

Netizen Sentiment and Innovative Attributes in Halal Skincare Markets

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ABSTRAK

Netizens can provide valuable insights into consumer responses to innovative attributes in halal skincare product lines, but it is undeniable that emerging sentiments about beauty standards can be detrimental to halal skincare products. This study evaluates netizens' responses to innovative attributes in halal skincare products and examines the moderating effect of beauty standards. The research method used includes sentiment analysis, systematic literature review, and SEM-PLS by collecting data via Twitter and the Orange Data Mining application. The results of the study show that the innovative attributes variable has a positive and significant influence on the behavior of netizens in halal skincare. Netizens show a positive response to innovation in halal skincare products. However, the moderating effect of beauty standards shows that beauty standards have a negative influence on the relationship between innovative attributes and netizen behavior. This indicates that the level of beauty standards held by netizens can influence the way they respond to innovations in halal skincare products. These findings have practical implications for halal skincare companies in designing effective marketing strategies. Companies need to consider the importance of innovation in their products while understanding the influence and expectations of consumer beauty standards. By strengthening innovation by existing beauty standards, companies can build a positive image, increase consumer satisfaction, and maintain a competitive advantage in the halal skincare market.



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INTRODUCTION

In recent years, the skincare product industry has witnessed a significant increase in the demand for Halal products (Isa et al., 2023). This demand is driven by the increasing need for Muslim consumers to have skincare products that comply with the halal principles of their religion. Skincare companies have responded to this demand by launching halal skincare product lines that offer halal and high quality (Halal Cosmetics Expo, 2020; Indonesia Sharia Economic Festival, 2022).

However, launching halal skincare products is not only about fulfilling religious halal requirements (Sugibayashi et al., 2019). These products must also remain relevant and innovative to compete with other skincare products in an increasingly competitive market. Therefore, it is important to understand how netizens respond to innovative attributes in halal skincare product lines.

Netizens, or the Internet community, have a significant role to play in shaping consumer opinions and preferences (Hennig-Thurau et al., 2004; Liao et al., 2021). They often use social media, online forums, and other platforms to share experiences, provide reviews, and influence the buying decisions of others. Therefore, understanding netizens' responses to innovative attributes in halal skincare products can provide valuable insights for companies in improving their marketing and product development strategies (Xiao et al., 2019).

Although netizens can provide valuable insights into consumer responses to innovative attributes in halal skincare product lines (Aufi, 2021), it is undeniable that negative phenomena can also arise in this process. Such as the emergence of negative comments or sentiments that are detrimental to halal skincare products. Netizens often comment negatively on innovative attributes in halal skincare product lines. They criticize the product because they feel that the innovative attributes do not meet their expectations or do not deliver the promised benefits. For example, some netizens consider that the use of innovative ingredients in halal skincare products is ineffective or even has the potential to cause skin irritation.

Some netizens also have an attitude that rejects innovation in the line of halal skincare products. They assume that traditional products are better than products with innovative attributes (Divianjella et al., 2020; University Malaya, Malaysia et al., 2016). They doubt the benefits or safety of these innovative attributes. For example, one netizen argued that the use of advanced technology in halal skincare products is unnecessary and just an excuse for companies to increase product prices.

In addition, halal skincare products with innovative attributes give rise to ethical controversies among netizens (Faculty of Arts and Social Science, Universiti Tunku Abdul Rahman, 31900 Perak, Malaysia et al., 2016). Some netizens have opposing views on the use of certain ingredients or technologies in halal skincare products. For example, some netizens oppose the use of ingredients derived from animals or think that certain technologies involve unethical practices.

There is a fact that in studying netizens' responses, falsification or the spread of false information appears. Some netizens deliberately spread misinformation or criticize halal skincare products on inaccurate grounds. This can result in a bad reputation for the product and affect consumer perceptions (De Regt et al., 2019). Because in the online environment, there are individuals who deliberately spread closed or provocative comments without constructive purposes. They are often known as trolls or haters. In assessing netizens' response to halal skincare products, this phenomenon can include comments insulting religion, doubting the halalness of products, or spreading negatively permissible content. For example, a troll spreading disdainful comments or affirming the authenticity of halal certification on halal skincare products creates distrust among netizens and discourages them from using the product.

There is also the phenomenon of spamming, namely sending messages repeatedly that are irrelevant or unwanted, which can also occur in the evaluation of netizen responses (Serna, 2022). Some accounts or entities carry out spamming with the aim of influencing netizens' perceptions of products or creating chaos in discussions. An account submits repeated highly negative reviews of halal skincare products for no apparent reason, creating the impression that the product is bad even if it is not backed up by any real facts or experience. Netizens can also engage in cyberbullying behavior against brands or individuals regarding halal skincare products (Zaki et al., 2021; Zukhrufani & Zakiy, 2019). This involves the use of protective, threatening, or harassing comments that can negatively impact product reputation and intimidate other users. A netizen attacked a halal skincare brand with comments that protected religious beliefs, sparking online persecution of the brand and causing fear or doubt among netizens who saw the comments.

Past research studies and scientific findings regarding evaluating consumer responses to innovative attributes in halal skincare products have provided valuable insights into understanding consumer preferences and perceptions. Some research reveals that consumers have a positive attitude towards innovative attributes in halal skincare products (Abd Rahman et al., 2015; Anubha, 2023; Isa et al., 2023; Khan et al., 2021; Letsoin & Riorini, 2023; Sriminarti & Nora, 2018). They enthusiastically welcome innovations such as the use of natural ingredients, new technologies, and production processes that are guaranteed to be halal (Annisa, 2023). Consumers also value this innovative attribute as a factor influencing their purchasing decisions (Hanaysha, 2018; Ho & Wu, 2011; Octavia et al., 2021).

Research by Setiani et al. (2022) shows that consumers have a positive perception of innovation in halal cosmetic products. They tend to associate innovation with better quality, greater benefits, and a better user experience (Lee & Trimi, 2018; Rajapathirana & Hui, 2018). This study also found that innovative attributes such as the use of advanced technology and discoveries in natural ingredients have a positive influence on consumer interest in using halal skincare products (Hussain, 2022; Khan et al., 2021; Ngah et al., 2022; Sohail et al., 2022).

Research by Mahliza (2022) and Mustaqim & Mulyana (2023) shows that halal certification has a significant influence on consumer interest and purchase intentions for halal skincare products. Consumers tend to trust and feel comfortable using products that are guaranteed to be halal (Juliana et al., 2022; Mustaqim & Fazriani, 2023; Yusuf et al., 2019). In addition, innovative attributes such as unique formulations, attractive packaging, and product excellence also contribute to consumer interest (Guiné et al., 2020).

Research by Prakasita & Wardana (2022) highlights that consumers, especially young Muslim women, have a positive attitude towards innovation in halal skincare products (Clarita et al., 2020). They expect products that not only meet religious halal requirements, but also offer innovative attributes such as purity of ingredients, effectiveness in skincare, and ease of use (Divianjella et al., 2020;

Sugibayashi et al., 2019). In conclusion, innovative attributes are considered important in attracting consumer interest and trust in halal skincare products.

These studies provide evidence that consumers respond positively to innovative attributes in halal skincare products. These findings indicate that innovation can be a significant factor in influencing consumer preferences and purchasing decisions. However, it is undeniable that negative phenomena arise in this process through negative comments or adverse sentiments towards halal skincare products by netizens.

Thus, several elements of novelty can be identified related to this research. This study focuses on innovative attributes in the halal skincare product line. It shows the novelty in exploring how consumers respond to innovations in Halal skincare products and how these attributes affect their preferences and purchase decisions and specifically highlights netizens' responses to innovative attributes in Halal skincare products. In the digital era and with the strong presence of social media, netizens have a significant role in shaping consumer opinions and preferences. Focusing on netizen responses provides a unique and relevant perspective in understanding how innovations in halal skincare product lines are received and perceived by consumers.

