

# Risk Management Analysis with Enterprise Risk Management (ERM) at UMKM Maestro Gelato in Karawang Regency

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## Abstract

This study aims to identify how implementing Risk Management can assist in managing and reducing potential operational risks. Risk management is used to analyze risks classified as low risk, medium risk, and high risk at UMKM Maestro Gelato. The Enterprise Risk Management (ERM) approach of the ISO 31000: 2009 guideline version is the research method used. This research also discusses the effect of Risk Management on predicting risks that can cause businesses to experience financial losses and other possible threats. This Enterprise Risk Management (ERM) approach uses 5 components of risk identification. The results of this study found 17 risks grouped into operational risk, financial risk, strategic risk, and hazard risk. With standardized Risk Management procedures and periodic evaluations, UMKM Maestro Gelato can avoid risks in running a business in the future.

## 1. Introduction

Micro, Small, and Medium Enterprises (UMKM) occurred an important role in the Indonesian economy. UMKM can be a primary national industry absorbing a lot of labor and creating jobs. In the management of UMKM, uncertainty is one thing that cannot be avoided in every business activity. Every business activity must have risks, the environmental situation which is an area of human association must contain risks for both internal and external parties. Risk is a form of uncertainty that cannot be avoided in business activities. Risks not only have a negative impact, but also risks can have a positive impact. The more complex the risks faced, the more business activities require Micro, Small, and Medium Enterprises (UMKM) occurred an important role in the Indonesian economy. UMKM can be a primary national industry absorbing a lot of labor and creating jobs. In the management of UMKM, uncertainty is one thing that cannot be avoided in every business activity. Every business activity must have risks, the environmental situation which is an area of human association must contain risks for both internal and external parties.

Risk is a form of uncertainty that cannot be avoided in business activities. Risks not only have a negative impact, but also risks can have a positive impact. The more complex the risks faced, the more business activities require identification, measurement, monitoring, and risk control. In diverse risks, implementing risk control measures is crucial for sustaining and growing the business, and enhancing its competitiveness in the market.

This intense competition in the industry sector requires business actors to be more careful in developing their businesses. Most of the UMKM industry is not sensitive to risk management. This is due to the limited resource conditions owned by the UMKM industry. Often business owners make decisions based solely on their financial condition. Based on these problems, it is necessary to analyze Risk Management in UMKM Maestro

Gelato. One way of controlling risk management is the implementation of Enterprise Risk Management (ERM) (Haryani & Risnawati, 2018)

Implementing Enterprise Risk Management (ERM) is an ongoing process in all aspects of business activities, according to ISO 31000: 2009 there are several steps in risk management from determining context, communication and consultation, risk assessment, monitoring review, and risk control (Cristofel et al., 2021).

The results of Sirait's research (2016) provide information that the use of ERM which focuses on company operations and successfully identifies 32 company risks that need to be prioritized to be properly controlled, including aspects of the buildup of buffer stock in the warehouse, discrepancies in the number of arriving goods and goods ordered from suppliers and handling warehouse capacity. Then Sihombing et al, (2024) reported the results of their research on Coffee Shop 90 Degrees and found 9 risks, one of which came from internal risks, namely, employees who do not comply with machine operating standards and can cause damage to the coffee machine. The results of Cristofel's research (2021) provide good information on ERM to assess the risk of the value of companies listed on the Indonesia Stock Exchange (IDX). His research provides information that the ERM approach to disclosing broader and better economic, environmental, and social potential can provide positive signals in the eyes of investors.

This study aims to identify how the application of Enterprise Risk Management (ERM) assists in managing and reducing potential operational risks to explain the risks classified as low risk, medium risk, and high risk at UMKM Maestro Gelato Karawang, is crucial for sustaining and growing the business, and enhancing its competitiveness in the market.

This intense competition in the industry sector requires business actors to be more careful in developing their businesses. Most of the UMKM industry is not sensitive to risk management. This is due to the limited resource conditions owned by the UMKM industry. Often business owners make decisions based solely on their financial condition. Based on these problems, it is necessary to analyze Risk Management in UMKM Maestro Gelato. One way of controlling risk management is the implementation of Enterprise Risk Management (ERM) (Haryani & Risnawati, 2018).

