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COSO's Enterprise Risk Management Framework in Agriculture Startup to Support the Achievement of SDGs Pillars

Ita Febrianti [a 1], Novita Novita [a]

[a] *Trilogi University, Indonesia*

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Abstract

COSO's Enterprise Risk Management (ERM) is considered to increase the added value of the firm. This study's primary purpose is to discuss the implementation of the COSO's ERM framework on agricultural startup in supporting the achievement of the SDGs pillars. Data collection methods used are questionnaires. This research uses qualitative and quantitative analysis using the Smart PLS application. It aims to determine the effect of implementation of COSO's ERM as an added value to agricultural startup as a goal to support the achievement of SDGs pillars. Overall, the implementation of COSO's ERM at the startup of *Sayurbox* has a significant effect in supporting the achievement of the economic, social and environmental SDGs pillars.

Keywords: COSO's ERM; SDGs; Startup, *Sayurbox*

1. Introduction

Indonesia is known as an agricultural country because most of its population works in the agricultural sector. To meet the needs (foods) of the growing population, agriculture in Indonesia establishes digital agriculture 4.0, which can help the agricultural industry in Indonesia to increase the productivity of agricultural products while adapting to the digital era 4.0 (Rahayu, 2019). Based on the current facts, agriculture 4.0 is still not entirely accomplished in Indonesia. The obstacles faced by the agricultural industry in Indonesia include the low quality of farmers education and the unpreparedness of human resources (public, farmers, government) in responding the changes in digital technology; uneven agricultural land conditions; weak access and mastery of technology (Care IPB, 2019).

Technological developments make the possibility of arising new risks and that could adversely affect productivity of the firm (Bardono, 2017). Therefore, a fundamental step, especially for agricultural

[1] Corresponding author.
E-mail address: itafbrnti@gmail.com

startups in facing the current digital era, is to create a risk management strategy to minimize risks. By implementing and developing risk management, agricultural startups will identify risks, both internal and external factors. This indicates the need a risk management framework that is expected to be able to deal with unexpected events that occur in agricultural startups. Therefore, this study tries to use the Committee of Sponsoring Organizations of the Treadway Commission (COSO) Enterprise Risk Management (ERM) model to improve the firm's approach to managing risk to meet the demands of the developing business environment (COSO, 2017).

Apart from the rapid changes in digital technology development, the world organization that is the United Nations (UN), has launched a program known as the Sustainable Development Goals (SDGs). This global program was ratified in September 2015 which will be implemented for the next 15 years (2015-2030). SDGs are an agreement on new development that encourages changes towards better sustainable development based on human rights, equality to promote social, economic, and environmental development. SDGs also apply universal, integrated, and inclusive principles so that it can be said that this program is indeed a program that can apply and correspond to the needs of life globally (Sutopo & Arthati, 2014). Through the COSO's ERM model, agricultural startups are expected to maintain their existence in the global market while supporting the SDGs pillars, which are expected to be implemented consistently, inclusively, and sustainably.

This study uses the startup of Sayurbox as the case study object because Sayurbox is one of the agricultural startups that places the top rank among the wider community, especially the millennials in Indonesia. This can be proven by the number of users of the Sayurbox application, which currently has more than 500,000 users. Besides, currently Sayurbox also has around 1000 business partners (farmers, farmer groups, and MSMEs). Startup of Sayurbox is expected to be a projection for agricultural startups in increasing the value of the agricultural industry sector to support the achievement of the SDGs pillars.

The COSO ERM process can create informative communication so that it can connect the entire COSO ERM process more effectively and efficiently. This is in accordance with the research of Julisar (2016) which states that information and communication are important means for firm to ensure that the implementation of internal control on risk management is in accordance with those determined by the firm. The application of COSO's ERM at Sayurbox is also considered to be able to reduce costs arising from risks. This is in accordance with the research of Pamungkas (2019) which states that the application of COSO's ERM as risk management is considered to improve the firm's performance.

The difference between this study and previous research is that previous research was limited to the application of the COSO ERM framework in increasing the firm's excellence which could be added value for the firm (Salifou, 2015). Meanwhile, the novelty of this research is to determine the effect of implementation of COSO's ERM as an added value to agricultural startups of Sayurbox to support the achievement of three pillars that is the economic, social and environmental SDGs. The importance of this study is to encourage technology-based agricultural firms to be able to develop businesses by including suppliers, in this case farmers, based on risk management analysis that can support the achievement of the SDGs pillars. The results of this study are expected to assist firms in increasing added value by developing an effective and efficient distribution of supply chain from farmers to end consumers. The implementation is also expected to help firms maintain the principle of going concern to support the pillars of SDGs that are in accordance with agricultural startups, so the title of this research is "COSO's Enterprise Risk Management Framework in Agriculture Startup to Support Achievements SDGs Pillars."

2. Literature Review

2.1. *Risk Management: COSO's ERM*

COSO's Enterprise Risk Management (COSO's ERM) is a framework that assists organizations in describing and defining risks. Risk management is applied to determine strategies following the vision and mission of the firm. Risk management is designed to identify potential events that could adversely affect on the firm, and manage risk based on risk appetite to ensure the achievement of firm's goals.