Through a focus on innovative attributes, an emphasis on netizen responses, the use of sentiment analysis, and a combined analysis approach, this research makes a new contribution to the understanding of consumer preferences and perceptions of halal skincare products and paves the way for the development of marketing strategies and product development that are more suitable with consumer needs and expectations.

As for the development of collaborative research and innovative ideas, this research uses a comprehensive and innovative approach to explore netizens' responses to innovative attributes in halal skincare product lines. First, the use of sentiment analysis with the Orange Data Mining 3.32 application provides a powerful approach to understanding the sentiments and opinions of netizens about halal skincare products. Sentiment analysis allows researchers to extract positive, negative, and neutral sentiments from text data collected from various online sources, such as social media, forums, or product reviews. It provides deep insight into how netizens respond to innovative attributes in halal skincare product lines.

Second, the systematic literature review approach using Harzing's Publish or Perish (PoP) and VOSviewer provides a solid foundation for investigating previous research on consumer responses to halal skincare products. Harzing's PoP enables researchers to collect relevant scientific articles and analyze their quality and impact. Meanwhile, VOSviewer helps in visualizing relevant research review networks and mapping the relationships between authors, research subjects, and existing findings.

Lastly, the parallel equation structural analysis (SEM-PLS) approach using WarpPLS 8.0 provides a powerful statistical analysis framework for modeling and analyzing the relationships between variables in research. By using SEM-PLS, researchers can evaluate the effect of innovative attributes in halal skincare product lines on netizen responses. This allows researchers to test hypotheses, measure the strength of relationships between variables, and provide a deeper understanding of the factors influencing netizen responses.

By combining sentiment analysis with the Orange Data Mining 3.32 application, systematic literature review with Harzing's PoP and VOSviewer, and SEM-PLS with WarpPLS 8.0, this research offers a holistic and innovative approach in exploring netizen responses to innovative attributes in halal skincare product lines. This approach can provide in-depth and comprehensive insights into consumer preferences and perceptions of these products, as well as assist skincare companies in developing effective marketing strategies and presenting products that are more in line with consumer needs and expectations.

In research evaluating netizen responses to innovative attributes in halal skincare product lines, it is important to pay attention to and address negative phenomena like these. In reporting research results, ignoring irrelevant or demeaning comments and taking precautions against spamming and cyberbullying can help ensure the validity and accuracy of the data collected.

In this study, we aim to evaluate netizens' responses to innovative attributes in a halal skincare product line. We will analyze various social media platforms and Twitter online forums to collect relevant data, including reviews, comments, and discussions related to this product. We will also use text analysis techniques and data mining methods to identify emerging patterns and sentiments in netizen responses.

The results of this study are expected to provide in-depth insight into consumer preferences and perceptions of innovative attributes in the halal skincare product line. Our findings can help skincare companies design and develop products that better suit consumers' needs and expectations. In addition, the results of this study can also contribute to scientific research on innovation in the halal skincare product industry.

Thus, this research has important relevance and significance in understanding the market dynamics of halal skincare products. Netizens' responses to the innovative attributes in the halal skincare product line can be a valuable guideline for skincare companies in developing effective marketing strategies and presenting products that are more attractive to Muslim consumers who are increasingly aware of halal and the quality of the products they use.

LITERATURE REVIEW

In the context of this study, the grand theory that is used as a reference is the technology acceptance theory. This theory provides a framework for understanding how individuals respond to and accept technological innovations, such as innovative attributes in halal skincare product lines. This theory can help explain the factors that influence netizens in accepting and using products with innovative attributes.

The middle theory that is relevant in this study can involve the concept of religious identity or pride of identity (identity theory). Middle theory can help explain how a person's religious identity can influence their response to innovative attributes in halal skincare products. Middle theory can also be used to understand how identity and religious values can shape consumer preferences and purchasing decisions.

The relevant, applied theory is the theory of marketing and consumer behavior. These theories can help explain the factors that influence netizens' responses to innovative attributes in halal skincare product lines, such as perceived quality, perceived benefits, and social influence. Marketing theories and consumer behavior can also be used to design effective marketing strategies in promoting halal skincare products to relevant consumers.

Technology Acceptance Model Theory

Technology Acceptance Theory is a framework used to understand the factors that influence individual acceptance and use of technology (Al-Emran & Shaalan, 2021). This theory was developed by Fred Davis in 1989 and has become one of the most widely used theories in studying the behavior of technology use. According to Technology Acceptance Theory, technology acceptance depends on two main factors, namely the user's perception of the usefulness of technology and the user's perception of the ease of use of technology (Newcastle University, 2023).

Perceived Usefulness Refers to the extent to which individuals believe that using technology will improve their performance in achieving certain goals. Individuals tend to accept and use technology if they are useful in meeting needs and achieving desired results. In the context of this research, TAM can help in understanding how netizens perceive the usefulness of innovative attributes in halal skincare product lines. If netizens believe that these innovative attributes provide benefits and improve the quality of halal skincare products, they may be more accepting and interested in using these products. For example, if innovative attributes such as natural ingredients or new technologies are associated with better skin health benefits, netizens may be more inclined to accept and use these halal skincare products (Davis, 1989).

Perceived Ease of Use Refers to the extent to which individuals believe that using technology is easy and uncomplicated. Individuals tend to be more receptive to technology if they are easy to use and do not require undue effort. TAM can also help in understanding how netizens perceive the ease of use of innovative attributes in halal skincare product lines. If netizens believe that using these innovative attributes is easy and uncomplicated, they may be more likely to accept and adopt these halal skincare products. For example, if innovative attributes such as practical packaging or intuitive applications make using the product easier, netizens may feel more comfortable and interested in using the product (Davis, 1989).

In addition, Technology Acceptance Theory also recognizes that external factors such as social factors and social influences can also influence technology acceptance (Hong & Yu, 2018; Taherdoost, 2018). For example, the opinions of others that an individual considers important (normative subjectivity) or pressure from co-workers (descriptive subjectivity) can influence technology

acceptance. Recipients of Technology Theory have been applied in various contexts and have assisted in understanding the behavior of technology use, including in the development and adoption of various types of technology, including software, mobile applications, websites, and information systems (Lai, 2017). This theory provides a useful framework for researchers and practitioners to understand why individuals accept or reject technology and how to promote successful technology adoption.

Identity Theory

Identity theory is a sociological framework used to understand how individuals develop and maintain their identity, and how identity influences their behavior and social interactions (Stets & Burke, 2000). This theory emphasizes the importance of identity in shaping individual thoughts, feelings, and actions (Simons, 2021). According to Identity Theory, individuals have various roles and identities that are connected. Identity is formed through social interaction and is based on the social roles played by individuals in various contexts, such as family, work, and society. Identity can also be associated with personal attributes such as gender, ethnicity, religion, or certain preferences. Some of the key concepts in identity theory include personal identity, social identity, and roles and commitments (Stryker & Burke, 2000).

Personal Identity refers to the way individuals describe and identify themselves as unique individuals with certain personal characteristics and attributes. Personal identity can include aspects such as personality, interests, and personal preferences (Nario-Redmond et al., 2004). In this study, Identity Theory can help understand how individual religious identity influences netizens' responses to innovative attributes in halal skincare products. Individual religious identity involves their religious beliefs, values, and practices. Religious identity can influence netizens' preferences, perceptions, and purchasing decisions regarding halal skincare products that are by the halal principles of their religion.

Social Identity Relates to how individuals identify themselves in certain social groups. This can involve identity-based on factors such as religion, ethnicity, race, or other social group. Social identity can affect individuals' perceptions of themselves and influence their behavior in social interactions (Harwood, 2020). Identity theory proposes that an individual's social identity, including religious identity, influences the way individuals perceive the world and respond to it. The religious identity of netizens can influence their evaluation of innovative attributes in halal skincare products. This identity can shape netizens' views about product halalness, preferences for certain ingredients, and assessments of the benefits provided by innovative attributes.