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## 2. Literature Review

### 2.1 Risk

Risk can be defined as an event that can harm business actors. Risk is often called a negative thing that can impact business. However, the possibility of risk Occurrence can be measured and identified. According to Djohanputro (2006), risks in companies are categorized into four types, namely:

1. Financial risk is an event of fluctuation in a company's financial targets or monetary measures due to fluctuations in macro variables.
2. Operational risk, which is the potential deviation from expected results. This can be caused by malfunction systems, human resources, technology, or other factors. Operational risk can be seen from internal or external factors where everything has to do with the business environment.
3. Strategic risk is a type of risk that can affect and provide strategic exposure to the business. A result of strategic decisions that are not under the internal and external environment.
4. Externalized risk, or hazard, is a deviation from the outcome of strategic exposures that can have a harmful impact on the potential closure of the business (Sirait & Susanty, 2016).

## 2.2 Risk Management

According to Darmawi (2016), risk management is an effort to find, analyze, and control risks in every company activity to obtain higher effectiveness and efficiency. Implementing Enterprise Risk Management (ERM) is an ongoing process in all aspects of business activity, according to ISO 31000: 2009 there are several steps in risk management from determining context, communication and consultation, risk assessment, monitoring review, and risk control.

Risk Management is a series of procedures and methodologies used to measure, identify, monitor, and control risks that exist in business operations. The purpose of implementing risk management is to reduce risks that are differently related to certain fields. Among them are avoiding failure, increasing profits, reducing production costs, dealing with waste, and similar outcomes. In its implementation, risk management involves all entities such as humans, the environment, organizations, and others.

## 2.3 Enterprise Risk Management (ERM)

ERM is a comprehensive and integrative framework for managing operational risk, market risk, credit risk, economic capital, and risk transfer to maximize business value. ERM has several conceptual frameworks put forward by ISO 31000: 2009, including, (1) mandate and commitment; (2) design of a framework for managing risk; (3) implementation of risk management; (4) monitoring and review of the framework; and (5) continuous improvement of the framework.

The risk management process according to ISO 31000 is an integrated part of the business process and is embedded in the culture and part of the decision-making process in the business. The risk management process has 7 main activities, as described in Figure 1 below. Then the probability measurement is described in Table 2 and the impact measurement is described in Table.3 below.



Fig. 1 The flow of risk analysis (ISO 31000:2009)

### 2.3.1 Risk Assessment

At this stage, an assessment of the results of risk identification is carried out. Risk assessment is based on the probability of occurrence and severity of impact. Probability is divided into five parts based on BPKP standardization, 2011, namely almost certain, frequent, moderate, rare and very rare. While the severity of the impact is divided into five levels, namely very high, large, medium, small and very low.

Table 2 Probability Measurement (BPKP, 2011)

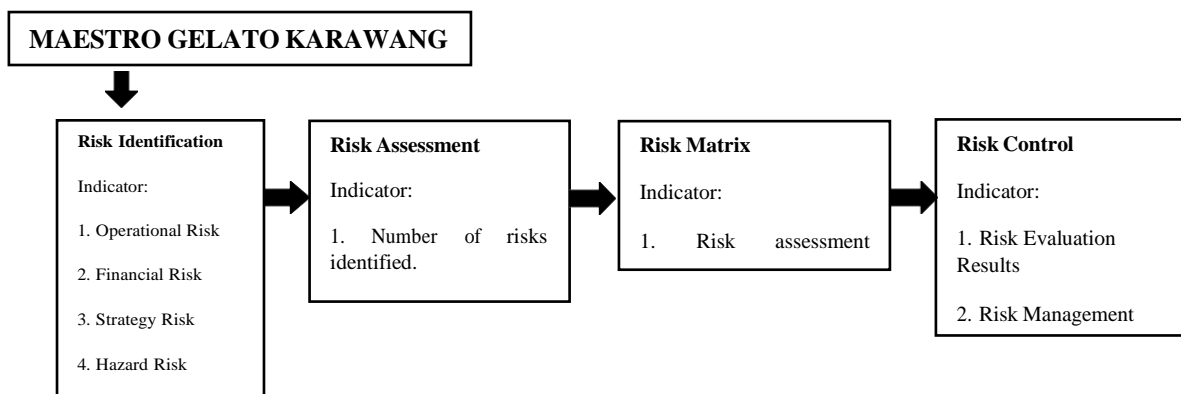
Level	Description	Detailed Description Example	Frequency
5	Almost certainly	its occurrence is expected in most situations	> 1 time a year
4	Often	its occurrence may appear in most situations	≥ 1 time a year
3	Moderate	its occurrence should appear at the same time	≥ 1 time in 5 years
2	Rare	its occurrence may appear at the same time	≥ 1 time in 10 years
1	Very Rare	events appear only under certain circumstances	< 1 time in 10 years

