Bibliometric Analysis of the Aesthetic Innovation on SMEs Food Souvenir

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Abstract. Aesthetic innovation is crucial for significant general and SMEs in the food industry. Furthermore, it can be emphasized that aesthetics is necessary for building a product’s image, strength and identity to face such dynamic business competition. On that basis, this study aims to determine the aesthetic innovation of food souvenirs in SMEs within the scope of research through the bibliometric technique. This research method is descriptive quantitative. Analysis of the research data was carried out by using the bibliometric technique. Bibliometric indicators are applied to evaluate bibliographic data, which includes the total number of authors and published articles, citations, institutions and countries participating in research development. In addition, documentation techniques and literature studies obtained from the Scopus and Google Scholar databases are also used. From the analysis that has been carried out, it is known that the keyword network between one study and another is known so that the most frequently used and the least commonly used keywords by researchers can be identified. In this study, “aesthetic innovation” is one of the keywords that is the least commonly used in innovation or SME development research.

Keywords: Aesthetics · Bibliometry · Innovation · SME

1 Introduction

Small and Medium Enterprises (SMEs) are categorized as companies with less than 250 employees, a turnover of less than 50 million or a balance of less than 43 million. For comparison: Unilever, a large company in the food sector, had 169,000 employees and a turnover of 52,700 million in 2016 [1–3]. In other words, the characteristics of SMEs can be seen in human resources, finance, and the relatively low utilization of technology. However, the products developed by SMEs are, in fact, no less than products developed in modern factories and accordance with the tastes of the current generation [4, 5]. Moreover, it is undeniable that SMEs have a huge role in the national economy. Seeing such a significant role, the fostering and development of small industries are not only important as a pathway towards equitable distribution of development results but also as the main element of the entire industrial structure in Indonesia because, with a small investment, it can produce effective and can absorb a lot of energy work [6, 7].

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In today’s dynamic business environment, an organization must be able to innovate continuously to be successful [8, 9]. Innovation involves introducing new products or changing the use of existing products, introduction of new processes, but also changing the organizational structure and the administrative structure [10–12]. The innovation potential varies from organization to organization and depends on various factors. Therefore, this means that the success of an organization is ultimately pegged to its organizational capabilities, which essentially requires continuous exploration of untapped areas and implementation of new ideas for new products, services, processes and organizational systems that, in the long run, have an impact. Positive for stakeholders [13–15].

It is clear that in today’s competitive environment, the goal of every company is to be better than its competitors in terms of performance and ultimately create a competitive advantage that will lead to the company’s sustainability. Today’s environment thrives on knowledge-driven innovation, employee creativity and a desire to learn, research and develop new ideas and processes continually. Innovation is a process that requires the creation of new products, services, new technological processes, new organizations or improvements to existing products or services, and improvements to existing technological and organizational processes [16–18].

The business world uses various strategies to achieve its various goals and objectives. Strategy is defined as a collection of decisions and actions that management incorporates in their daily activities to achieve superior performance compared to the players in the market. According to Porter, organizational performance is inversely related to the five competitive forces. Therefore, it is up to management to assess the intensity of competitive forces and implement defensive or offensive strategies. Innovation is one of the strategies adopted by various companies in different industries to create market share for themselves. Companies innovate by adopting new technologies and management practices that will lead to efficiencies and better performance. In the food chain, Supply Chain Integration (SCI) and innovation are both essential [19–22]. Both innovation and SCI can provide superior value to large-scale enterprises and impact the advantage of SMEs becoming a competitive industry so that they can provide superior value to customers [17, 23, 24]. But little research has been done on how aesthetic innovations in food souvenirs can complement each other, while Indonesia has many SMEs, especially those engaged in the food sector.