Figure 1 shows the COSO's ERM framework in a three-dimensional cube with components: (a) four vertical columns representing risk management objectives and (b) eight horizontal rows representing risk components. Several vertical columns describe the firm organization's level, from parent to subsidiary level.

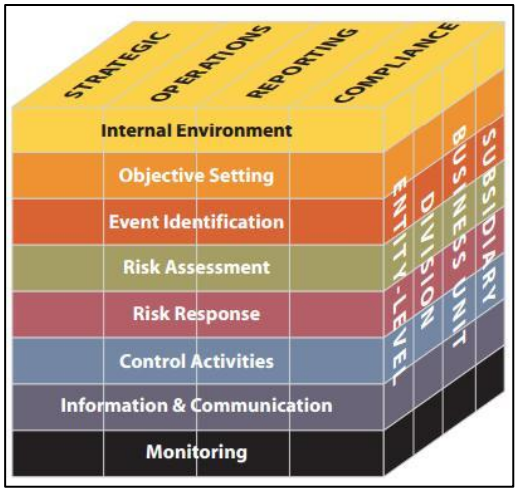

Figure 1. The COSO's ERM model

Source: CRMS Indonesia

The objectives of risk management in COSO's ERM are to ensure the implementation of the established strategies, ensure the effectiveness and efficiency of operations, ensure the reliability of financial reports, and ensure compliance with all applicable procedures and regulations. To achieve this goal, COSO's ERM formulates eight components of risk management implemented at each of firm organization's level.

2.2. *Sustainable Development Goals (SDGs)*

Sustainable Development Goals (SDGs) are a global plan launched by the United Nations (UN) regarding a new development agreement that encourages sustainable development changes based on human rights and equality to promote social, economic, and environmental development. SDGs are enforced with universal, integrated and inclusive principles to ensure that "No-one Left Behind". They strive to realize human rights to achieve gender equality and the empowerment of all women and girls. The SDGs are integrated, inseparable, and balanced with three sustainable development dimensions: social, economic, and environmental. In this study, three SDGs pillars are relevant to agricultural startups, including (Sutopo & Arthati, 2014):

- Social Development Pillar (achieving the fulfillment of fundamental human rights that are of a fair and equal quality to improve the whole community's welfare).

- Economic Development Pillar (achieving quality economic growth through sustainable employment and business opportunities, innovation, inclusive industries, adequate infrastructure, affordable clean energy supported by partnerships).
- Environmental Development Pillar (achievement of sustainable management of natural resources and the environment as a support for all life).

3. Method

3.1. *Population and Sample Research*

The population of this research is all Sayurbox application users or customers. The research sample consisted of several members selected from the population (Sekaran & Bougie, 2017). Sampling of respondents will be targeted to product buyers or those who have made transactions at Sayurbox so that they can provide objective answers. The sample to determine the number of respondents to the questionnaire to Sayurbox customers used in this study used the Wibisono formula. The Wibisono formula is used to find the number of samples in an unknown population. The research sample can be calculated in the following steps.

$$n = \left(\frac{Z\alpha/2.\sigma}{e}\right)^2$$

$$n = \left(\frac{(1{,}96).(0{,}25)}{0{,}05}\right)^2$$

n = 96,04 (round to 100)
n = 100 respondent

Information:
n = number of samples
Zα = table value (Z = 0.05)
σ = population standard deviation
e = error

3.2. *Method of collecting data*

In taking data as research material, data collection techniques are used, which include:

- Observation.
- Questionnaire.

3.3. *Independent Variables*

The independent variable is the stimulus variable, predictor, antecedent. Independent variables are variables that influence and cause a change to occur or the dependent variable (dependent variable) occurs (Sugiyono, 2017). In this study, the independent variable in question is the implementation of COSO ERM at the startup of Sayurbox.

Table 1. Independent variables

Independent Variables	Sub Variables	Indicators
COSO's Enterprise Risk Management	Internal Environment	1. Philosophy of risk management. 2. Appetite risk management. 3. The attitude of the board of directors and committees. 4. Integrity and ethical values. 5. Commitment to competence. 6. Assignment of authorities and responsibilities. 7. Human resource standards.
	Objective Setting	1. Effectiveness and efficiency of operations. 2. Finance report. 3. Compliance with regulations.
	Event Identification	1. Internal environment. 2. External environment.
	Risk Assessment	1. Inherent risk. 2. Residual risk.
	Risk Response	1. Avoiding risks. 2. Reducing risk. 3. Share the risk. 4. Accept the risk.
	Control Activities	1. Separation of duties. 2. Audit trail. 3. Security and integrity. 4. Documentation.
	Information & Communication	1. Relevant information. 2. Communication.
	Monitoring	1. Implementing a sustainable management reporting mechanism. 2. Periodic reporting of risk management processes. 3. Monitoring and reporting the status of internal audit and external audit findings on a regular basis. 4. Updating of risk information.

Source: Faiz Zamzami, Ihda Arifin Faiz, Mukhlis (2013), Audit Internal Konsep dan Praktik, Gadjah Mada University Press.

3.4. *Dependent Variables*

The dependent variable is the output, criterion, and consequent variable. The dependent variable is the variable that is affected or that is the result of the emergence of the independent variable (independent variable) (Sugiyono, 2017). In this study, the dependent variable in question is the seven SDGs targets contained in the three sub-variables of SDGs (economic, social, and environmental).