**Table 3** Impact Measurement (BPKP, 2011)

Level	Impact Rating	Description
5	Very high	Threatens the program and organization as well as stakeholders. Huge financial and political loss to the organization.
4	Great	It threatens the effective functioning of the program and the organization. Significant financial and political loss to the organization.
3	Medium	Disruptive to program administration. Considerable financial and political losses.
2	Small	Threatens the efficiency and effectiveness of some aspects of the program. Loss is less material and affects few stakeholders.
1	Very low	The impact can be handled at the routine activities stage. Loss is less material and does not affect stakeholders

**2.3.2 Risk Paradigm**

Risk identification and analysis that will be applied to Maestro Gelato UMKMs focuses on business operational activities, which are faced by every entrepreneur. In the identification and analysis of risks with the ERM approach at UMKM Maestro Gelato will only focus on the risk identification stage to the risk control stage.



**Fig. 2** Risk Paradigm

**3. Research Methods**

In this study, the method used is descriptive qualitative. According to Muhammad Ramdhan (Priadana & Sunarsi, 2021, p. 24) explains that qualitative research has a descriptive nature and tends to use analysis. The Enterprise Risk Management approach is used to reveal operational risk facts at UMKM Maestro Gelato. The research was conducted at Maestro Gelato, which is located at Jalan Arteri Ruko Galuh Mas Blok J1- 1, Telukjambe Timur District, Karawang Regency.

Primary data was collected through interviews and direct observation at the business location, while secondary data was obtained from literature studies on the Internet, books, articles, and other information.

**Table 4** Interview Guidelines (Research Protocol)

No.	Question	Question Details	Informant
1.	How does Maestro Gelato address business financial risks?	1. Does Maestro Gelato make a business financial report to see business performance activities? 2. Does the owner separate personal income from business income in the form of business development? 3. Has Maestro ever experienced capital shortages in a pandemic or otherwise? 4. Does Maestro receive business funding from the government for business development?	Owner of Maestro Gelato

2.	How does Maestro Gelato address its operational risks?	1. Has Maestro ever experienced difficulties in obtaining raw materials for the products it sells? 2. Is the price of raw materials unstable? 3. What are the steps to handle unsold products?	Maestro Gelato owner and staff
3.	How to deal with strategic risks at Maestro Gelato?	1. Does Maestro have a distinctive flavor variant from most other Gelato shops? 2. Does Maestro have a plan to develop a franchise business (franchise)?	Maestro Gelato owner and staff
4.	How does Maestro Gelato handle the risk of hazards that occur in the shop?	1. What does Maestro do when the facility breaks down? 2. How does Maestro maintain product quality?	Maestro Gelato owner and staff

The data analysis technique used uses the Miles & Huberman (2014) method, namely:

1. Data presentation is used to accumulate information that can then be presented in the form of words, pictures, graphs, and tables for easy understanding.
2. Data reduction is the process of selecting data that is in line with and relevant to solving problems in research.
3. Data Verification is the process of understanding and interpreting the meaning of the data set presented

### 3.1.1 Data Validation (Triangulation)

To prove the suitability between the data obtained by researchers and real facts, it is necessary to have credibility or data validity stage so that the data obtained becomes valid and can be accounted for. In the research triangulation applied is to sources and techniques. Source triangulation is a process where the author compares data obtained through interviews with one another. While triangulation of techniques involves checking data from the same source using different techniques.

## 4. Results and Discussion

### 4.1 Informant Profile

This research was conducted at Maestro Gelato located in Karawang Regency. The respondents involved were Maestro Gelato business owners and 2 respondents who came from Maestro Gelato UMKM employees.

### 4.2 Research Results

#### 4.2.1 Potential Risk Analysis

Analysis of potential risks in Maestro Gelato is based on ongoing business processes and the possibility of risks occurring in the future. Some of the risks that can arise from the course of business include human resources, productivity, raw material procurement, financial systems, and strategies.

