volume in Abdul Ghoffar Rejotangan Tulungagung's Koi Fish Farming Business. *Ilomata International Journal of Management*, *3*(2), 203–221. https://doi.org/10.52728/ijjm.v3i2.447

Kotler, P., & Armstrong, G. (2008). *Prinsip – Prinsip Pemasaran. Edisi 12, Jilid 1*. Erlangga.

Kotler, P., & Kevin Keller Lane. (2009). *Manajemen Pemasaran* (Edisi 13). Erlangga.

Lee, E., Kim, J. H., & Rhee, C. S. (2021). Effects of marketing decisions on brand equity and franchise performance. *Sustainability (Switzerland)*, *13*(6). https://doi.org/10.3390/su13063391

Lovelock, C. H., & Wirtz, J. (2011). *Services Marketing: People, Technology, Strategy*. Pearson.

Martínez-Navalón, J. G., Gelashvili, V., & Saura, J. R. (2020). The impact of environmental social media publications on user satisfaction with and trust in tourism businesses. *International Journal of Environmental Research and Public Health*, *17*(15), 1–17. https://doi.org/10.3390/ijerph17155417

Rahman, N. A., Idrus, S. D., & Adam, N. L. (2022). Classification of customer feedbacks using sentiment analysis towards mobile banking applications. *IAES International Journal of Artificial Intelligence*, *11*(4), 1579–1587. https://doi.org/10.11591/ijai.v11.i4.pp1579-1587

Subawa, N. S., Widhiasthini, N. W., & Permatasari, N. P. I. (2020). Local brand franchise competition in the disruption era. *Int. J. Productivity and Quality Management*, *31*(4), 445–460.

Sulastomo, H., Gibran, K., Maryansyah, E., & Tegar, A. (2022). Analisis Sentimen Pada Twitter @Ovo_Id dengan Metode Support Vectore Machine (SVM). *Jurnal Sains Komputer & Informatika*, *6*(2), 1050–1056.

Tjiptono, F. (2019). *Pemasaran Jasa - Prinsip, Penerapan, dan Penelitian*. Penerbit Andi.

Amir Karamoy. (2013). *Waralaba - Jalur Bebas Hambatan Menjadi Pengusaha Sukses*. Gramedia Pustaka Utama.

Andrian, B., Simanungkalit, T., Budi, I., & Wicaksono, A. F. (2022). Sentiment Analysis on Customer Satisfaction of Digital Banking in Indonesia. *International Journal of Advanced Computer Science and Applications*, *13*(3), 466–473. https://doi.org/10.14569/IJACSA.2022.0130356

Ayup-Gonzalez, J., Calderon-Monge, E., & Carrilero-Castillo, A. (2019). The effects of management and environmental factors on franchise continuity. *Economic Research-Ekonomska Istrazivanja* , *32*(1), 982–997. https://doi.org/10.1080/1331677X.2019.1592008

Berlin, I., Is, T. U., Patterns, P., Sagan, C., Data, B., Data, T., & Analysis, S. (2022). *ANALYSIS OF BRAND POPULARITY USING BIG DATA AND. 21*(4), 558–566.

Birjali, M., Kasri, M., & Beni-Hssane, A. (2021). A comprehensive survey on sentiment analysis: Approaches, challenges and trends. *Knowledge-Based Systems*, *226*, 107134. https://doi.org/10.1016/j.knosys.2021.107134

Bisnis.com. (2022). Bisnis Waralaba Diproyeksi Naik Lebih dari 5 Persen Tahun Depan. *Bisnis.Com*.

Detik.com. (2023). Majelis Ulama Indonesia Nyatakan Es Krim Mixue Halal. *17 Feb 2023*.

Dheanis, K., Salsabila, A., Trianasari, N., Artikel, R., Kunci, K., & Konsumen, P. (2021). Jurnal Teknologi dan Manajemen Informatika Analisis Persepsi Produk Kosmetik Menggunakan Metode Sentiment Analysis Dan Topic Modeling (Studi Kasus: Laneige Water Sleeping Mask) Info Artikel ABSTRAK. *Jurnal Teknologi Dan Manajemen Informatika*, *7*(1), 1–9.

Feldman, R., & Sanger, J. (2006). The Text Mining Handbook. In *The Text Mining Handbook*. https://doi.org/10.1017/cbo9780511546914

Jumari, I. F., & Astutiningsih, S. E. (2022). Implementation of 9P Marketing Mix Strategy in Order to Increase Sales Volume in Abdul Ghoffar Rejotangan Tulungagung's Koi Fish Farming Business. *Ilomata International Journal of Management*, *3*(2), 203–221. https://doi.org/10.52728/ijjm.v3i2.447

Kotler, P., & Armstrong, G. (2008). *Prinsip – Prinsip Pemasaran. Edisi 12, Jilid 1*. Erlangga.

Kotler, P., & Kevin Keller Lane. (2009). *Manajemen Pemasaran* (Edisi 13). Erlangga.

Lee, E., Kim, J. H., & Rhee, C. S. (2021). Effects of marketing decisions on brand equity and franchise performance. *Sustainability (Switzerland)*, *13*(6). https://doi.org/10.3390/su13063391

Lovelock, C. H., & Wirtz, J. (2011). *Services Marketing: People, Technology, Strategy*. Pearson.

Martínez-Navalón, J. G., Gelashvili, V., & Saura, J. R. (2020). The impact of environmental social media publications on user satisfaction with and trust in tourism businesses. *International Journal of Environmental Research and Public Health*, *17*(15), 1–17. https://doi.org/10.3390/ijerph17155417

Rahman, N. A., Idrus, S. D., & Adam, N. L. (2022). Classification of customer feedbacks using sentiment analysis towards mobile banking applications. *IAES International Journal of Artificial Intelligence*, *11*(4), 1579–1587. https://doi.org/10.11591/ijai.v11.i4.pp1579-1587

Subawa, N. S., Widhiasthini, N. W., & Permatasari, N. P. I. (2020). Local brand franchise competition in the disruption era. *Int. J. Productivity and Quality Management*, *31*(4), 445–460.

Sulastomo, H., Gibran, K., Maryansyah, E., & Tegar, A. (2022). Analisis Sentimen Pada Twitter @Ovo_Id dengan Metode Support Vectore Machine (SVM). *Jurnal Sains Komputer & Informatika*, *6*(2), 1050–1056.

Tjiptono, F. (2019). *Pemasaran Jasa - Prinsip, Penerapan, dan Penelitian*. Penerbit Andi.