Table 2. Dependent variables

Dependent Variables		Sub Variables	Indicators
Target SDGs	Economic	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (Goal 8).	Ensure inclusive and sustainable economic growth.
		Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Goal 9).	Creating employment in the industrial sector which will significantly affect the contribution of the industrial sector to GDP in a sustainable manner.
	Social	End poverty in all its forms everywhere (Goal 1).	End extreme poverty.
		End hunger, achieve food security and improved nutrition and promote sustainable agriculture (Goal 2).	Ensure a sustainable food production system with high yields and protect land resources as well as provide education to farmers.
	Environmental	Ensure availability and sustainable management of water and sanitation for all (Goal 6).	Ensuring safe water quality and efficient use of water today and in the future.
		Take urgent action to combat climate change and its impacts (Goal 13).	Reducing GHG emissions and non-energy related chemicals through improved practices in agriculture.

Source: Agus Sutopo, Dian Fitriana Arthati, Utari Azalika Rahmi (2020), Kajian Indikator Sustainable Development Goals (SDGs).

3.5. *Data Analysis Method: Descriptive Analysis and Verification*

The results of the research questionnaire were processed and analyzed using descriptive analysis and verification analysis. The validity test is conducted to test whether a questionnaire is valid or not. The verification analysis carried out in this study uses the Partial Least Square (PLS) application. The analysis was carried out in three stages that is outer model analysis, inner model analysis, and hypothesis testing.

1. Outer Model Analysis:

a. Validity test.

b. Reliability Test.

2. Inner Model Analysis:

a. Path Coefficient.

The criteria for the probability / significance value (P-Value) are as follows:

- If the P-Value <0.05, then the effect of variable X on variable Y is significant.
- If the P-Value> 0.05, then the effect of variable X on variable Y is not significant.

b. The coefficient of determination (R2). In the coefficient of determination, the value of 0.67 means strong, 0.33 is moderate, and 0.19 is weak (Ghozali & Latan, 2015).

3. Hypothesis Testing.

Testing the hypothesis using a statistical value, for alpha 5%, the t-statistic value used is 1.96. The criteria for acceptance / rejection of the hypothesis are as follows:

- If the t-statistic value> 1.96, then the hypothesis is accepted.
- If the t-statistic value <1.96, then the hypothesis is rejected.

4. Results

4.1. *Descriptive Analysis of Respondents*

Table 3. Respondent profile

Item	Description	Frequency (n=100)	Percentage
Age	<20 years	16	16%
	20-30 years	60	60%
	31-40 years	9	9%
	>40 years	15	15%
Profession	Student	51	51%
	Government Employees	9	9%
	Private Employees	34	34%
	Entrepreneur	2	2%
	Housewives	4	4%
Purchase Intensity	1-3 times	89	89%
	4-6 times	9	9%
	>6 times	2	2%

Source: Questionnaire Data, processed (2020).

Based on the results of the questionnaire, 100 respondents indicated that the majority of Sayurbox customers were people aged 20-30 years. This can be concluded that Sayurbox users are dominated by millennials. It is also because millennials are more active in online shopping and millennials are known for their tech-savvy characteristics. Shopping for agricultural products through the Sayurbox application is more familiar among millennials who are attached to information technology.

4.2. *Descriptive Analysis of COSO ERM*

Figure 2. Radar chart of COSO's ERM elements

Based on data results, the indicator for determining the internal business environment that has the lowest scale is an indicator of risk management philosophy. The price of Sayurbox products projects the risk management philosophy. The questionnaire results stated that the product price at Sayurbox was still relatively high for the middle to lower class. This is based on the quality of the products offered by Sayurbox, which also have a high selling value. In the objective setting process, one of the practices is

to require customers to choose a product delivery schedule of at least D + 1 order to ensure the product is freshly prepared. Besides, the operation process from the farmer's harvest is sent directly to the Sayurbox warehouse for quality control before being sent to customers is a step which is considered effective and efficient. This simple crop distribution chain minimizes the time and involvement of many parties.

The event identification process can be seen from two sides that is the internal and external environment. In identifying internal risks, Sayurbox is very concerned with product quality and customer service. As for Sayurbox's external environmental risk, it can be projected to increase prices caused by changes in market prices and high demand or high production costs. There are groups of Sayurbox customers who tend to prioritize product prices over the quality of the product itself, so they prefer other agricultural startups that offer lower prices if there is an increase in prices for Sayurbox products.

The next process is a risk assessment consisting of inherent and residual risks. One of the projections of inherent risks that can arise in the Sayurbox business process is the appearance and quality of the Sayurbox products ordered, which are the same as those stated in the Sayurbox application. Whereas the projected residual risk that can arise is one of which is the change in the price of food staples on a national scale affecting changes in the price of Sayurbox products. After carrying out a risk assessment, a risk response process is carried out, which consists of avoiding, reducing, sharing, and accepting risks. Some of Sayurbox's efforts in responding to risks are making a policy to temporarily close product orders if there is a force majeure, and provide guarantees to compensate customers if the product that comes does not match what was ordered through the application.