**Table 4** Question and Answer

Question	Business Owner	Answer Employee 1	Employee 2
<b>Financial Risk</b>			
1. Does Maestro Gelato make a business financial report to see business performance activities? 2. Can the owner know exactly the profit & loss of the business? 3. Has Maestro ever experienced capital shortages in a pandemic or otherwise? 4. Does Maestro receive business funding from the government for business development?	1. Maestro Gelato does not prepare financial statements that include profit & loss, 2. Not sure due to limited human resources and time of the business owner. 3. Never, due to the impact of the pandemic businesses were unable to operate. 4. Not getting government assistance.	-	-
<b>Operational Risk</b>			
1. Has Maestro ever experienced difficulties in obtaining raw materials for the products it sells? 2. Is the price of raw materials unstable? 3. What are the steps to handle unsold products? 4. What if employees do not comply with the SOP?	1. One of them is oil. With rising oil prices and post-pandemic purchasing restrictions. 2. Like the example above, oil is also a raw material that has price instability. 3. Seeing the condition of the product quality and whether it is still worth selling or not. 4. Will be reprimanded and evaluated.	1. Once such staples as rice, oil, and eggs experienced price hikes and increased demand. 2. The price is often unstable, because every time we buy staples, we spend differently. 3. Perform checks according to SOP. 4. Reprimanded.	1. Frequent changes. 2. Sometimes reduced in price with more attractive offers. 3. Reprimand and self-evaluation.
<b>Strategy Risk</b>			
1. Does Maestro have a distinctive flavor variant from most other Gelato shops? 2. Does Maestro have a plan to develop a franchise business (franchise)? 3. How are Maestro Gelato's promotional efforts on social media? 4. Have you ever experienced promotional failures both online and conventionally?	1. We sell a wide selection of flavors that can attract repeat purchases. 2. For now, there is none, because it is still enough. 3. Promote with influencers. 4. Conventionally, the space for promo posters is incorrectly arranged. So it cannot be seen by customers.	1. Maestro's uniqueness offers many variants of yes in the Chiller. 2. Not yet. 3. Creating content on social media. 4. Failure took the form of less engagement on social media and conventional misplacement of posters.	1. We have the advantage of providing 18 flavors at once. 2. For now, there is no talk about that with Ibu. 3. Maximize content on Instagram. 4. I have but it didn't affect my sales.
<b>Risk Management</b>			
1. What does Maestro do when the facility breaks down? 2. How does Maestro maintain product quality? Has any Maestro employee	1. Improve as quickly as possible to not harm customers. 2. We use premium ingredients and follow SOPs for serving both food and gelato.	1. Reprimand customers who damage, if the item is expensive like a fine. 2. Using premium materials with an attractive appearance.	1. Penalize if the damage is severe 2. Made with premium and hygienic materials. 3. Never been exposed to hot water.

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ever had a work accident? Have experienced gas leaks and explosive noises. 3.Ever.

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This research applies the Miles and Huberman theory to identify risk management with ISO 31000:2009 standardization in Maestro Gelato UMKMs. The focus of this analysis is narrowed down to financial, operational, strategic, and hazard risks that may be faced by Maestro Gelato UMKMs. Through Miles and Huberman's theory, it was found that operational risks include human resources and production. Financial risks that can occur in the absence of making a profit/loss statement can have an impact on business cash flow. Strategic risks include product marketing, business development, and sales. Then the risk of danger includes facilities and work accidents that can occur at UMKM Maestro Gelato Karawang.

#### 4.2.2 Risk Analysis with ERM Method Based on ISO 31000:2009 Standardization

The following will be an ERM analysis referring to ISO 31000: 2009 standardization. This analysis refers to two studies, namely context analysis and risk assessment.

##### 1) Establishment of Context

The purpose of this research is to analyze risk management in UMKMs Maestro Gelato Karawang. The food industry has a fairly complex problem of uncertainty in business operations. The operational part by ISO 31000: 2009 in Maestro Gelato UMKMs starts with marketing planning, financial management, human resource management, and facility maintenance.

##### 2) Risk Assessment

Risk assessment was conducted on 17 risks to determine the response that must be followed up to achieve short, medium, and long-term goals. The assessment parameters are classified on a scale of 1-5 with standardization referring to BPKP 2011.

#### 4.2.3 Risk Identification

Risk identification at UMKM Maestro Gelato is based and focused on the operational process of running the business.