Unfortunately, little research has been done on innovation by SMEs in the food sector [25–27]. In the existing literature, there is no clear answer to whether SMEs are less innovative than their big competitors. Several studies on innovation in SMEs show that SMEs are very innovative, even though their resources are limited. However, SMEs also experience difficulties implementing and utilizing innovations [19, 28–30]. Other research shows that innovations by SMEs in the food chain are often ‘supplier-dominated,’ meaning that ‘most innovations depend on the integration and adaptation of innovations developed by other companies [31, 32]. So these SMEs do not develop innovations independently (because they have few resources), but they adopt innovations developed by other companies, for example, large suppliers or large customers. This leaves little room for implementing new, improved ideas [33–36].
One of the elements needed to produce innovation and be integrated into business processes is aesthetic design. Design is significant for small and medium enterprises because it can improve communication and product development and can be a source of supporting innovation. The design has more potential to drive business change, strengthen innovation, create customer experiences, and add value. The design creates value through innovation, functional enhancement, visual differentiation, brand reinforcement, and positive energy to customer experience. Therefore design plays an essential role in an organization [37–40].

Visual appeal aimed at buyers can be activated by creative breakthroughs that are not only concerned with quality but also eye-catching, one of which is through the appearance of the packaging. Packaging is the outermost attribute of a product that functionally protects the contents of the product as well as the aesthetic value of the product. Packaging can attract attention, enhance image and influence consumer perceptions of the product. One of the main functions of packaging is an aesthetic means to communicate with people from different backgrounds because packaging is the key to product communication with consumers [41–44].

In some food products produced by SMEs, there may be values that have shifted and caused contradictions. Still, innovation efforts related to visual and aesthetic aspects in developing modern product designs with competitive values with distinctive characteristics and important branding aesthetic aspects can take their role in increasing the selling value of food produced by SMEs, which often become souvenirs and souvenirs. So today's aesthetic innovation is significant for companies and SMEs in the food industry, although SMEs experience many difficulties implementing and implementing aesthetic innovations [45–48].

Furthermore, it can be emphasized that aesthetics is necessary for building a product’s image, strength and identity to face such dynamic business competition. The aesthetics of the design of a product can also be used as a stimulus for consumers to increase interest in purchasing products and improve the company’s brand image. Aesthetics is closely related to the nature of natural beauty and is a product of art. Aesthetics is part of the study of the philosophy of beauty and ugliness [7, 49–52]. From some of these opinions, it can be concluded that aesthetics is a science that studies and questions the beauty of an object in terms of aesthetics. It is even emphasized that one of the essential aspects of visual communication is aesthetics. Visual aesthetics is studied through three disciplines: philosophy, art, and natural sciences. This discipline studies visual understanding thoroughly and thoughtfully [2, 53–56].

Based on this description, it can be seen that aesthetic innovations need to be carried out on SME food products, especially the types of food that are projected as souvenirs or souvenirs. As explained earlier, there is still little research on aesthetic innovation in SME food. On that basis, this study aims to determine the aesthetic innovation of food souvenirs in SMEs within the scope of research through the bibliometric technique. This knowledge of aesthetics and innovation benefits entrepreneurs who want to improve their performance. Therefore, this research is expected to contribute to increasing the aesthetic innovation of SMEs in the food sector by identifying various aesthetic innovations of existing SME food souvenirs.
Research Methods

This research is included in the qualitative-quantitative or quantitative descriptive method, namely research whose data is a mixture of numeric data with narrative data but not mathematical [57]. Analysis of the research data was carried out by using the bibliometric technique. Bibliometric indicators are applied to evaluate bibliographic data, which includes the total number of authors and published articles, citations, institutions and countries participating in research development. In addition, documentation techniques and literature studies obtained from the Scopus, Elsevier, ProQuest, and Google Scholar databases are also used. Scopus is used as primary data because this platform is top-rated among other databases regarding the very high quality of articles on business and management topics [58]. The journal articles found in the early stages of the search were 51 documents from Scopus. These articles are research conducted in the period 2018 to 2022. The keywords used include “Aesthetic,” “Innovation,” and “SMEs.” While from Google Scholar, 200 research articles were obtained using similar keywords. Findings the article is still raw because it has not been explored to find its relevance to the research the author will do.