The next step is to carry out control activities that is by segregation of duties such as dividing types of customer complaints based on problems experienced by customers. Another practice that Sayurbox has done is storing the entire list of customer transactions in the “My Order” feature on the Sayurbox application. This is to anticipate if there are customer complaints related to purchasing transactions. In carrying out a risk management framework, information and communication processes are needed to connect all these processes. To implement the process, Sayurbox is always updated on price lists, stock quantities, and promos to provide clear information for customers and provides a "help" feature in the application to inform customers about the transaction process. Meanwhile, to create interaction between all Sayurbox employees, Sayurbox management made a policy to implement a work culture in an open and friendly atmosphere. This makes every employee have open communication so that every update of information is always communicated to all stakeholders at Sayurbox.

The last COSO’s ERM process is monitoring. The monitoring carried out by Sayurbox includes always updating the number of product stocks and changes in product prices in the application; see customer ratings of Sayurbox listed in the application review; provides facilities for customer assessment of Sayurbox services and products after the transaction process is complete. So, it can be concluded based on Figure 3, the implementation of all COSO’s ERM sub-variables to Sayurbox is good because it shows an average scale of 3.4.

4.3. *Descriptive Analysis of SDGs Pillars*

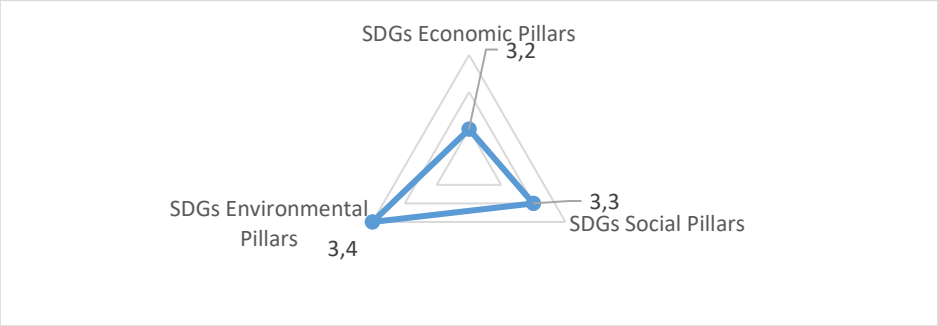

Figure 3. Radar chart of SDGs pillars

Based on Figure 3, when viewed in total, the application of the SDGs economic, social and environmental pillars on Sayurbox is classified as good because it shows an average scale of 3.3.

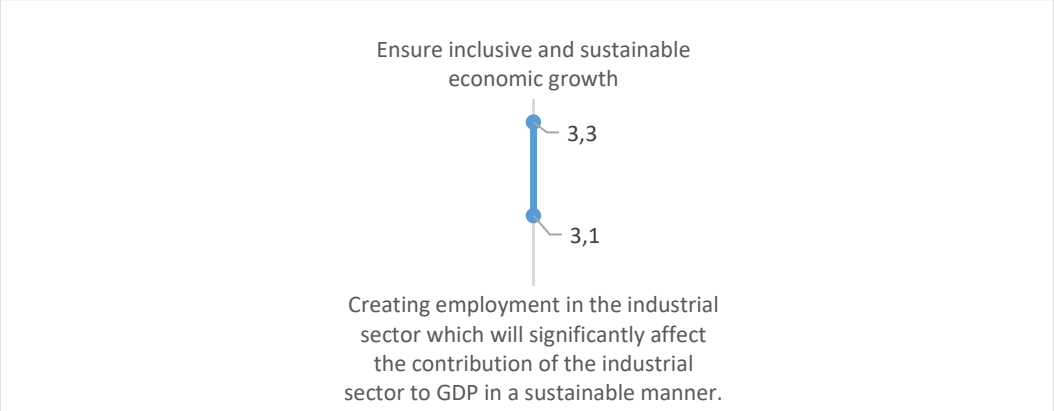

Figure 4. Radar chart of SDGs economic pillar

In achieving the SDGs economic pillar, efforts of Sayurbox include distributing high-quality and fresh agricultural products through an online platform. This makes it easier for people to get vegetables, fruit, spices and processed meat products without going to the market. By buying products at Sayurbox, the community can help the welfare of farmers. As more and more farmers partner with Sayurbox, agricultural activities in the village become more productive so that jobs can be created in the agricultural sector.