**Table 5 Risk Identification**

Risk Type	No.	Risk	Causes of Risk
A. Financial Risk	A1	Experiencing capital shortage	COVID-19 Pandemic
	A2	No financial report	Do not have the knowledge and time to prepare financial statements
	A3	No help from the government	Haven't gotten the chance
	A4	Not knowing the exact profit or loss of the business	Did not make a business financial report
B. Operational Risk	B1	Difficulty obtaining raw materials	Supplier supply
	B2	Gelato not sold	Variants that consumers don't like
	B3	Employees do not follow SOPs	Sales target demands
	B4	Unstable raw material prices	Market prices that have increased
C. Strategy Risk	C1	Does not have a characteristic Gelato flavor variant	Tends to sell market flavors
	C2	Does not reach sales to corporations	Lack of human resources to run it
	C3	Does not have a franchise business development plan	Still want to run the business as it is
	C4	Promotion failure using social media	Inappropriate target market
	C5	Failure of conventional promotion	Improper placement
D. Hazard Risk	D1	Stale food	Overproduction
	D2	Gelato melts	Damage to tools
	D3	Damaged facilities	Poor usage
	D4	HR injured due to equipment malfunction	Lack of regular checks

Based on Table 5. UMKM Maestro Gelato that UMKM Maestro Gelato has 17 identified risks that can occur in the business. In this industry, the threats that will be faced are financial, operational, and hazard risks.

#### 4.2.4 Risk Analysis

Risk Analysis is the stage of finding information about the possibility and impact that can occur in Maestro Gelato UMKMs. This assessment refers to the 2011 BPKP criteria with a probability and impact assessment scale

of 1-5 where scale 1 is considered the lightest risk, and 5 the most severe risk. The results of the risk identification measurement can be seen in Table 6.

**Table 6 Risk Analysis**

Risk Type	No.	Risk	Probability	Impact	Risk Value
A. Financial Risk	A1	Experiencing capital shortage	1	5	Medium
	A2	No financial report	2	3	Medium
	A3	No help from the government	1	2	Low
	A4	Not knowing the exact profit or loss of the business	3	3	High
B. Operational Risk	B1	Difficulty obtaining raw materials	2	3	Medium
	B2	Gelato not sold	1	2	Low
	B3	Employees do not follow SOPs	5	4	High
	B4	Unstable raw material prices	5	3	High
C. Strategy Risk	C1	Does not have a characteristic Gelato flavor variant	1	1	Low
	C2	Does not reach sales to corporations	3	2	Medium
	C3	Does not have a franchise business development plan	1	1	Low
	C4	Promotion failure using social media	3	2	Medium
	C5	Failure of conventional promotion	2	3	Medium
D. Hazard Risk	D1	Stale food	2	2	Low
	D2	Gelato melts	1	4	Low
	D3	Damaged facilities	4	3	High
	D4	HR injured due to an equipment malfunction	2	5	High

Based on the results of the risk analysis in the table above, it can be seen that several risks have critical points. In the severe risk category, five types of risks are most faced in the hazard risk group.

**4.2.5 Risk Evaluation**

Risk evaluation in ERM is the stage to create an evaluation matrix based on likelihood and impact values. The risk matrix can also be called a risk map. The author characterizes the indicators in different colors. a) red belongs to the high-risk category, b) yellow belongs to the moderate-risk category, and c) green belongs to the low-risk category.

Steps to make it easier to know the priority of risks to be handled by each assessment result of risk. The determination of the risk level refers to the theory of Godfrey (1996) which can be seen in Table 7.

**Table 7 Risk Matrix**

Probability	5			B4	B3	
	4			D3		
	3		C2, C4 (undesirable)	A4		
	2		D1 (acceptable)	A2, B1, C5 (undesirable)		D4
	1	C1, C3 (acceptable)	A3, B2 (acceptable)		D2	A1 (undesirable)
		1	2	3	4	5
Impact						

Based on the risk map above, mitigation will be carried out in the high-risk group. Moderate and low-risk groups will be evaluated periodically.

#### 4.2.6 Risk Control

Risk control is the recommended step to avoid risk, reduce risk, transfer risk, and even accept risk with risk control adjustments. The risk controls that can be applied by Maestro Gelato Karawang are described in Table 8.

