RESEARCH ARTICLE

The resilience of food and beverage companies during the Covid-19 pandemic

Dhea Khanti Nathali*, Meysih Meliana, and Palpasha Suwal

Abstract: In the context of Covid-19 pandemic crisis, looking at companies survival has become a very important aspect. A crisis period becomes a test for a company’s resilience in facing external uncertainty that involving various aspects such as economic, social, and health. The aim of this research is to investigate to what extent of the companies in this sector are able to maintain stability, which is reflected in abnormal returns. This research applies quantitative method, and uses the normality test and the one sample test on capital market statistical data that reflects the company’s financial performance. The research questions involve what factors influence abnormal returns, how food and beverage companies adapt strategies during the pandemic, and the impact on operational and financial stability. The study results show that companies in this sector are succeeded in maintaining stability during the pandemic crisis. Recommendations for future studies include further exploration of factors that strengthen resilience that food and beverage companies are able to increase their survival in the future.

Keywords: Resilience, Companies, Covid-19 pandemic

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1. Introduction

Covid-19 pandemic has become a catalyst for profound changes in capital markets, particularly in the distribution food and beverage companies. The uncertainty of rapidly growing economic and dramatic changes in consumers behavior are fueling dynamic market reactions. While food and beverage companies have not been immune to its impact, the sector’s resilience has been highlighted positively (Marcella et al., 2022). Companies that successfully demonstrate high levels of resilience tend to have the ability to adapt quickly to change, evaluate and optimize their business strategies, and face uncertainty with courage (Dharmajaya et al., 2021). The resilience and ability of manufacturing companies to take opportunities advantage that arise during the pandemic illustrates the extent to which business resilience can provide a solid foundation for operational continuity amidst a challenging economic situation.

Previous studies discussing corporate resilience have shown a tendency to explore key factors that contribute to business resilience and sustainability amidst various challenges. These studies tend to identify adaptation strategies (Akmal & Arifa, 2023), innovation (Herfina et al., 2022), and risk management (Susetyo & Prasetyo, 2020) implemented by companies in facing economic, social, or environmental crises. Moreover, previous studies also tend to present conceptual frameworks and models that can be used to measure business resilience level (Hidayat et al., 2022). With a variety of approaches and methodologies used, previous studies have made valuable contributions to our understanding of how companies can face challenges and build long-term resilience.

The main aim of this study is to investigate and understand how food and beverage companies can survive during a crisis, particularly in the context of Covid-19 pandemic. This study aims to explore the key factors contributing to the resilience of these companies, including adaptation, innovation and risk management strategies they may employ. By focusing on the pandemic situation, the aim of this research is to provide in-depth insight into how companies in food and beverage sector face this unique challenge and how they maintain the stability and continuity of their operations. The questions posed involve details on how the resilience of food and beverage companies manifests during Covid-19 pandemic crisis, including specific strategies, operational adaptations and their impact on business performance.

This study is based on the argument that food and beverage companies have a unique ability to survive and even maintain stability in the midst of a crisis. The sector has successfully overcome significant external challenges in previous crisis situations. Food and beverage companies, as an integral part of the food supply chain, have specific strategies and operational flexibility that can support their resilience in difficult times. The need for food remains a priority for society, and therefore, companies in this sector have the potential to remain stable and even grow amidst the crisis.

2. Literature review
2.1. Resilience

The set of concepts, strategies, and practices that companies use to ensure their survival and success in a constantly changing and competitive business environment is referred to as resilience (Elali, 2021; Rashid & Ratten, 2021; Yohana, 2023). In this case, resilience focuses on survival strategies that are sensitive to market shifts, client preferences, and competitive factors. For example, understanding consumer behavior through market research and data analytics can help businesses make informed decisions and adjust their marketing initiatives (Anshari et al., 2019; Na & Kang, 2019). Decision
making is also important for a company’s survival in a dynamic and uncertain business climate (Elali, 2021; Nayal & Paul, 2021). Resilience emphasizes the importance of agile and adaptable decision-making procedures to prepare for various contingencies (Obrenovic et al., 2020; Posch & Garaus, 2020).

Not only strategies and concepts, but also tools such as information systems are crucial in resilience. Information systems can help companies collect, process, store and disseminate data and information, which is very important for effective decision making in the midst of a crisis (H. Li et al., 2019; Wang et al., 2021). Using information systems can also be useful for improving operational efficiency, increasing consumer knowledge, and promoting development-based marketing strategies (Polese et al., 2022; Tseng et al., 2022). Management systems, marketing automation tools, and data analytics platforms can help businesses streamline marketing activities and adapt quickly to environmental changes (Cui et al., 2022; Haleem et al., 2023). In essence, resilience requires the implementation of adaptive tactics, data-based decision making, and the use of information technology to ensure the survival and growth of the organization.