Identity theory emphasizes the important role played by roles and commitments in shaping identity. Individuals play various social roles (for example, as family members, friends, or professionals) and have commitments associated with those roles. These roles and commitments form an important part of an individual's identity. Identity Theory is also a low pressure of social interaction in forming and maintaining identity. In the context of this research, netizens can be influenced by social views and norms in the groups they help as members (Stryker & Burke, 2000). Social interactions with other netizens who have similar religious identities can influence netizens' perceptions and responses to innovative attributes in halal skincare products.

Identity Theory can provide insight into how an individual's religious identity can influence their response to innovative attributes in a halal skincare product line. Individuals' religious identity can influence their preferences and purchasing decisions, as well as how they disguise innovative attributes in the context of their religious values and beliefs. By applying Identity Theory, Researchers can gain a better understanding of the role of individual identity in shaping their responses to innovative attributes in halal skincare product lines. This can provide valuable insights into designing marketing strategies that match consumers' preferences and values based on their identity.

Marketing Theory

Marketing Theory is a framework used to understand consumer behavior, purchasing decisions, and marketing strategies in a market context. Marketing Theory helps in understanding how a company can satisfy consumer needs and wants through developing, promoting, and selling products or services (Zhao et al., 2021).

Some of the key concepts in Marketing Theory include Market Segmentation. Marketing Theory teaches the importance of dividing the market into smaller groups with similar characteristics, needs, and preferences (Martin, 2011). In the context of this research, Marketing Theory can assist in understanding market segmentation related to halal skincare products, such as consumers who care about halal, prefer natural ingredients, or pay attention to skin health.

Marketing Theory considers effective pricing strategies to attract consumers and generate optimal revenue (Wu et al., 2022). In this study, Marketing Theory can assist in understanding how the price of halal skincare products that contain innovative attributes can influence netizens' perceived value and purchasing decisions. Then, Marketing Theory highlights the importance of effective promotional strategies in influencing consumer behavior and building brand awareness (Godey et al., 2016; Keller, 1993). In this study, Marketing Theory can assist in understanding how marketing communication strategies can be used to convey the innovative attributes of halal skincare products to netizens, build trust, and influence their responses.

Marketing Theory also studies consumer decision-making processes, including the factors that influence purchasing decisions, such as preference, price, and product quality (Roy, 2022). In this study, Marketing Theory can assist in understanding the factors that influence netizens' responses to innovative attributes in halal skincare products and how these factors influence their purchasing decisions.

By applying Marketing Theory, researchers can gain a better understanding of consumer behavior, purchasing decisions, and effective marketing strategies in the context of halal skincare products with innovative attributes (Irfany et al., 2023). Marketing Theory can assist in designing appropriate marketing strategies, identifying relevant market segments, communicating product values, and influencing netizens' responses to these products. In this study, Marketing Theory can be used to understand preferences, purchasing decisions, and consumer behavior regarding halal skincare products with innovative attributes. This research can provide netizens with a better understanding of how to market halal skincare products with innovative attributes by considering relevant marketing factors and understanding consumer behavior.

Consumer Behavior Theory

Consumer Behavior Theory is a framework used to understand consumer behavior, including decision-making processes, preferences, and responses to products or services (Ajzen, 2016). This theory involves the study of the factors that influence consumer behavior, including needs, motivations, perceptions, attitudes, and social influences (Ajzen, 1991, 2020).

Some of the key concepts in Consumer Behavior Theory include Needs and Motivation. Consumer Behavior Theory recognizes that consumers have different needs that drive them to buy and use certain products or services. These needs can be physiological, psychological, social, or personal. Motivation is an internal factor that drives individuals to achieve satisfaction of these needs through consumption actions (Peña-García et al., 2020).

Consumer Behavior Theory studies how consumers perceive and evaluate products or services. Consumers form their perceptions based on experience, information received, and product attributes that they observe. Assessment is carried out to determine the expected satisfaction and the extent to which the product or service meets consumer expectations (Sweeney & Soutar, 2001).

Attitude reflects an individual's affective evaluation of a product or service. Attitudes can be influenced by previous experience, information received, and social influences. Preference is an individual's preference for one product or service compared to another, which is based on their evaluation of and attitude toward the features and benefits of the product (Niosi, 2021).

Consumer Behavior Theory recognizes the role of social influence in shaping consumer behavior. This includes the influence of family, friends, group references, or influence from respected figures or celebrities (Shah & Asghar, 2023). Social influences can influence consumers' preferences, purchasing decisions, and responses to products or services (Zeugner-Roth et al., 2015).

In the context of this research, Consumer Behavior Theory can help understand how netizens respond to innovative attributes in halal skincare product lines and the factors that influence their purchasing decisions. This theory can be used to understand the needs, motivations, perceptions, attitudes, and social influences that affect netizens' responses to these products. By applying Consumer Behavior Theory, researchers can gain a better understanding of the factors that influence consumer behavior and identify effective marketing strategies to influence netizens' preferences and purchasing decisions regarding halal skincare products with innovative attributes.

METHODE

This type of research is a mixed method with sentiment analysis using the Orange Data Mining 3.32 application, systematic literature review using Harzing's Publish or Perish (PoP) and VOSviewer,

and SEM-PLS using WarpPLS 8.0, which includes a comprehensive and innovative approach to explore netizen responses to innovative attributes. in the line of halal skincare products.

The subjects of this research are netizens who are the target of the study regarding their responses to innovative attributes in halal skincare product lines. Netizens are individuals who are active online, including users of social media, forums, or other online platforms related to the topic of halal skincare. The data collection technique used in this study was purposive sampling. So, the number of respondents in this study were 377 respondents.

In this study, the steps for data analysis can follow the following sequence. First, text data collected from netizens can be analyzed using the Orange Data Mining 3.32 application for sentiment analysis (Sajwan et al., 2023). This process involves using natural language processing (NLP) tools to extract and evaluate the positive, negative, and neutral sentiments associated (Wankhade et al., 2022) with innovative attributes in a halal skincare product line. The Orange Data Mining 3.32 application can assist in gaining insight into how netizens respond and react to innovative attributes in the product.

Furthermore, a systematic literature review was carried out using Harzing's Publish or Perish (PoP) and VOSviewer. In this step, the researcher can use Harzing's PoP to collect and evaluate previously published related literature on topics related to halal skincare and its innovative attributes (Masudin et al., 2022). Researchers also use VOSviewer to create network visualizations of relevant literature, which helps identify trends, patterns, and relationships between concepts in the literature (van Eck & Waltman, 2010; Van Eck & Waltman, 2017).

Finally, to gain a deeper understanding of the relationship between innovative attributes in halal skincare product lines and netizens' responses, a parallel structural equation analysis (SEM-PLS) was performed using WarpPLS 8.0 (Kock, 2010, 2019, 2023). In this step, the researcher can test the statistical model to see the extent to which the innovative attribute influences the overall netizen response. WarpPLS 8.0 can assist in SEM-PLS analysis by modeling the relationship between the independent variable (innovative attribute) and the dependent variable (netizen response), and measuring the strength and significance of the relationship.

By following these steps, the researcher can analyze the data systematically and comprehensively to gain insight into netizens' responses to innovative attributes in halal skincare product lines. The sentiment analysis approach using Orange Data Mining 3.32, systematic literature review using Harzing's PoP and VOSviewer, and SEM-PLS analysis using WarpPLS 8.0 provide a holistic framework for understanding the relationship between relevant variables in this study.