Results

The search results show that scientific publications containing the keyword “aesthetic innovation” in the title, abstract and keywords from 2018–2022 in the Scopus database were found to be 51 documents, with the distribution of all of them being scientific publications in the article category. Scientific publications with the keyword “Aesthetic Innovation” in the title, abstract and keywords began to appear in 2018 with the findings of 4 documents. The absence of scientific publication findings with the term “aesthetic and innovation” in the title, abstract and keywords before 2018 could be due to the lack of interest in the topic of ‘aesthetic innovation’ for academics. 200 publications in the form of journals.

3.1 Number of Publications and Citations

Figure 1 shows that in the last five years, 51 studies on aesthetic innovation have been published in the Scopus, Elsevier, and ProQuest database from 2018 to 2022. The published articles analyzed through the Scopus basis show that the number of publications from 2018 to 2022 is volatile. In 2018 there were 12 publications. This number decreased to 9 scientific publications in 2019. In 2020 there were 10 research publications and 11 research publications in 2021.

Furthermore, until early October 2022, the number of research publications related to aesthetic innovation decreased again to 9 scientific publications. The graph in Fig. 1 proves that the research is not constant but dynamic. There is an increase or decrease in the number of publications every year. In other words.

The composition of the publications shown in Fig. 1 is 100% in the form of research articles. The concept of aesthetic innovation is balanced to discuss manufactured products, arts crafts, and product packaging designs. The term aesthetic innovation is more
often used implicitly and substituted with design innovation because, according to some researchers, ‘aesthetic’ is a value that can be assessed from the design of a product, be it packaging, product form or advertising to market the product. Meanwhile, the results of the VOS Viewer analysis that combines data between Scopus, Elsevier, ProQuest, and Google Scholar and Google Scholar illustrates that aesthetic innovation has not become the main topic in a study because many researchers tend to choose the diction of ‘design’ or ‘art innovation.’ The concept is believed to have a meaning that aligns with aesthetic innovation. Published research has not made many souvenir food products the object of research related to aesthetic innovation. Food SMEs do a lot of innovation in terms of product packaging, alternative raw materials, and processing products that are more environmentally friendly [17, 38, 45, 59, 60]. Furthermore, when viewed from the research sector, it is presented as follows (Table 1):

<table>
<thead>
<tr>
<th>Sector</th>
<th>f</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Sciences</td>
<td>20</td>
<td>39.8%</td>
</tr>
<tr>
<td>Arts &amp; Humans</td>
<td>9</td>
<td>17.5%</td>
</tr>
<tr>
<td>Business Management</td>
<td>7</td>
<td>13.6%</td>
</tr>
<tr>
<td>Environmental Science</td>
<td>3</td>
<td>6.8%</td>
</tr>
<tr>
<td>Energy</td>
<td>4</td>
<td>5.8%</td>
</tr>
<tr>
<td>Economy</td>
<td>3</td>
<td>4.9%</td>
</tr>
<tr>
<td>Engineering</td>
<td>1.9</td>
<td>3.9%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>0.969</td>
<td>1.9%</td>
</tr>
<tr>
<td>Computer Science</td>
<td>0.969</td>
<td>1.9%</td>
</tr>
<tr>
<td>Other</td>
<td>1.2</td>
<td>2.9%</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 1. Bibliometric search results by research sector.
From the research topic related to the keyword “aesthetic innovation,” researchers’ focus on the SME food world, especially souvenir food, is still limited, and research has never even been conducted on SME innovation through an aesthetic approach.

### 3.2 Top Author, Countries and Institutions

Figure 2 shows that the nodules representing the UK and China are much larger than those representing other countries names. This shows that the collaboration of authors in publishing research results related to the theme of “aesthetic and innovation” affiliated from the UK and China is more potent than collaboration between affiliated writers from other countries.

The strength of collaboration links between authors based on country of origin in scientific publications that have the term “aesthetic and innovation” in the title, abstract and or keywords resulting from analysis using VOSviewer with a minimum number of 20 and 30 documents from the results of bibliometric analysis displayed with a network visualization display option (network visualization) (Fig. 2). Figure 2 show that the results of the collaboration analysis between authors based on country of origin are presented in 1 color group, representing one cluster.