**Table 8** Risk Control

Level	No.	Risk Name	Risk Control
High Risk	A4	Not knowing the exact profit or loss of the business	<ul style="list-style-type: none"> <li>• Prepare financial reports.</li> </ul>
	B3	Employees do not follow SOPs	<ul style="list-style-type: none"> <li>• Conduct monitoring and evaluation of worker performance.</li> <li>• Give severe sanctions to workers who do not comply with the SOP.</li> </ul>
	B4	Unstable raw material prices	<ul style="list-style-type: none"> <li>• Create a price plan with a specific price change matrix.</li> </ul>
	D3	Damaged facilities	<ul style="list-style-type: none"> <li>• Conduct regular checks.</li> <li>• Create bullet points on product depreciation values.</li> </ul>
Medium Risk	D4	HR injured due to an equipment malfunction	<ul style="list-style-type: none"> <li>• Perform regular tool checks.</li> <li>• Using body armor.</li> </ul>
	A1	Experiencing capital shortage	<ul style="list-style-type: none"> <li>• Cooperation as an effort to increase capital.</li> </ul>
	A2	No financial report	<ul style="list-style-type: none"> <li>• Prepare financial reports using the SIAPIK application.</li> </ul>
	B1	Difficulty obtaining rawmaterials	<ul style="list-style-type: none"> <li>• Cooperate with the raw material factory concerned.</li> </ul>
	C2	Does not reach sales tocorporations	<ul style="list-style-type: none"> <li>• Offer better benefits to corporations</li> </ul>
Low Risk	C4	Promotion failure on socialmedia	<ul style="list-style-type: none"> <li>• Determine an interesting theme.</li> <li>• Keeping up with trending topics.</li> </ul>
	C5	Failure of conventional promotion	<ul style="list-style-type: none"> <li>• Make interactive offers</li> <li>• Put up banners in strategic places.</li> </ul>
	A3	No help from the government	<ul style="list-style-type: none"> <li>• Submit a proposal to DINKOP UKM.</li> </ul>
	B2	Unsold gelato	<ul style="list-style-type: none"> <li>• Perform product differentiation.</li> </ul>
	C1	Does not have a characteristic Gelato flavor variant	<ul style="list-style-type: none"> <li>• Innovate product appearance.</li> </ul>
	C3	Does not have a franchise business development plan	<ul style="list-style-type: none"> <li>• Assess the benefits of a franchise business.</li> <li>• Conduct business deals.</li> </ul>
	D1	Stale food	<ul style="list-style-type: none"> <li>• Cover the product with <i>plastic wrap</i>.</li> </ul>
D2	Gelato melts	<ul style="list-style-type: none"> <li>• Using Ice Gel.</li> </ul>	

The results of this study are by the research theory reference (Sirait (2016) which successfully provides information that uses ERM which focuses on company operations and successfully identifies 32 risks that the Company must face. This is also in line with the opinion of (Sihombing et al, (2024) reporting the results of their research on Coffee Shop 90 Degrees and finding 9 risks, one of which comes from internal risks, namely, employees who do not comply with machine operating standards. This result supported by research (Sarasi et al., 2022) found 31 risks at the Al-Azhar Waqaf Institution, one of which was the wrong distribution of waqf proceeds which could hamper the waqf program being held.

## 5. Conclusion

Based on the results of the research that has been carried out at Maestro Gelato UMKM, the following conclusions are obtained:

- 1) 17 risks occur in business operations including business capital, business profit/loss financial statements, employees who do not comply with SOPs, work accidents, raw material prices, sales strategies, and unsold products. The risk matrix in this study shows 3 levels of risk, low, moderate, and high risk.
- 2) The results of the operational risk analysis at Maestro Gelato UMKMs found that in conducting operational risk analysis, it must use the steps that have been applied in the ERM method. Based on the results, the ERM method has 8 aspects, namely the internal environment, context determination, risk identification, risk assessment, risk response, and risk control. According to the results of the research, UMKM Maestro Gelato has not implemented aspects in analyzing operational risks.
- 3) The results of this study also provide recommendations for controlling the risks faced based on the author's perception.

## Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

## Author Contribution

The authors confirm contribution to the paper as follows: **study conception and design:** Siska Nur Agustin, Uus Mohammad Darul Fadli; **data collection:** Siska Nur Agustin; **analysis and interpretation of results:** Uus Mohammad Darul Fadli; **draft manuscript preparation:** Siska Nur Agustin. All authors reviewed the results and approved the final version of the manuscript.

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