RESULT AND DISCUSSION

Sentiment Analysis

Based on crawling data from Twitter in real-time, 651 text tweets were found related to the topics observed. Real-time crawling data on Twitter refers to collecting data on tweets that are being posted by Twitter users in real time. By analyzing the text of a tweet, we can identify trends, sentiments, and speech patterns related to that topic. The following are the results of sentiment in this study:

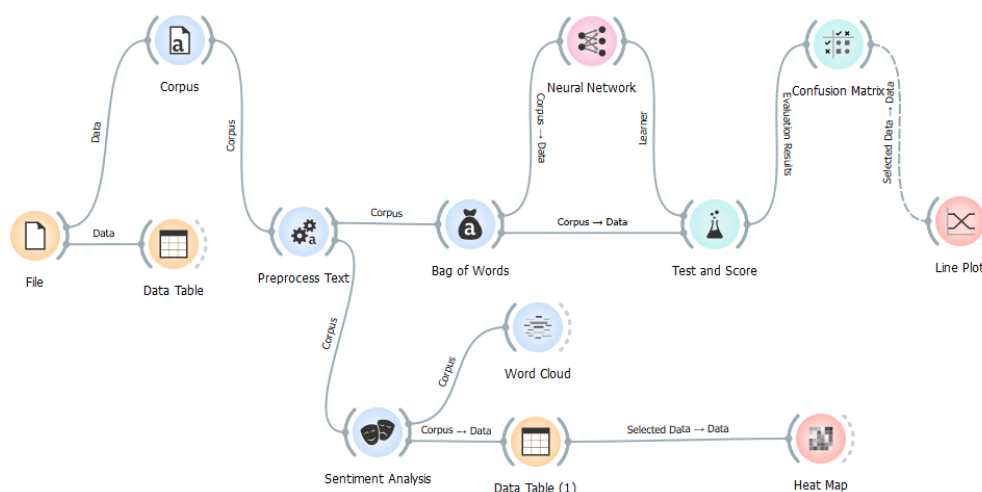


Figure 1. Sentiment Analysis (Orange Data Mining, 2023)

Based on the research results, the neural network algorithm is proven to have a high level of accuracy, with an accuracy value of 0.86 or 86%. The results of the confusion matrix show that the proportion of positive sentiment accuracy is 79.2% and negative sentiment is 72.2%. This shows that the neural network algorithm is capable of properly classifying sentiments in texts related to halal skincare. In this case, the company can continue to develop and improve this algorithm to further improve the accuracy of sentiment analysis. Even though there is a positive sentiment accuracy proportion of 79.2%, companies can consider this positive sentiment as an area that can be strengthened. Focusing on strengthening positive sentiment can help in building a positive image related to halal skincare products.

The five topics that are the focus of discussion regarding halal skincare are products, skin, care, benefits, and halal. These things are considered important for the company in paying attention to the satisfaction of halal skincare users. These topics provide insight into what users are talking about and are concerned about in the context of halal skincare. Companies can pay attention to these topics and use this information to direct marketing strategies, product development, and services that are better suited to the needs and desires of halal skincare users.

The multilingual sentiment analysis method was used in this study to analyze sentiment from the initial data. This method is capable of producing three classes of sentiment, namely positive, negative, and neutral. In sentiment analysis using this method through heat maps, it was found that blue in color degradation is more dominant than green, yellow, and white. This indicates a tendency for negative sentiment regarding halal skincare. Companies need to pay attention to this negative sentiment and understand the causes to take appropriate action to increase user satisfaction and reduce this negative sentiment.

Thus, this study concludes that the neural network algorithm is effective in classifying sentiments related to halal skincare, topics that are the focus of important conversations for companies, and sentiment analysis shows that there is a tendency for negative sentiment in discussions about halal skincare. Although, the proportion of positive sentiment accuracy is 79.2% and negative sentiment is 72.2%.

Based on this, the company can direct marketing and communication efforts to strengthen positive sentiments related to halal skincare products. This can be done by actively promoting the benefits and advantages of the product, sharing positive testimonials from satisfied users, and providing clear information about the halalness and quality of the product. These efforts can help build a positive image of the company and increase consumer confidence.

Companies need to pay attention to the negative sentiment that arises from data analysis and understand the causes better. This can be done through further analysis of the negative sentiment, finding out the underlying problem or dissatisfaction, and taking appropriate action to address the issue. Companies can conduct consumer surveys, hold group discussions, or monitor consumer feedback to gain deeper insight into these negative sentiments.

Based on understanding the causes of negative sentiment, companies can make improvements to the halal skincare products and services they offer. This could include improving quality, complying with stricter halal standards, cleaning up suspicious ingredients, increasing transparency, or developing innovations that are more in line with consumer needs. By making the right improvements, companies can increase user satisfaction and reduce negative sentiment.

Companies also need to communicate effectively with consumers regarding actions taken to increase satisfaction and overcome problems that cause negative sentiment. Transparency in communication will build consumer trust and give them confidence that the company cares about their needs and wants. Communication can be done through channels such as social media, company websites, or direct meetings with consumers.

By implementing these recommendations, companies can build a positive image related to halal skincare products, improve user satisfaction, and reduce negative sentiments that may exist. This will have a positive impact on the company's reputation, consumer confidence, and long-term business success. Therefore, it is important to further analyze how to evaluate netizen responses to innovative attributes in a line of halal skincare products through a systematic literature review using Publish or Perish to collect related articles and VOSviewer to analyze network visualization related to halal skincare.

Systematic Literature Analysis

Based on the article searches using the Publish or Perish application in the last three years (2021-2023) from Scopus as the data source, a total of three articles were found with the title words “halal skincare.” The Publish or Perish application is commonly used to retrieve and analyze academic articles and their citation data from various scholarly databases.

The limited number of three articles on the topic of “halal skincare” indicates that the specific research area of halal skincare may still be relatively niche or emerging in the academic literature. However, it's important to note that the search results may vary depending on the search criteria used and the coverage of the Scopus database.

These three articles may provide valuable insights into the subject of halal skincare and could potentially contribute to the existing body of knowledge in this field. Researchers, practitioners, and individuals interested in the topic of halal skincare can refer to these articles for a deeper understanding of the subject and to explore further research opportunities. Dengan demikian, hasil pencarian melalui PoP akan dianalisis lebih lanjut menggunakan VOSviewer.

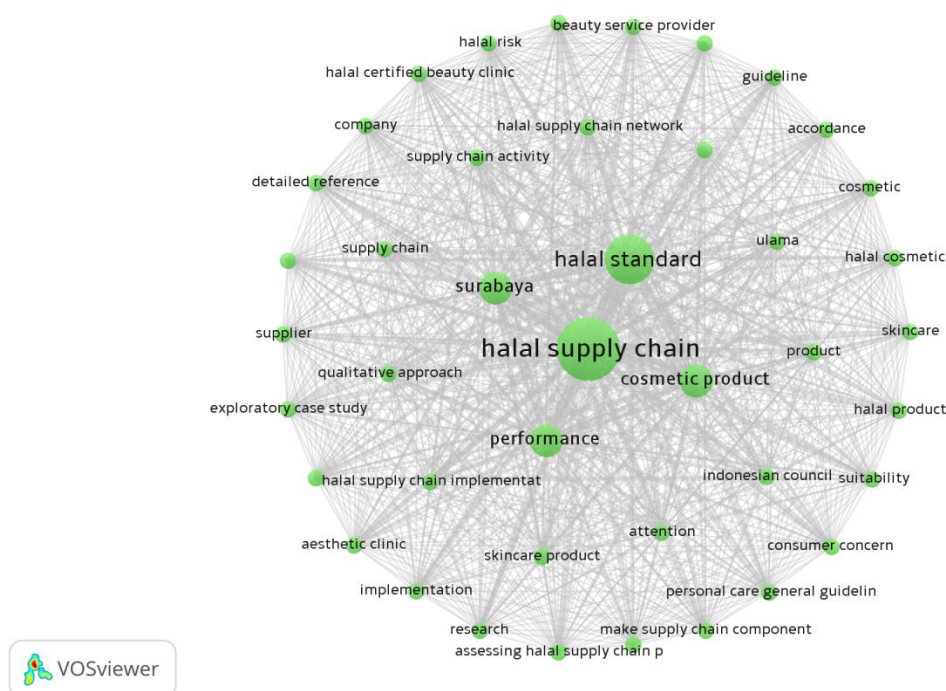


Figure2. Distribution of Keywords in Network Visualization (VOSviewer, 2023)

Based on the co-occurrence criteria, the network visualization which shows the distribution of the halal supply chain keywords with one color in the image shows the presence of clusters of the research keywords. In this context, co-occurrence refers to the presence or presence of the same keywords in the same context, such as in article titles or texts related to the topic of halal skincare. In a network visualization, keywords that frequently appear together will be connected and form more likely clusters or groups.