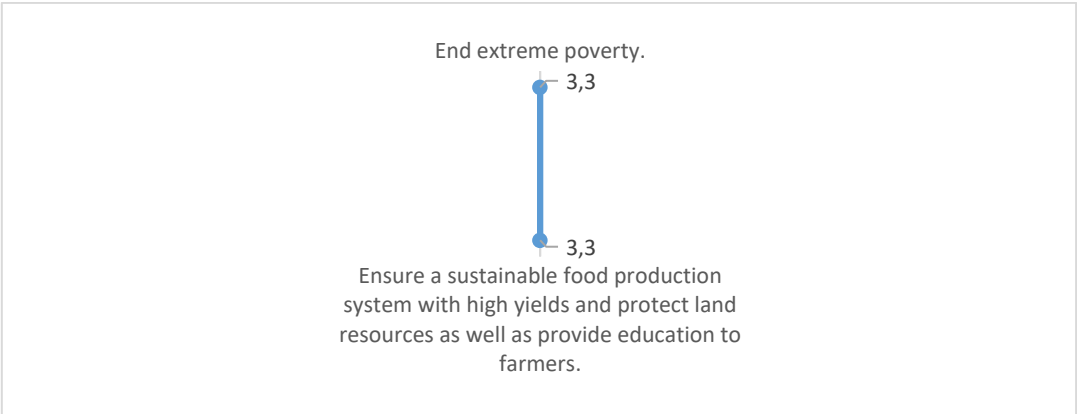

Figure 5. Radar chart of SDGs social pillar

The SDGs social pillar is a development to achieve the fulfillment of fundamental human rights that are just and equal and to improve the welfare of the entire community. The SDGs social pillar has an achievement indicator which can be seen in Figure 5 which Sayurbox considers achievable that is by ending extreme poverty; and ensure a sustainable food production system with high yields and protect land resources and provide extension services to farmers.

To ensure a sustainable food production system, apart from offering high quality products, Sayurbox also offers "imperfect produce" products that are still suitable for consumption. "Imperfect produce" is a crop product with a physical shape that tends to be imperfect (smaller, defective, has a different color from perfect produce). "Imperfect produce" can be caused by conditions of agricultural land or weather and environmental climates that are not good for farmers' harvests. However, the yields of "imperfect produce" products still have the same taste as perfect produce. Therefore, Sayurbox educates the public that "imperfect produce" does not always turn into waste (not suitable for consumption). This effort is considered to be able to guarantee food production, especially for "imperfect produce" which has tended to be food waste.

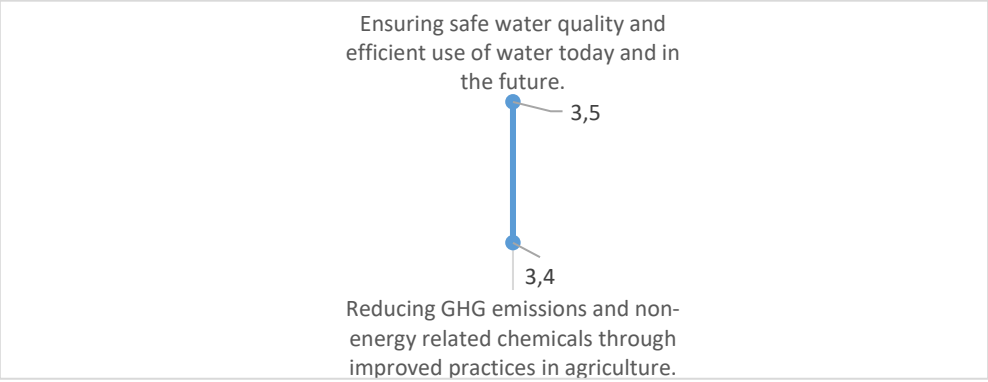

Figure 6. Radar chart of SDGs environmental pillar

The SDGs' environmental pillar is an effort to achieve sustainable management of natural resources and the environment. The practices carried out by Sayurbox in this case include not using preservatives or chemicals in organic products; socializing the "anti-plastic" movement in the use of product packaging; provides information regarding the harvest production process in a rural environment on the application; and paying attention to environmental conditions in the area of farmers (business partners), especially those that produce "imperfect produce" harvests.