2.2. Company

The term “company” has a practical meaning as a legal entity founded by a group of people with the common goal of carrying out economic activities and pursuing profits (Purwadinata & Batilmurik, 2020). Companies range in size and structure from small startups to multinational corporations. Companies play an important role in the global economy, driving innovation, creating job opportunities, and contributing to economic progress (Coulibaly et al., 2018; Huggins et al., 2018). Corporate governance and management practices have received attention with an emphasis on the involvement of important stakeholders in driving corporate strategy and decision-making processes (Pedrini & Ferri, 2019). The concept of the company also extends to areas such as corporate social responsibility (CSR), where companies can also address environmental and social issues while conducting their operations (Morea et al., 2021).

Currently, not only national and multinational companies receive attention, but micro enterprises such as UMKM (Micro, Small and Medium Enterprises) also have their own place in the economic development of a country (Mekaniwati et al., 2021). Companies and UMKMs have similar identity as commercial entities, but their scale, structure and economic impact are very different. Micro enterprises are small businesses with limited employees, income and resources (Y. Li & Rama, 2015). Companies with varying ownership structures can have a major impact on global markets, while UMKMs are often operated by a single owner and play an important role in local economies by creating jobs and supporting regional supply chains (Barr, 2015; Hallak et al., 2013). The government continues to take steps to encourage UMKMs, recognizing the importance of grassroots entrepreneurship in economic development (Maksum et al., 2020).

2.3. Covid-19

Covid-19 as a health threatening disease has a high rate of transmission and mortality. The high risk posed by Covid-19 has caused various affected countries to make efforts to handle the pandemic effectively and efficiently. One of these treatments is to limit social activities, which has shown positive results (Noh et al., 2020; Yezli & Khan, 2020). In line with this, these policies are widely adopted by other countries experiencing a sharp increase in the transmission of Covid-19 infections (Lian et al., 2020; Sicard et al., 2020). However, this limitation has implications in several aspects. Hardiyati et al’s (2020) study shows that this handling policy in the Indonesian context has caused an economic decline.
The Covid-19 pandemic not only poses a threat to health, but also to the country’s economy. The slowdown of the economic system is strongly felt, particularly in the industrial, tourism, trade, transportation and investment sectors.

The pandemic handling has also created limitations within society. These limitations in the consumption of both goods and services are influenced by the loss of financial well-being in society (Vieira et al., 2021). Siddiqi et al (2021) show that vulnerability to limited access to food has been felt since the beginning of the emergence of Covid-19 virus. In line with this, Nuwematsiko et al (2022) show that in the context of poor countries, the pandemic has limited access to educational needs, decreased income and daily wages, and limited access to health. Most low and middle income countries, including micro and medium enterprises (UMKMs), experienced a downturn during the pandemic, even though they have the function of maintaining the food supply chain by paying attention to food security and nutrition in society (Nordhagen et al., 2021). Thus, it can be concluded that restricting mobility through lockdown implementation policies has become a crucial policy tool in limiting and even interrupting the virus spreading (Oka et al., 2021; Xue et al., 2021), however at the same time these policies have presented difficult choices for society (Aung et al., 2021).

3. Method

The study of company resilience, particularly in the context of food and beverage industry, has become very important in the midst of Covid-19 pandemic crisis. First, through a deep understanding of resilience, we can identify strategies and best practices that will enable companies to remain stable and perform optimally during this time of crisis. This information is not only useful for companies in the sector, but can also be a reference for other sectors facing similar challenges. Second, resilience studies can provide insight into how food and beverage companies can adapt to changing consumer behavior and changes in global supply chains. This is crucial in the context of the pandemic where consumer preferences and supply chains are experiencing profound shifts. Finally, a better understanding of resilience can also help in formulating more effective economic policies and strategies in supporting the continuity of this crucial industrial sector. Therefore, resilience studies become crucial to provide a holistic and practical view for companies and other stakeholders in facing Covid-19 pandemic crisis and similar situations in the future.

This research is a quantitative study that uses methods of normality testing and One Sample Test. Data collection was carried out over a one-month period, specifically in June to July 2021. A quantitative approach was chosen to enable in-depth statistical analysis of abnormal returns of food and beverage companies during Covid-19 pandemic. The primary data source came from direct test results involving capital market statistical parameters. In addition, secondary data were obtained from scientific journal articles as well as capital market reports accessed through IDX.co.id and Yahoo Finance websites. This approach is expected to provide a strong empirical foundation to answer research questions and achieve research objectives with optimal accuracy and precision.