With only one color in the image, this shows that the keyword "halal supply chain" has a high level of co-occurrence among the articles in the dataset. This shows that these keywords consistently appear and are closely related to the research topics included in the dataset. In the context of halal skincare research, this can show that the keyword "halal supply chain" is the main focus or dominant topic in the articles analyzed. Thus, it can be concluded that there is a specificity of great importance to this topic in the literature studied within a certain period.

The results of the study show the importance of the topic of halal supply chain in the context of halal skincare research. The implication is that companies engaged in the halal skincare industry need to pay special attention to aspects of the halal supply chain, including the production process, halal certification, supply chains, and quality control so that the skincare products they produce can meet

halal standards properly. Therefore, companies can integrate the concept of the halal supply chain into their business strategy. This involves working with suppliers, manufacturers, and other business partners who also understand and apply halal principles in their operations. Thus, companies can ensure that the halal skincare products produced are guaranteed to be halal from the start of production to the consumers.

Another practical implication is that companies can emphasize the authenticity and safety of halal skincare products through serious attention to the halal supply chain. This includes the use of Halal ingredients, compliance with Halal standards, cross-prevention, and product safety enforcement. By placing a strong emphasis on these aspects, companies can build consumer confidence and differentiate their products in the increasingly competitive halal skincare market.

The results of this study also underscore the importance of collaboration with related halal institutions to strengthen the halal supply chain. Companies can establish partnerships with halal certification bodies, halal regulatory bodies, or organizations that focus on research and development in the halal industry. This kind of collaboration can assist companies in ensuring the halalness of their products, increasing transparency, and meeting the standards set by the relevant halal authorities.

With this practical notification, companies can strengthen their strategy in facing challenges and opportunities in the halal skincare industry. This will help build consumer trust, improve product quality, and maintain the company's reputation in the long term.

Structural Equation Modeling Analysis

The Structural Equation Modeling (SEM) analysis is employed to assess the level of significance in the relationship between latent variables and the hypothesis testing based on the structural path parameters. If the probability for each variable is less than 5%, it indicates a significant relationship, whereas if the probability for each variable is greater than 5%, it suggests an insignificant relationship. The outcomes of the inner model can be visualized in Figure 3.

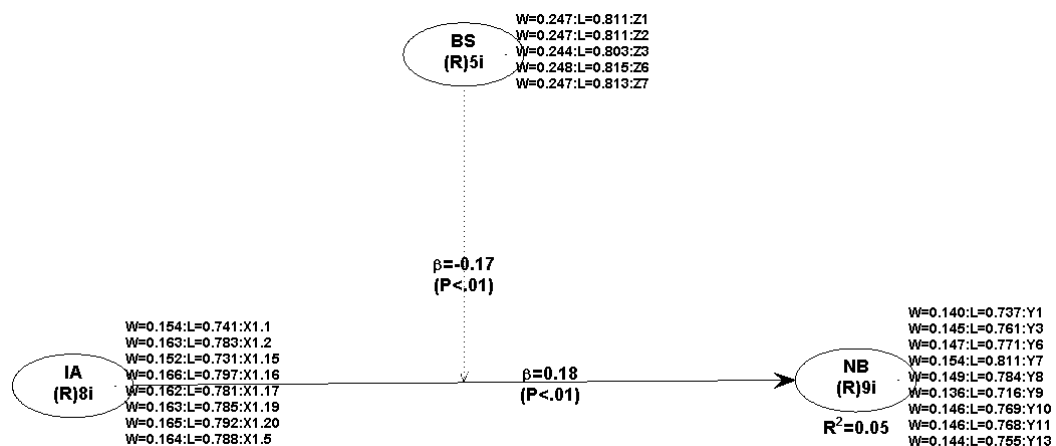


Figure 3. Hypothesis Testing Result (WarpPLS 8.0, 2023)

Based on Figure 3, the hypothesis results show that all probability variables are $<5\%$, so it can be concluded that the innovative attributes variable has a positive and significant effect on the behavior of netizens in halal skincare. Even though beauty standards effectively moderate the effect of innovative attributes on the behavior of netizens in halal skincare, beauty standards hurt innovative attributes on the behavior of netizens in halal skincare. That is, beauty standards weaken the influence of negative attributes on the behavior of netizens in halal skincare.

The results of the study show that when halal skincare products have innovative attributes, the behavior of netizens tends to be positively related to these products. For example, if a halal skincare product uses natural ingredients that are innovative and have proven benefits, netizens will tend to be interested and behave positively by trying and recommending the product to others. But interestingly, beauty standards have a negative influence on the relationship. This means that the level of beauty standards owned by netizens can influence their perceptions of innovation in halal skincare products.

For example, in a study, it was found that a halal skincare brand launched a new product that uses natural ingredients and innovative technology to provide significant benefits for the skin. Based

on research, the innovative attributes variable has a positive and significant effect on the behavior of netizens, so many netizens are interested in buying and using these products.

However, the moderating effect of beauty standards shows that netizens who have more rigid or traditional beauty standards tend to negatively influence innovative attributes in their behavior. For example, they may be more likely to consider other factors, such as brand or product packaging, rather than innovative factors in their buying decisions. As a result, the negative influence of beauty standards can weaken the influence of innovative attributes on netizen behavior.

Theoretical approaches such as Technology Acceptance Theory, Identity Theory, Marketing Theory, and Consumer Behavior Theory can help explain the relationship between these variables and provide practical insights into developing effective marketing strategies in the halal skincare industry. First, Technology Acceptance Model Theory focuses on how individuals accept and adopt new technologies (Momani et al., 2017). In the context of this research, innovative attribute variables that have a positive and significant effect on netizen behavior can be associated with the TAM concept. Innovation in halal skincare attributes is considered a new technology that is accepted and adopted by netizens. Netizens who believe in the effectiveness and benefits of this innovation tend to be more accepting and have a positive attitude towards halal skincare products.

Second, Identity Theory refers to how individuals form and maintain their identity through social interaction (Harwood, 2020). In the context of this study, beauty standards have a role as a moderating factor that influences the relationship between innovative attributes and netizen behavior. Individual identities, including their preferences and beauty standards, can influence how they respond to and perceive innovation in halal skincare products. Netizens who have strong identities tied to traditional beauty standards tend to be negatively influenced by these innovations, while netizens with more flexible identities tend to be more open to innovation.

Third, Marketing Theory involves the concepts and principles used in planning, implementing, and promoting products to consumers (Keller, 1993). In the context of this study, innovative attribute variables that have a positive effect on netizen behavior indicate that marketing halal skincare products with strong innovation attributes can generate positive responses from consumers. However, the moderating effect of beauty standards indicates that companies need to understand the preferences and expectations of consumer beauty standards in designing effective marketing strategies and communicating the uniqueness of products that comply with existing beauty standards.

Fourth, Consumer behavior theory studies individual behavior in choosing, buying, using, and evaluating products or services (Ajzen, 2016). In the context of this study, the behavior of netizens in halal skincare is influenced by innovative attribute variables and beauty standards. Netizens tend to respond positively to the attributes of halal skincare innovations, but the negative influence of beauty standards can affect the way they respond to these innovations. This research implies that companies need to understand consumer behavior and the factors that influence it in developing effective marketing strategies and meeting consumer expectations.