4.4. *Verification Analysis*

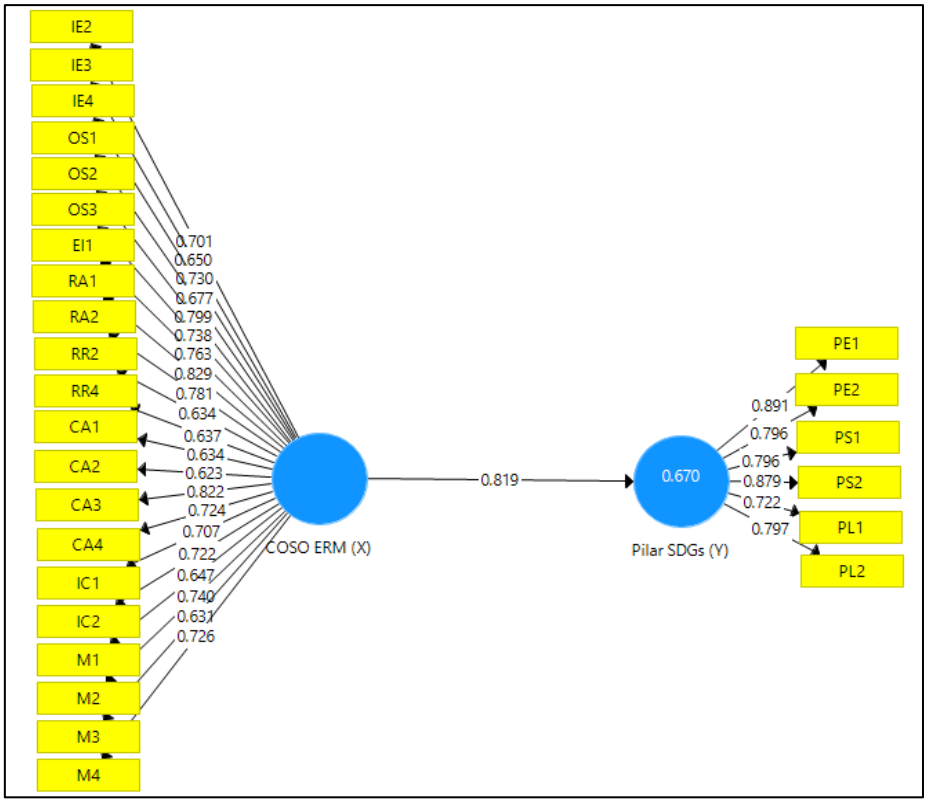

Figure 7. Loading factor value

Based on Figure 7, the COSO's ERM indicators that have a loading factor value below the minimum limit (0.6) that is IE1, IE5, IE6, IE7, EI2, RR1, RR3. However, overall, the eight elements of COSO's ERM that is the Internal Environment (IE); Objective Setting (OS); Event Identification (EI); Risk Assessment (RA); Risk Response (RR); Control Activities (CA); Information & Communication (IC); Monitoring (M), has a loading factor value above the minimum limit. This is also similar to SDGs Pillars indicators (Economic Pillar, Social Pillar, and Environmental Pillar) which have a loading factor value above 0.6. Overall, there are 75% of the COSO's ERM indicators and 100% of the SDGs pillars which are considered adequate and have good validity.

4.5. *Outer Model Analysis*

4.5.1 *Convergent Validity COSO ERM Test*

Table 4. Convergent validity test results on the COSO's ERM indicators

No.	COSO's ERM Components	COSO's ERM Indicators	The COSO's ERM indicators accepted in the convergent validity test
1	Internal Environment	Philosophy of risk management	X
2		Appetite risk management	√
3		The attitude of the board of directors and committees	√
4		Integrity and ethical values	√

No.	COSO's ERM Components	COSO's ERM Indicators	The COSO's ERM indicators accepted in the convergent validity test
5		Commitment to competence	X
6		Assignment of authorities and responsibilities	X
7		Human resource standards	X
8		Effectiveness and efficiency of operations	√
9	Objective Setting	Finance report	√
10		Compliance with regulations	√
11	Event Identification	Internal environment	√
12		External environment	X
13	Risk Assessment	Inherent risk	√
14		Residual risk	√
15		Avoiding risks	X
16	Risk Response	Reducing risk	√
17		Share the risk	X
18		Accept the risk	√
19		Separation of duties	√
20	Control Activities	Audit trail	√
21		Security and integrity	√
22		Documentation	√
23	Information & Communication	Relevant information	√
24		Communication	√
25		Implementing a sustainable management reporting mechanism	√
26	Monitoring	Periodic reporting of risk management processes	√
27		Monitoring and reporting the status of internal audit and external audit findings on a regular basis	√
28		Updating of risk information	√

Based on Table 4, in particular, there are several COSO's ERM indicators that have not been able to support the achievement of the SDGs pillars, including the risk management philosophy. The criteria for the risk management philosophy are projected at the price that Sayurbox offers to customers. This shows that the product price criteria as an assessment of risk management philosophy have not been able to support Sayurbox in achieving of the SDGs pillars, especially the economic and social pillars. This is because the price of Sayurbox products is considered not flexible enough for all people, especially the lower middle class.

Another COSO's ERM indicator that is considered unable to project the COSO's ERM indicator towards achieving the SDGs pillars is commitment to competence. Commitment to competence is projected by providing information in the application that every purchase of Sayurbox products will help improve the welfare of farmers. This means that these efforts have not been strong enough to support the achievement of the SDGs pillars by making customers aware that by buying Sayurbox products, the community can help improve farmers' welfare. Besides, indicators of the assignment of authority and responsibility and HR standards are also considered unable to project the COSO's ERM

indicator towards the achievement of the SDGs pillar. This can be due to the fact that there are still many customer complaints about Sayurbox services and products, so Sayurbox needs to improve HR quality standards for customer service.

In the risk identification process, risks that come from the external environment, in this case, are competitors who are considered unable to project the COSO's ERM indicator in achieving the SDGs pillars. There are still people who prefer other startups with lower product prices than Sayurbox if the price of Sayurbox products has increased. Besides, in responding to risks, efforts to avoid and share risks are also considered not to project the COSO's ERM indicator in achieving the SDGs pillars. However, there are still indicators that Sayurbox does to respond to risk and is considered to be able to project the COSO's ERM indicator in achieving the SDGs pillars that is reducing and accepting risk indicators.

4.5.2 *Construct Reliability Validity*

Table 1. Value of construct reliability validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
COSO ERM (X)	0.951	0.956	0.956	0.508
Pilar SDGs (Y)	0.898	0.904	0.922	0.665

In Table 5, it can be seen that the Cronbach's Alpha, rho_A, and Composite Reliability values of variable Y (SDGs Pillars) and variable X (COSO's ERM) produce values above 0.7, which means that the entire construct has high reliability. Meanwhile, the AVE value shows that the resulting value is above 0.5 in variable Y (SDGs Pillars) and variable X (COSO's ERM), meaning that there is no convergent validity problem in the model being tested.

4.5.3 *Discriminant Validity*

Table 2. Value of discriminant validity (HTMT)

	COSO ERM (X)	Pilar SDGs (Y)
COSO ERM (X)		
Pilar SDGs (Y)	0.859	

The results of the discriminant validity test:

COSO's ERM (X) SDGs Pillars (Y) = 0.859 < 0.90 (valid)

The analysis results show that there is no discriminant validity problem and the relationship between variable X (COSO's ERM) and variable Y (SDGs Pillars) is valid.