A bibliometric study to analyze the strength of international collaboration of scientific publications by authors from China with other countries based on data from the Web of Science. Their results showed that 95% of international collaborations of scientific publications by Chinese-affiliated authors were co-authored with authors from 20 other countries, with 42.25% co-authoring with American-affiliated authors [61–64].

Figure 3 shows that Kyung Hee University, University Exeter and University of Cambridge are the most frequently affiliated institutions for research related to the keyword “aesthetic and Innovation.” These results align with Fig. 2 that the UK and China are the most frequently affiliated countries to research “Aesthetic and Innovation.”

The results of downloading scientific publication data with the search keywords “aesthetic and innovation” in the titles, abstracts and or keywords published from 2018–2022 in the Scopus database show that the UK, China, Germany, Russia and Spain are the
top 5 countries from the first author’s affiliation (Fig. 4) with the number of documents for each of the top 5 countries, as many as 11 for the UK and 4 publications each for China, Germany, Russia, and Spain. When integrated with the Scopus, Elsevier, ProQuest, and Google scholar databases, the countries with scientific publications related to the keywords “aesthetic and Innovation” are the UK, China, Germany, the United States, and Spain, with the number of documents in a succession of 98, 60, 45, 34 and 20 publications, all of which are in the form of article.

From Fig. 4, it can be seen that the UK has a great motivation to develop SMEs in its country, especially by using an innovation strategy. Although aesthetic innovations have not been widely carried out, the development of SMEs through various innovations has received support from the local government, ranging from moral support to the availability of budgets to develop small and medium-sized businesses in the UK [37, 65–67]. In addition to the UK, China is also a country that supports the development of its community industries, including small-scale industries, so the development of SME research in China is also included in the high category, including Germany, Russia and Spain.

From the countries and institutions that have been mapped, it is necessary to know the authors’ names who contributed to the research development related to the keyword “aesthetic and innovation.” Based on 51 articles found in Scopus from 2018 to 2022, it is known that the top ten authors each contributed to one study, considering that the topic...
Bibliometric Analysis of the Aesthetic Innovation on SMEs

Table 2. Top 10 most productive writers.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Writer</th>
<th>Number of Publications</th>
<th>Cites</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M. Pono, AR Munir, J. Maming</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>A Munir, G. Ilyas., J Maming</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>C Lee, JM Pung</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>AT. Ferdinand</td>
<td>1</td>
<td>—</td>
</tr>
<tr>
<td>5</td>
<td>M Buschgens</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>E Malliguh, C Wasike, Z Zoltan</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>7</td>
<td>C Dell’Era, S Magistretti, R Verganti</td>
<td>5</td>
<td>21</td>
</tr>
<tr>
<td>8</td>
<td>E Panfiluk</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>CL Chen</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>10</td>
<td>R. Lingannavar, PG Yammiyavar</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

of aesthetic innovation in SMEs is still very rarely done [19, 68, 69]. The ten (10) most productive writers are listed in Table 2. An author is said to be productive if every year he can produce at least 1 article that is cited or becomes ‘prior work’ for the research to be carried out.

The articles that have been found come from researchers from various universities and practitioners worldwide. Starting from Kyung Hee University, the University of Exeter, the University of Cambridge, Military Academy of Russia and the Business School of America. In addition, research results are conducted by practitioners from the Country Council of British, Sentio Research, BrisSynBio, and Louis. These results show a balance of research conducted between researchers from universities and practitioners who are directly engaged in the world of SME development through aesthetic innovation.

3.3 Co-occurrence Keywords

The joint occurrence of keywords published in a research journal can indicate the frequency of words that appear and are used most often in a research article. In this study, the extraction of words from the title and abstract is fully counted with a set minimum number of occurrences of 5. From the analysis results through VOS VIEWER, it is known that there are 144 co-occurrence connections with 9 clusters between 2018 and 2022.