The practical implication of this research is that halal skincare companies need to understand deeply the beauty standards of netizens. By understanding these beauty standards, companies can develop marketing strategies and products that are more in line with consumer preferences and expectations. Companies can also consider educating netizens about the advantages of innovation in halal skincare so that it can help change their perception of the product.

Companies can use the results of this research as a basis for developing innovations in halal skincare products that are more in line with existing beauty standards. This can include developing new formulations, improving the quality of ingredients, or applying the latest technology in halal skincare. In this way, companies can meet netizen expectations related to beauty standards while still maintaining innovation in their products.

Companies need to increase awareness about the uniqueness and benefits of innovative halal skincare products to netizens. This can be done through effective marketing campaigns, collaboration with influencers or beauty enthusiasts who have a strong influence among netizens, and providing positive testimonials from satisfied consumers. By increasing netizens' understanding of product uniqueness, companies can help overcome the negative influence of beauty standards and encourage positive behavior related to halal skincare products.

Based on the results of this study, companies need to educate consumers about the value and benefits of innovation in halal skincare products. This can be done through an effective marketing

campaign, providing clear information about the innovations in the product, as well as sharing testimonials and concrete evidence regarding the benefits provided. This will help increase consumer awareness and appreciation of the innovative value of halal skincare, thereby encouraging more positive behavior related to the product. Companies can also adapt their marketing strategies to take into account the moderating effect of beauty standards. This can be done by describing the innovation attributes more explicitly and promoting linkages between innovations in products and existing beauty standards. In this way, companies can help build positive perceptions of innovative attributes and reduce the negative effects that may result from beauty standards.

In addition, companies can work with influencers or beauty enthusiasts who have a strong influence among netizens. These influencers can help change perceptions and overcome the negative influence of beauty standards by conveying accurate information and educating about the benefits and uniqueness of innovative halal skincare products. This will help create connections and trust between consumers and halal skincare brands. Then, companies can continue to conduct research and development to produce halal skincare products that are more innovative and comply with applicable beauty standards. By paying attention to consumer needs and preferences as well as changing trends, companies can produce products that meet consumer expectations and provide a positive experience. This will also help increase consumer satisfaction and build loyalty towards halal skincare brands.

Companies need to continue to strengthen product quality and ensure compliance with halal and safety standards. This will help build consumer confidence in halal skincare products and strengthen the positive influence of the innovation attributes. Transparency in information and communication is also important to ensure consumers can make the right decisions and feel confident about the products they use.

Through the implementation of these policies, companies can increase consumer acceptance of halal skincare products with innovative attributes. This will help build a positive image, increase consumer loyalty, and increase market share in the increasingly competitive halal skincare industry.

CONCLUSION

Based on the research *Beyond Beauty Standards: Assessing Netizen Response to Innovative Attributes in a Halal Skincare Line* involving sentiment analysis, systematic literature review, and SEM-PLS, it can be concluded that the study uses sentiment analysis to assess netizen responses to innovations in halal skincare. The results of the study show that netizens show an overall negative response to these attributes. This shows that innovation in halal skincare products can negatively affect the perceptions and responses of netizens.

In conducting a systematic literature review, this study used Harzing's Publish or Perish (PoP) and VOSviewer methods to identify articles related to halal skincare in the last three years. This finding shows that several articles have been researched regarding halal skincare in that period. This indicates the interest and development of research in the domain.

In this study, the SEM- method was used to analyze the relationship between the variables in the study. The results of the SEM-PLS analysis show that innovative attribute variables have a positive and significant effect on the behavior of netizens in halal skincare. In addition, it was also found that beauty standards have a moderating effect on the relationship between innovative attributes and netizen behavior. Although beauty standards influence this influence, they also have a negative influence on the relationship.

The general conclusion from this study is that innovation in halal skincare attributes has a positive influence on netizen responses. However, beauty standards have an important role to play in moderating the relationship, by exerting a negative influence on netizens' responses to innovations. The practical implication of this research is that halal skincare companies need to consider the importance of innovation in their products, but also understand the influence and expectations of beauty standards from consumers. By strengthening innovations that comply with existing beauty standards, companies can build a positive image, increase consumer satisfaction, and maintain a competitive advantage in the halal skincare market.

REFERENSI

- Abd Rahman, A., Asrarhaghghi, E., & Ab Rahman, S. (2015). Consumers and Halal cosmetic products: Knowledge, religiosity, attitude and intention. *Journal of Islamic Marketing*, 6(1), 148–163. <https://doi.org/10.1108/JIMA-09-2013-0068>
- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 179–211. <https://doi.org/10.1016/0749-5978%2891%2990020-t>
- Ajzen, I. (2016). Consumer attitudes and behavior: The theory of planned behavior applied to food consumption decisions. *Italian Review of Agricultural Economics*, 121-138 Pages. <https://doi.org/10.13128/REA-18003>
- Ajzen, I. (2020). The theory of planned behavior: Frequently asked questions. *Human Behavior and Emerging Technologies*, 2(4), 314–324. <https://doi.org/10.1002/hbe2.195>
- Al-Emran, M., & Shaalan, K. (Eds.). (2021). *Recent Advances in Technology Acceptance Models and Theories* (Vol. 335). Springer International Publishing. <https://doi.org/10.1007/978-3-03064987-6>
- Annisa, A. A. (2023). Halal industries growth in Salatiga, Central Java, Indonesia. *Asian Management and Business Review*, 90–106. <https://doi.org/10.20885/AMBR.vol3.iss1.art8>
- Anubha. (2023). Mediating role of attitude in halal cosmetics purchase intention: An ELM perspective. *Journal of Islamic Marketing*, 14(3), 645–679. <https://doi.org/10.1108/JIMA-04-2021-0112>
- Aufi, F. (2021). Halal cosmetics and behavior of Muslim women in Indonesia: The study of antecedents and consequences. *Asian Journal of Islamic Management (AJIM)*, 3(1), 11–22. <https://doi.org/10.20885/ajim.vol3.iss1.art2>
- Clarita, N. M. A., Zimbalist, S. B., & Setiowati, R. (2020). Factors Impacting Customer Attitude toward Buying Halal Cosmetics in Jabodetabek. *The Winners*, 21(1), 7. <https://doi.org/10.21512/tw.v21i1.5873>
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- De Regt, A., Montecchi, M., & Lord Ferguson, S. (2019). A false image of health: How fake news and pseudo-facts spread in the health and beauty industry. *Journal of Product & Brand Management*, 29(2), 168–179. <https://doi.org/10.1108/JPBM-12-2018-2180>
- Department of Management, Universitas Mercu Buana, Indonesia, & Mahliza, F. (2022). Consumption Behavior of Halal Cosmetic Products: The Mediating Role of Trust on the Effect of Halal Certification on Purchase Intention. *Journal of Economics, Finance And Management Studies*, 05(01). <https://doi.org/10.47191/jefms/v5-i1-28>
- Divianjella, M., Muslichah, I., & Ariff, Z. H. A. (2020). Do religiosity and knowledge affect the attitude and intention to use halal cosmetic products? Evidence from Indonesia. *Asian Journal of Islamic Management (AJIM)*, 71–81. <https://doi.org/10.20885/ajim.vol2.iss2.art1>
- Faculty of Arts and Social Science, Universiti Tunku Abdul Rahman, 31900 Perak, Malaysia, Kaur, M., Mutty, B., & Faculty of Arts and Social Science, Universiti Tunku Abdul Rahman, 31900 Perak, Malaysia. (2016). The Commodification of Islam?: A Critical Discourse Analysis of Halal Cosmetics Brands. *Kemanusiaan The Asian Journal of Humanities*, 23(Supp. 2), 63–80. <https://doi.org/10.21315/kajh2016.23.s2.4>
- Godey, B., Manthiou, A., Pederzoli, D., Rokka, J., Aiello, G., Donvito, R., & Singh, R. (2016). Social media marketing efforts of luxury brands: Influence on brand equity and consumer behavior. *Journal of Business Research*, 69(12), 5833–5841. <https://doi.org/10.1016/j.jbusres.2016.04.181>
- Guiné, R. P. F., Florença, S. G., Barroca, M. J., & Anjos, O. (2020). The Link between the Consumer and the Innovations in Food Product Development. *Foods*, 9(9), 1317. <https://doi.org/10.3390/foods9091317>
- Halal Cosmetics Expo. (2020). *Halal Certification & The Halal Industry | in-cosmetics Connect*. <https://connect.in-cosmetics.com/regions/halal-cosmetics/halal-certification-and-the-halal-cosmetics-industry/>
- Hanaysha, J. R. (2018). An examination of the factors affecting consumer’s purchase decision in the Malaysian retail market. *PSU Research Review*, 2(1), 7–23. <https://doi.org/10.1108/PRR-082017-0034>