4.6. *Inner Model Analysis*

4.6.1 *Path Coefficient*

Table 3. Value of path coefficient

	COSO ERM (X)	Pilar SDGs (Y)
Pilar SDGs (Y)		
COSO ERM (X)		0.819

The path coefficient test result shows a positive value of 0.819, so the influence of the relationship between variable X (COSO's ERM) on variable Y (SDGs Pillars) is unidirectional. This means that if the value of the variable X (COSO's ERM) increases / increases, then the value of the Y variable (SDGs Pillars) also increases / increases. The results of the analysis of the probability / significance test in the table show that the P-Value is below 0.05 (0.000), meaning that the effect of variable X (COSO's ERM) on variable Y (SDGs Pillars) is significant.

4.6.2 *The Coefficient of Determination (R2)*

Table 4. Coefficient of Determination Value (R Square)

	R Square	R Square Adjusted
Pilar SDGs (Y)	0.670	0.667

The table above shows that the R2 (R Square) value is 0.670 which means strong. This shows that the ability of variable X (COSO's ERM) to explain the variant of variable Y (SDGs Pillars) is strong.

5. Discussion

5.1. *The Effect of COSO's ERM to Support Achievements of the SDGs Pillars*

Hypothesis testing is done by using a comparison of the t-table and t-statistic values. Table 10 shows that the t-statistic value is 27,321 (> 1.96), meaning that the hypothesis is accepted or the implementation of COSO ERM at the startup of Sayurbox has a significant effect on the achievement of the economic, social, and environmental pillars in the SDGs target.

Table 5. P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
COSO ERM (X) -> Pilar SDGs (Y)	0.819	0.827	0.030	27.321	0.000

In the first step in the COSO's ERM process, Sayurbox has carried out a policy towards the internal environment of its business by setting a target market that tends to the millennials and housewives. This is to adjust the focus of Sayurbox marketing and services so that they can achieve the goals they want to achieve. Therefore, the implementation of COSO's ERM is considered to provide certainty that Sayurbox goals can be achieved. This is in accordance with previous research which states that COSO's ERM can guarantee firms to achieve their business goals (Soetedjo & Sugianto, 2018).

In terms of implementing internal environmental indicators regarding risk management appetite, Sayurbox always takes advantage of opportunities to attract customer purchasing power through promos or discounts. This implementation is considered capable of enabling Sayurbox to support the SDGs economic pillar's achievement in terms of ensuring inclusive and sustainable economic growth. By providing promos or discounts and submitting friendly and polite information, it can increase people's purchasing power to increase sales figures. This increase in sales can drive economic growth, especially in the digital economy business (Sayurbox). It is also considered to improve business partners' welfare (farmers, farmer groups, MSMEs) who can support the SDGs social pillar in ending extreme poverty, especially for rural farmers. Therefore, the indicator of risk appetite for management at Sayurbox is considered to support the achievement of the SDGs economic and social pillars.

Sayurbox is considered to have implemented the objective-setting process in COSO's ERM as a business strategy. Sayurbox has the vision to produce fresh products directly from farmers and provide easy access for all Indonesians. This is in accordance with Sayurbox's identity with its hashtag "Fresh Every Day" which distributes products ordered by customers directly from farmers. This is considered to support the achievement of the SDGs social pillar in terms of ensuring a sustainable level of food production with high yields. After the customer completes the checkout order process on the Sayurbox application, the products are harvested directly from the farmers to the Sayurbox warehouse. In the Sayurbox warehouse, products undergo a quality control process to be prepared as best and as safe as possible and undergo a packaging process. Sayurbox uses paper bags and cardboard as product packaging to reduce the use of plastic. This is considered to support the SDGs environmental pillar in terms of reducing chemicals that are not related to energy through improved practices in agriculture.

In the event identification process, Sayurbox is considered able to optimally identify internal risks that can help Sayurbox in supporting the SDGs pillars. In practice, Sayurbox provides a blog feature on the application regarding information or writing about the benefits of agricultural products and provides report in tips and tricks in processing vegetables or fruits to customers. With these efforts, Sayurbox can attract people attention to shopping for products at Sayurbox to increase the business value which is considered to be able to support the SDGs economic pillar in terms of ensuring sustainable economic growth and supporting the SDGs social pillar in ending extreme poverty.

In carrying out the vision and mission, Sayurbox has assessed and responded to various risks that arise (risk assessment) into two types of risk that is inherent risk and residual risk. Based on the loading factor value test, the risk assessment conducted by Sayurbox helps the firm increase their productivity so that they can support the SDGs pillars. This is in accordance with the research results of Handoko, Septianto, and Alyssa (2019), which state that one way to identify risks that will affect firm's productivity is to conduct a risk assessment. In conducting an inherent and residual risk assessment, one of efforts of Sayurbox is to provide customers with original and fresh form and quality products as stated in the Sayurbox application. In this case, Sayurbox has quality agricultural products standards to produce fresh products and have a superior taste. Therefore, Sayurbox provides counseling to farmers about planting superior seeds with efficient water use to not damage the environment. This is in accordance with the achievement of the SDGs environmental pillar to ensure the quality and efficient use of water.