The quantitative data analysis technique in this study involves two main steps, specifically the capital market normality test and the One Sample Test. First, in order to ensure that the distribution of abnormal return data for food and beverage companies complies with the normality assumption, a normality test is carried out. This analysis uses statistical approaches such as Kolmogorov-Smirnov or Shapiro-Wilk to evaluate the extent to which data can be considered to come from a normal distribution. Next, the One Sample Test is used to test whether the observed abnormal returns are statistically significant from certain expected values, such as the population mean value. This step utilizes inferential
statistical techniques to assess whether there is a significant difference between the abnormal return and the expected average value. By combining these two techniques, quantitative data analysis can provide a deep understanding of the extent to which food and beverage companies achieved significant abnormal returns in the capital markets during the Covid-19 pandemic.

4. Result

The resilience of capital market during the Covid-19 pandemic crisis can be observed through the normality testing of stock price movements and market variables. The results of the normality test as mentioned by Junaid et al. (2021) not only reveal the stock prices distribution but also provide an overview of the extent of the company’s resilience in facing Covid-19 pandemic crisis which is full of uncertainty and market fluctuations. As in the capital market normality test below (see Table 1).

<table>
<thead>
<tr>
<th>Code</th>
<th>Kolmogorov-Smirnova</th>
<th>Shapiro-Wilk</th>
</tr>
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<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>TMIN5</td>
<td>0.223</td>
<td>11</td>
</tr>
<tr>
<td>TMIN4</td>
<td>0.175</td>
<td>11</td>
</tr>
<tr>
<td>TMIN3</td>
<td>0.157</td>
<td>11</td>
</tr>
<tr>
<td>TMIN2</td>
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<td>11</td>
</tr>
<tr>
<td>TMIN1</td>
<td>0.173</td>
<td>11</td>
</tr>
<tr>
<td>TNOL</td>
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<td>11</td>
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<td>TPLUS1</td>
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<tr>
<td>TPLUS3</td>
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<td>11</td>
</tr>
<tr>
<td>TPLUS4</td>
<td>0.259</td>
<td>11</td>
</tr>
</tbody>
</table>

Source: processed by the author, 2023

In Table 1 above, it is observed that the returns of food and beverage manufacturing companies are normally distributed during Covid-19 pandemic. The company’s return can be measured through the significant value of the variable, which if it is below 0.05 indicates that it has not had a normal distribution. Conversely, if the variable’s significant value is above 0.05, it indicates that the company has a normal distribution. In this context, food and beverage companies show returns that approach a normal distribution. Returns with a normal distribution reflect that food and beverage companies are surviving and remaining stable amidst Covid-19 pandemic crisis. In addition to the normality test, a One sample test was conducted to determine significant differences in abnormal returns among food and beverage companies during Covid-19 pandemic (see Table 2).

<table>
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<tr>
<th>Code</th>
<th>T</th>
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<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>95% Confidence Interval of the Difference</th>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
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<td>-2491612384.</td>
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</table>
Table 2 above shows the results of the One Sample Test to determine significant differences in abnormal returns between food and beverage companies during Covid-19 pandemic. Each abnormal return value reflects a deviation from market expectations during Covid-19 pandemic crisis, which shows directly how food and beverage companies survive in this crisis situation. In this context, Table 2 shows that 10 (ten) food and beverage companies tend to remain stable and continue to survive even though they are in the era of Covid-19 pandemic crisis. As indicated by the results of the One Sample Test on the abnormal return of TPLUS4 company showing a sig. value (2-tailed) of 0.466 (>0.05), it means that food and beverage companies are still operating stably and surviving in the crisis situation of Covid-19 pandemic.

Based on the test results, including normality test and One Sample Test, it can be concluded that food and beverage companies exhibit a significant level of stability and resilience during the crisis situation of Covid-19 pandemic. The results of the normality test provide a description of a distribution that is close to normal, indicating the adaptability of the company’s capital market in dealing with fluctuations in share prices and other market variables. The One Sample Test also shows that food and beverage companies’ abnormal returns do not significantly deviate from market expectations, reflecting business resilience amidst economic uncertainty. Thus, the results of both tests provide a positive indication that this sector has been able to maintain its stability, even under serious economic pressure.

5. Discussion

The resilience of food and beverage manufcaturing companies amid Covid-19 pandemic crisis can be observed through the results of normality test and One Sample Test. The normality test provides an overview of the extent to which the data distribution follows a normal distribution pattern, which is an indicator of stability. With normality test results leading to a relatively stable data distribution, companies demonstrate reliability and consistency in their performance. Meanwhile, the One Sample Test provides further insight on the sample average which is stable and continues to increase significantly during Covid-19 pandemic.
19 pandemic crisis. 10 companies showed stable results, this indicates that despite economic pressure and uncertainty, food and beverage manufacturing companies managed to maintain their performance with a level of consistency that builds confidence in facing the crisis.