- Harwood, J. (2020). Social Identity Theory. In J. Bulck (Ed.), *The International Encyclopedia of Media Psychology* (1st ed., pp. 1–7). Wiley. <https://doi.org/10.1002/9781119011071.iemp0153>
- Hennig-Thurau, T., Gwinner, K. P., Walsh, G., & Gremler, D. D. (2004). Electronic word-of-mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the Internet? *Journal of Interactive Marketing*, 18(1), 38–52. <https://doi.org/10.1002/dir.10073>
- Ho, C.-H., & Wu, W. (2011). Role of Innovativeness of Consumer in Relationship between Perceived Attributes of New Products and Intention to Adopt. *International Journal of E-Business Management*, 9, 180–194.
- Hong, S. H., & Yu, J. H. (2018). Identification of external variables for the Technology Acceptance Model (TAM) in the assessment of BIM application for mobile devices. *IOP Conference Series: Materials Science and Engineering*, 401, 012027. <https://doi.org/10.1088/1757-899X/401/1/012027>
- Hussain, Z. (2022). Intention to Purchase Halal Cosmetic Products in an Islamic Pakistani Culture. *Journal of Islamic Economics and Finance Studies*, 3(1), 1. <https://doi.org/10.47700/jiefes.v3i1.4256>
- Indonesia Sharia Economic Festival. (2022). *Indonesia Halal Markets Report 2021/2022*. Indonesia Halal Lifestyle Center.
- Irfany, M. I., Khairunnisa, Y., & Tieman, M. (2023). Factors influencing Muslim Generation Z consumers' purchase intention of environmentally friendly halal cosmetic products. *Journal of Islamic Marketing, ahead-of-print*(ahead-of-print). <https://doi.org/10.1108/JIMA-07-2022-0202>
- Isa, R. M., Man, S., Rahman, N. N. A., & Aziz, A. (2023). Determinants of consumer adoption of halal cosmetics: A systematic literature review. *Journal of Cosmetic Dermatology*, 22(3), 752–762. <https://doi.org/10.1111/jocd.15486>
- Juliana, J., Azzahra, A. N., Rosida, R., Mahri, A. J. W., Alamsyah, I. F., & Saripudin, U. (2022). Halal Cosmetics In The Eyes Of Millennial Muslims: Factor Analysis Of Halal Labels And Celebrity Endorsers. *Jurnal Ekonomi Dan Bisnis Islam (Journal of Islamic Economics and Business)*, 8(2), 318–333. <https://doi.org/10.20473/jebis.v8i2.40598>
- Keller, K. L. (1993). Conceptualizing, Measuring, and Managing Customer-Based Brand Equity. *Journal of Marketing*, 57(1), 1–22. <https://doi.org/10.2307/1252054>
- Khan, N., Sarwar, A., & Tan, B. C. (2021). Determinants of purchase intention of *halal* cosmetic products among Generation Y consumers. *Journal of Islamic Marketing*, 12(8), 1461–1476. <https://doi.org/10.1108/JIMA-11-2019-0248>
- Kock, N. (2010). Using WarpPLS in E-collaboration Studies: An Overview of Five Main Analysis Steps. *International Journal of e-Collaboration*, 6(4), 1–11. <https://doi.org/10.4018/jec.2010100101>
- Kock, N. (2019). Factor-Based Structural Equation Modeling with Warppls. *Australasian Marketing Journal*, 27(1), 57–63. <https://doi.org/10.1016/j.ausmj.2019.02.002>
- Kock, N. (2023). Using WarpPLS in e-Collaboration Studies: Mediating Effects, Control and Second Order Variables, and Algorithm Choices. *International Journal of e-Collaboration*, 7(3), 1–13. <https://doi.org/10.4018/jec.2011070101>
- Lai, P. C. (2017). The Literature Review of Technology Adoption Models and Theories for the Novelty Technology. *JISTEM - Journal of Information Systems and Technology Management*, 14(1), 21–38.
- Lee, S. M., & Trimi, S. (2018). Innovation for creating a smart future. *Journal of Innovation & Knowledge*, 3(1), 1–8. <https://doi.org/10.1016/j.jik.2016.11.001>
- Letsoin, B., & Riorini, S. V. (2023). The Mediating Role of Attitude Toward Product Towards Halal Cosmetic Purchase Intention in Female Consumers in Indonesia. *Journal of Social Research*, 2(5), 1616–1633. <https://doi.org/10.55324/josr.v2i5.854>
- Liao, S.-H., Widowati, R., & Hsieh, Y.-C. (2021). Investigating online social media users' behaviors for social commerce recommendations. *Technology in Society*, 66, 101655. <https://doi.org/10.1016/j.techsoc.2021.101655>
- Martin, G. (2011). The Importance Of Marketing Segmentation. *American Journal of Business Education (AJBE)*, 4(6), 15–18. <https://doi.org/10.19030/ajbe.v4i6.4359>