With fresh and high-quality crops, this can also increase customer loyalty to affect the amount of demand for the supply of Sayurbox products. Automatically, Sayurbox will continue to expand its product delivery services to other cities in Indonesia. The bigger the Sayurbox business, the more job opportunities there are. In rural areas, people can be motivated to farm and easily access markets without involving too-long supply chains. While in the city, Sayurbox can open jobs as Sayurbox employees from working in office operations, warehouse operations, and delivery. This is following the SDGs economic pillar that is achieving quality economic growth through sustainable employment opportunities and supported by partnerships, as well as the SDGs social pillar in terms of achieving the fulfillment of quality fundamental human rights fairly to improve the welfare of the whole society.

To deal with the risks that arise, Sayurbox has made efforts to reduce risks. Sayurbox also carries out control activities with various efforts, ensuring the level of confidentiality of personal data (name, telephone number, address). The efforts are considered to be able to increase added value to Sayurbox and maintain customer loyalty. With that, the income of farmers, suppliers, and MSMEs (business partners) can increase. This is considered to support the SDGs economic pillar in terms of creating jobs in the industrial sector and support the SDGs social pillar in terms of ensuring a sustainable food production system with high yields. Meanwhile, control activities in the packaging process of Sayurbox products are considered to support the achievement of the SDGs environmental pillar in terms of reducing the use of chemicals that can damage the environment through improved practices in agriculture. This is because Sayurbox uses paper bags and cardboard as product packaging instead of using plastic, thereby reducing the use of chemicals or materials that cause environmental pollution.

The COSO's ERM process that Sayurbox has implemented creates an informative communication line to connect the entire process. This is in accordance with the research of Julisar (2016) which states that information and communication are essential means for firms to ensure that the implementation of internal control on risk management is following those determined by the firm. The application of COSO's ERM at Sayurbox is also considered to reduce costs arising from risks. This is in accordance with the research of Pamungkas (2019) which states that the application of COSO's ERM as risk management is considered to improve firm's performance. Overall, COSO's ERM in Sayurbox can increase the effectiveness and efficiency of marketing at Sayurbox in supporting Sayurbox business partners' welfare, especially farmers.

6. Conclusions

Based on the results, overall, the practice of COSO's ERM elements in Sayurbox is considered as sufficient to support the achievement of economic, social, and environmental pillars in the SDGs target. In achieving the SDGs economic pillar, Sayurbox, through the implementation of COSO's ERM can open opportunities by creating jobs in the industrial sector, especially the agricultural industry. Sayurbox can also help farmers cut excessive supply chains. By partnering with Sayurbox, farmers can obtain an effective and efficient supply chain ecosystem. Meanwhile, in achieving the SDGs social pillar, the implementation of COSO's ERM at Sayurbox is considered to be able to contribute to reduce poverty by helping farmers to access final buyers.

In achieving the SDGs environmental pillar, the implementation of COSO's ERM can help Sayurbox reduce the use of chemicals in agricultural practices. This effort was carried out by providing counselling to farmers (business partners) and inviting business partners and Sayurbox customers to reduce plastic use. This is evidenced by the product packaging used by Sayurbox that is in the form of "paper bags" and cardboard to reduce the use of plastics. Therefore, with the implementation of COSO's ERM at Sayurbox, it can be concluded that Sayurbox is considered capable of supporting the achievement of the SDGs economic, social, and environmental pillars.

The limitation of this study is that the number of agriculture firms that using platform are still limited and tend to be in the startup category, so that space to be research objects is still limited. The object of this research is limited to only a firm, the startup of Sayurbox. The next researchers are expected to increase variables and company objects to produce a more objective assessment. Therefore, it is hoped that it can make future studies even better.

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Kerangka Kerja Manajemen Risiko Perusahaan *COSO* dalam *Startup* Pertanian untuk Mendukung Pencapaian Pilar SDGs

Abstrak

Manajemen Risiko Perusahaan (MRP) *Committee of Sponsoring Organizations of the Treadway Commission* (COSO) dianggap dapat meningkatkan nilai tambah perusahaan. Oleh karena itu, studi ini membuat kebaruan dengan menggunakan MRP COSO sebagai nilai tambah untuk mendukung pilar Sustainable Development Goals (SDGs). Tujuan utama studi ini adalah untuk menganalisis implementasi framework MRP COSO pada startup pertanian dalam mendukung pencapaian pilar SDGs. Metode pengumpulan data yang digunakan adalah studi kuesioner. Metode analisis penelitian menggunakan analisis kualitatif dan kuantitatif dengan menggunakan aplikasi Smart PLS. Penelitian ini bertujuan untuk mengetahui pengaruh penerapan MRP COSO sebagai nilai tambah pada startup pertanian sebagai tujuan untuk mendukung pencapaian pilar SDGs. Secara keseluruhan, implementasi MRP COSO pada startup Sayurbox yang dianalisis dari sisi pelanggan memiliki pengaruh yang signifikan dalam mendukung pencapaian pilar SDGs ekonomi, sosial dan lingkungan.

Kata kunci: MRP COSO, SDGs, startup, Sayurbox.