The distribution of abnormal returns that approaching to normal, stable, and resilience during Covid-19 pandemic crisis in food and beverage companies has positive implications for the capital market in the future after the pandemic. When a company is able to maintain its financial and operational performance in the midst of a crisis, investors and capital market players tend to see it as a sign of business continuity and resilience. This can create additional confidence in investments in the food and beverage sector. Investors see this sector as a relatively safe and stable place to place their investments, particularly since food and beverage products are basic necessities that continue to be in demand by consumers (Nordhagen et al., 2021). Therefore, the future capital markets may witness increased investor interest and confidence in food and beverage companies that have successfully navigated the pandemic challenges. These improvements may fuel sector growth, further investment in innovation, and a push to promote sustainability in global food supply chains.

The stability and resilience of food and beverage companies during Covid-19 pandemic crisis can be attributed to three important factors. First, the company has succeeded in implementing an effective adaptation strategy to overcome changes in market conditions caused by the pandemic. This includes adjustments to shifts in consumer behavior, PPKM policies, and changes in consumption patterns (Vieira et al., 2021). Second, proactive risk management and quick decision making in the face of uncertainty can make a significant contribution to a stable distribution of abnormal returns. Companies may have designed and implemented robust business continuity plans, enabling them to continue operating in difficult situations (Aung et al., 2021). Third, the adoption of digital strategies and innovation in operations can also play a role in maintaining the distribution of abnormal returns that is close to normal. All these factors, along with a focus on sustainability and corporate social responsibility create a solid foundation to keep abnormal returns distribution stable during the crisis and even post-pandemic.

The study of the resilience of food and beverage manufacturing companies during Covid-19 pandemic crisis shows an interesting comparison with other researches addressing resilience in various sectors. Most previous studies tend to focus on responses to financial crisis or natural disasters, while studies of food and beverage company resilience explore unique challenges arising from global health crisis. In general, what these studies have in common is the necessity to adapt and innovate in the face of uncertainty. However, studies of food and beverage companies reflect stronger business sustainability and growth potential through product diversification strategies and increased online distribution. This is different from some previous studies which may highlight cost-cutting measures or internal reorganization as the main response to the crisis. By focusing on these aspects, the study on resilience of food and beverage manufacturing companies contributes uniquely to our understanding of how companies can remain strong and adaptive amid changing global conditions.

Based on the findings of the study on the resilience of food and beverage manufacturing companies during the crisis, several recommendations can be proposed to support and enhance the resilience of this sector in the future. First, companies can consider increasing investments in digital transformation and technology to improve operational efficiency, increase flexibility in supply chains, and improve sustainability. Furthermore, it is important for companies to continuously monitor changes in consumer behavior and adapt
their marketing strategies and product portfolios according to evolving preferences. Government and financial institution support also needs to be increased, including providing fiscal incentives and financial assistance to encourage innovation and growth. In addition, cooperation between companies, government and other stakeholders can be improved to build a more resilient network in facing crises. By implementing these recommendations, food and beverage companies can build a more solid foundation to overcome future challenges and support the sustainable growth of this sector.

6. Conclusion

During the pandemic, the phenomenon of the sustainability and stability of food and beverage companies shows this sector ability to adapt and respond to the challenges faced. The key to this resilience may lie in the quick adaptation strategies to changes in consumers behavior triggered by the pandemic situations, such as the increased demand for online products and shifts in consumption patterns. Companies in this sector have also succeeded in maintaining smooth operations and supply chains, implementing strict health protocols, and using digital technology to increase production efficiency. In addition, product portfolio diversification and continuous innovation may also be key factors in maintaining competitiveness and responding to changing market needs. This sustainability reflects the resilience of food and beverage companies in facing the challenges of the pandemic, as well as the potential for this sector to continue to develop and make a positive contribution to the economy amidst global uncertainty.

While the study on the resilience of food and beverage manufacturing companies during the crisis provides valuable insights, there are some limitations that should be noted. First, the focus of this study may be more focused on the Covid-19 pandemic and may have limited generalizability to other crisis. The unique economic and social circumstances of the pandemic may influence the findings and resulting recommendations. Additionally, this study may not take into account differences in the scale and capabilities of companies within the food and beverage sector, which may influence their strategies and responses to the crisis. Furthermore, aspects such as environmental impact, sustainability and corporate social responsibility may be deepened to provide a more comprehensive picture of the sector's contribution to society. By being aware of these limitations, future studies can further enrich our understanding on the resilience of companies in facing various challenges.

Author Contribution Statement
Contributions of the authors in this article: Dhea Khanti Nathali contribute to collecting data dan drafters. Meysih Meliana contribute as an interpreters. Palpasha Suwal contribute as critically revising the article. All authors agree to take responsibility for all aspects of this work.

Disclosure of Interests
We have no conflict of interest to declare

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References