- Masudin, I., Rahmatullah, B. B., Agung, M. A., Dewanti, I. A., & Restuputri, D. P. (2022). Traceability System in Halal Procurement: A Bibliometric Review. *Logistics*, 6(4), 67. <https://doi.org/10.3390/logistics6040067>
- Momani, A. M., Jamous, M. M., & Hilles, S. M. S. (2017). Technology Acceptance Theories: Review and Classification. *International Journal of Cyber Behavior, Psychology and Learning*, 7(2), 1–14. <https://doi.org/10.4018/IJCBPL.2017040101>
- Mustaqim, D. A., & Fazriani, D. (2023). *Analysis Of The Effect Of Halal Certification On Consumer Trust And Brand Loyalty* [Preprint]. Open Science Framework. <https://doi.org/10.31219/osf.io/9d3jg>
- Mustaqim, D. A., & Mulyana, F. P. (2023). *Analysis Of The Effect Of Halal Certification On Consumer Trust In Cosmetics* [Preprint]. Open Science Framework. <https://doi.org/10.31219/osf.io/ge2cu>
- Nario-Redmond, M. R., Biernat, M., Eidelman, S., & Palenske, D. J. (2004). The Social and Personal Identities Scale: A Measure of the Differential Importance Ascribed to Social and Personal Self-Categorizations. *Self and Identity*, 3(2), 143–175. <https://doi.org/10.1080/13576500342000103>
- Newcastle University. (2023). *Technology Acceptance Model—TheoryHub—Academic theories reviews for research and T&L*. <https://open.ncl.ac.uk/theories/1/technology-acceptance-model/>
- Ngah, A. H., Tuan Mansor, T. M., Gabarre, C., Rahi, S., Khan, S., & Ahmad, R. (2022). I love my cosmetics: Educated young Muslim’s behaviour of non-halal certified cosmetics. *Journal of Islamic Marketing, ahead-of-print(ahead-of-print)*. <https://doi.org/10.1108/JIMA-06-2021-0196>
- Niosi, A. (2021). *Understanding Attitudes*. <https://opentextbc.ca/introconsumerbehaviour/chapter/understanding-attitudes/>
- Octavia, J., Witono, A. B. M., & Kurniawan, D. (2021). The effect of product innovation towards brand image and its implication on consumer buying behavior (a case of Toshiba television in Jakarta). *International Journal of Family Business Practices*, 4(1), Article 1. <https://doi.org/10.33021/ijfbp.v4i1.1495>
- Peña-García, N., Gil-Saura, I., Rodríguez-Orejuela, A., & Siqueira-Junior, J. R. (2020). Purchase intention and purchase behavior online: A cross-cultural approach. *Heliyon*, 6(6), e04284. <https://doi.org/10.1016/j.heliyon.2020.e04284>
- Prakasita, T. A., & Wardana, A. (2022). Safety, Quality, and Religion on the Consumption of Halal Cosmetic Products: Views of Female Muslim University-Students. *Jurnal Ilmu Sosial Dan Humaniora*, 11(2), 191–203. <https://doi.org/10.23887/jish.v11i2.39251>
- Rajapathirana, R. P. J., & Hui, Y. (2018). Relationship between innovation capability, innovation type, and firm performance. *Journal of Innovation & Knowledge*, 3(1), 44–55. <https://doi.org/10.1016/j.jik.2017.06.002>
- Roy, P. (2022). Theory and Models of Consumer Buying Behaviour: A Descriptive Study. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.4205489>
- Sajwan, V., Awasthi, M., Goel, A., & Sharma, P. (2023). Sentiment analysis of Twitter data regarding the agnipath scheme of the defense forces. *Indonesian Journal of Electrical Engineering and Computer Science*, 30(3), 1643. <https://doi.org/10.11591/ijeecs.v30.i3.pp1643-1650>
- Serna, F. J. A. (2022). The Legal Regulation of Spam: An International Comparative Study. *Journal of Innovations in Digital Marketing*, 3. <https://doi.org/10.51300/jidm-2022-44>
- Setiani, N. A., Najib, M. F., Amalia, F. A., & Purnamasari, D. (2022). Consideration Analysis of Muslim Purchase Intention on Korean Beauty Products. *Journal of Marketing Innovation (JMI)*, 2(1), Article 1. <https://doi.org/10.35313/jmi.v2i1.30>
- Shah, S. S., & Asghar, Z. (2023). Dynamics of social influence on consumption choices: A social network representation. *Heliyon*, 9(6), e17146. <https://doi.org/10.1016/j.heliyon.2023.e17146>
- Simons, J. D. (2021). From Identity to Enaction: Identity Behavior Theory. *Frontiers in Psychology*, 12, 679490. <https://doi.org/10.3389/fpsyg.2021.679490>
- Sohail, N., Haque, A., & Suki, A. B. A. (2022). The influence of knowledge, innovation compatibility and social influence on adoption of Halal cosmetics: An empirical evidence from Pakistan. *International Journal of Innovative Research and Publications*. <https://doi.org/10.51430/IJIRP.2022.25.001>

- Sriminarti, N., & Nora, L. (2018). The Role of Product Knowledge and Attitudes toward Purchasing Intentions: The Moderating Effect of Religiosity on Halal Cosmetics. *KnE Social Sciences*, 3(10), 518. <https://doi.org/10.18502/kss.v3i10.3153>
- Stets, J. E., & Burke, P. J. (2000). Identity Theory and Social Identity Theory. *Social Psychology Quarterly*, 63(3), 224. <https://doi.org/10.2307/2695870>
- Stryker, S., & Burke, P. J. (2000). The Past, Present, and Future of an Identity Theory. *Social Psychology Quarterly*, 63(4), 284. <https://doi.org/10.2307/2695840>
- Sugibayashi, K., Yusuf, E., Todo, H., Dahlizar, S., Sakdiset, P., Arce, F. J., & See, G. L. (2019). Halal Cosmetics: A Review on Ingredients, Production, and Testing Methods. *Cosmetics*, 6(3), Article 3. <https://doi.org/10.3390/cosmetics6030037>
- Sweeney, J. C., & Soutar, G. N. (2001). Consumer perceived value: The development of a multiple item scale. *Journal of Retailing*, 77(2), 203–220. [https://doi.org/10.1016/S0022-4359\(01\)00041-0](https://doi.org/10.1016/S0022-4359(01)00041-0)
- Taherdoost, H. (2018). A review of technology acceptance and adoption models and theories. *Procedia Manufacturing*, 22, 960–967. <https://doi.org/10.1016/j.promfg.2018.03.137>
- University Malaya, Malaysia, Mohezar, S., Suhaiza, Z., University Malaya, Malaysia, Zainorfarah, Z., & University Malaya, Malaysia. (2016). Halal Cosmetics Adoption Among Young Muslim Consumers in Malaysia: Religiosity Concern. *Global Journal Al Thaqafah*, 6(1), 47–59. <https://doi.org/10.7187/GJAT10220160601>
- Van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523–538. <https://doi.org/10.1007/s11192-009-0146-3>
- Van Eck, N. J., & Waltman, L. (2017). Citation-based clustering of publications using CitNetExplorer and VOSviewer. *Scientometrics*, 111(2), 1053–1070. <https://doi.org/10.1007/s11192-017-2300-7>
- Wankhade, M., Rao, A. C. S., & Kulkarni, C. (2022). A survey on sentiment analysis methods, applications, and challenges. *Artificial Intelligence Review*, 55(7), 5731–5780. <https://doi.org/10.1007/s10462-022-10144-1>
- Wu, M., Ran, Y., & Zhu, S. X. (2022). Optimal pricing strategy: How to sell to strategic consumers? *International Journal of Production Economics*, 244, 108367. <https://doi.org/10.1016/j.ijpe.2021.108367>
- Xiao, L., Guo, F., Yu, F., & Liu, S. (2019). The Effects of Online Shopping Context Cues on Consumers' Purchase Intention for Cross-Border E-Commerce Sustainability. *Sustainability*, 11(10), Article 10. <https://doi.org/10.3390/su11102777>
- Yusuf, E. W., Komaladewi, R., & Sudarma, Y. S. (2019). The Importance of Halal Product Label to Building Customer Trust. *Jurnal Ekonomi Modernisasi*, 15(1), 58–66. <https://doi.org/10.21067/jem.v15i1.2914>
- Zaki, K., Nopiah, R., Walid, A., & Putra, E. P. (2021). The Role of Environment in Responding to Halal Skincare Products in Indonesia. *Journal of Physics: Conference Series*, 1796(1), 012030. <https://doi.org/10.1088/1742-6596/1796/1/012030>
- Zeugner-Roth, K. P., Žabkar, V., & Diamantopoulos, A. (2015). Consumer Ethnocentrism, National Identity, and Consumer Cosmopolitanism as Drivers of Consumer Behavior: A Social Identity Theory Perspective. *Journal of International Marketing*, 23(2), 25–54. <https://doi.org/10.1509/jim.14.0038>
- Zhao, H., Yao, X., Liu, Z., & Yang, Q. (2021). Impact of Pricing and Product Information on Consumer Buying Behavior With Customer Satisfaction in a Mediating Role. *Frontiers in Psychology*, 12. <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.720151>
- Zukhrufani, A., & Zakiy, M. (2019). The Effect Of Beauty Influencer, Lifestyle, Brand Image And Halal Labelization Towards Halal Cosmetical Purchasing Decisions. *Jurnal Ekonomi Dan Bisnis Islam | Journal of Islamic Economics and Business*, 5(2), Article 2. <https://doi.org/10.20473/jebis.v5i2.14704>