Figure 5 shows that the concept of aesthetic innovation has been used as a research topic. However, seeing that the network connecting these keywords is still tenuous with thin nodules, it can be interpreted that “aesthetic innovation” is rarely used in research related to product development. SME food souvenirs.

If viewed from Fig. 5, it can be seen that ‘Performance,’ ‘Packaging,’ ‘Creative Industry,’ ‘Technology,’ ‘Design,’ ‘Innovation Capability,’ ‘Region,’ ‘Company,’ ‘Medium Enterprise’ and ‘Product Innovation’ are the ten most frequently used keywords in research related to SMEs.
The study’s results also found ten keywords that were the least common but influenced keyword links (see Table 3). The 10 most uncommon keywords show that research is still rare that discusses broadly and specifically. Of the ten keywords rarely used in research on SME development, especially in the food sector, three keywords show low density with faded visualization colors compared to other keywords, namely ‘social innovation,’ ‘aesthetic innovation,’ and ‘soft.’ innovations.’ This keyword that rarely appears is a recommendation for researchers and practitioners to conduct specific research related to these keywords. Keywords most often used in research related to SME innovation can be seen in Table 4.

The VOS Viewer can display the most influential or non-influential keywords in the overlay visualization. The discussion trend is shown by the existence of yellow
Table 4. Keywords most often used in research related to SME innovation.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Keywords</th>
<th>Total Link Strength</th>
<th>Occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Social Innovation</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Aesthetic Innovation</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Soft Innovation</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Evidence</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Innovation Process</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Innovation Practice</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Impact</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>Designer</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>Design Capability</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>Aesthetic Design</td>
<td>15</td>
<td>5</td>
</tr>
</tbody>
</table>

Fig. 6. Keyword overlay visualization.

From the results of the analysis above, it can be concluded that Scopus is a credible research article database and is specific to the keywords mentioned so that comprehensive bibliometric indicators are known, starting from the country, institution, and author’s name. In addition, it can also be seen the number of scientific publications related to nets related to research related to aesthetic innovations, especially in the field of SME souvenir food. As stated earlier, the fainter the color of the network shown, the more excellent the opportunity and need for further research on the topic [58, 70], in this case, there is ‘aesthetic innovation.’ The Keyword overlay visualization can be seen in Fig. 6.

4 Conclusion

From the results of the analysis above, it can be concluded that Scopus is a credible research article database and is specific to the keywords mentioned so that comprehensive bibliometric indicators are known, starting from the country, institution, and author’s name. In addition, it can also be seen the number of scientific publications related to
the research topic, namely “aesthetic innovation,” along with the types of publications such as articles, proceedings, or reviews (in this study, all documents from Scopus are in the form of Articles). From the analysis above, it is also known that the network of keywords between one study and another can be seen so that the most frequently used keywords and the least commonly used keywords by researchers can be identified.

4.1 Theoretical Implications

From the results of the analysis, it can be seen that there are 51 documents from 2018 to 2022 recorded in the Scopus database and from Google School as many as 200 documents, all of which are articles with the words “Packaging,” “Product Innovation” and “Design” as the most frequent keywords. Analyzed, so caution is needed for researchers who want to make these keywords research topics. In addition, the number of identified keywords, namely 144 keywords with 9 clusters, also requires researchers to conduct research with more actual topics to have a substantial originality value.

4.2 Further Research

The results of this study also have limitations, namely using only four research databases, Scopus, Elsevier, ProQuest, and Google Scholar, so it is believed that there are still many studies with related topics that have not been analyzed. Therefore, it is necessary to conduct a Bibliometric analysis using a more comprehensive database such as Scient Direct, JSTOR, PubMed Insight or the Directory of Open Access Journals. Regarding research carried out in the period 2018 to 2022, it is known that there are ten most uncommon keywords in research related to SME development, especially in souvenir eating. One of the minor common keywords is “Aesthetic Innovation.” Thus “Aesthetic Innovation” is a concept that provides excellent opportunities for researchers and practitioners to conduct further research.

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