

The Influence of Sustainability Report, ISO 9001 Certification, and Food Safety Management System Certification toward the Customer Satisfaction in PT XYZ, Sidoarjo

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ABSTRACT

Purpose: As the world goes into unpredictable situation, business activities have turned differently. Since the age of corporate social responsibility, sustainability is introduced. To deep dive into human development and social impact, global standards are also required to comply with. This fact is no surprise as business operations affect many aspects in life. This study focuses on the observation of three independent variables; sustainability report, ISO 9001 certification, FSMS (FSSC 22000) certification, and also how they influence customer satisfaction in the industry.

Design/methodology/approach: Method used here is a quantitative approach that include classical assumption, multiple linear regression, and also hypothesis tests. Author examines them in an order, to keep the presentation well-structured that is segregated in a few chapters.

Findings: Result of the study shows that all of the independent variables influence the dependent variable both partially and simultaneously with R2 score is at 0.42 and its intercept scored at 27.97.

Research limitations/implications: This paper is limited to the context of management systems only observing the influence of the three independent variables and one dependent variable as stated in the abstract.

Practical implications: This study will support the understanding on how the report of sustainability and management systems to be able to influence the customer satisfaction in business. This may broaden the view on corporate image and improve its acceptance in the society.

Originality/value: This paper is originally written by the author with no participation of other researcher/s and only use some journals & books as reference.

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I. INTRODUCTION

A. Background of Study

In the last few years, evaluation towards the company performance has been growing as the awareness to sustainability increases. They are not only evaluated from the perspective of financial performance, but also from the responsibility toward the social and environment. Business world that grows significantly with complexity that follows from stakeholders especially customer that concern to the company performance and product/service quality, has pushed the company to do strategic efforts in order to tackle the challenges. Companies who have been reporting sustainability actions have shown improvement in norms, laws, ethics, and also performance standard to reduce business risk. It will be better supported if they hold certification of compliance towards the quality standard (ISO 9001) and food safety management system (FSSC 22000) since it will encourage customers to choose the company to be their special partner, primarily for the product in food industry, investors, and other stakeholders.

One of the measures recognized world-wide is SDI (sustainable development index). The Sustainable Development Index (SDI) measures the ecological efficiency of human development, recognizing that development must be achieved within planetary boundaries. It was created to update the Human Development Index (HDI) for the ecological realities of the anthropocene. The SDI starts with each nation's human development score (life expectancy, education and income) and divides it by their ecological overshoot; i.e. the extent to which consumption-based CO2 emissions and material footprint exceed fair shares of planetary boundaries. Countries that achieve relatively high human development while remaining within or near planetary boundaries rise to the top. As a reference, let's check out the sustainable development index in Indonesia as below.



Figure 1. Indonesian Sustainable Development Index in 2019

Source: sustainabledevelopmentindex.org

We can see above that the index is around 0.7-0.79 which means that Indonesia is high enough and need to improve their sustainability performance in the years to come. To get into details, let us take a look at the chart below.

Rank	Country	SDI	Life Expectancy (years)	Expected Years of Schooling	Mean Years of Schooling	Income (GNI per capita constant 2017\$ PPP)	CO2 emissions per capita (tonnes)	Material Footprint per capita (tonnes)
22	Indonesia	0.768	71.7	13.6	8.2	11,459	1.99	6.23

Figure 2. Indonesian SDI Rank

Source: sustainabledevelopmentindex.org

Indonesia is at the 22nd of the global rank on the sustainability index. This might be caused by the high volume of carbon emitted per year and is accumulated significantly. This might drive the government to initiate The Green Taxonomy program in Indonesia as we already know about.

As an outlook, we may check also the global measure of emission in the SD index. The scatterplot below depicts each nation in terms of their human development score and their ecological impact. The per capita planetary boundary is included in the charts for reference. Circle size represents population. The goal is for nations to get into the bottom right-hand corner, achieving over 0.8 on the human development score while remaining within sustainable thresholds for material use and emissions.

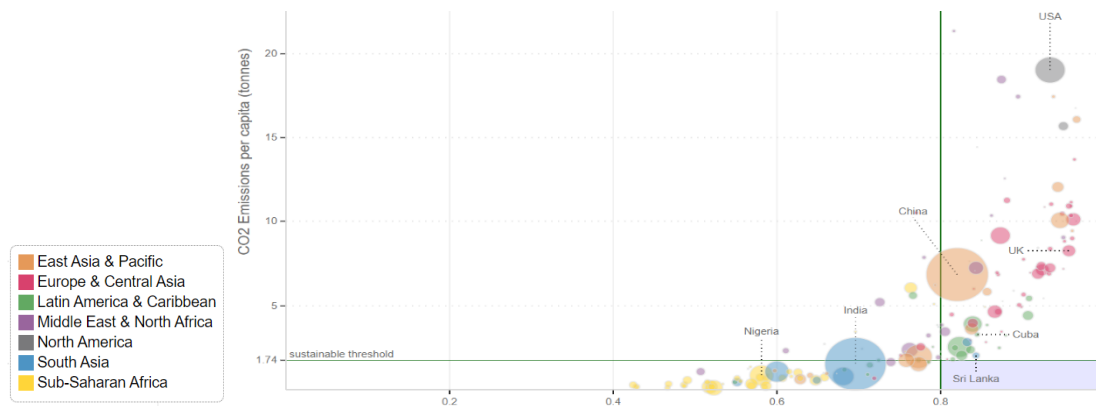


Figure 3. Human Development vs Ecological Impact as of 2019

Source: sustainabledevelopmentindex.org

From the figure 3 above we can see that United States of America has the highest awareness in terms of carbon footprint with total emission at 19.005 tons, development score at 0.934, and sustainable development index is at the rank of 0.163 (160). They have high index that urges them to do significant improvement to remain sustainable in the future years. It is a common knowledge that the fact about emission and material footprint has been the most cause to global stakeholders in starting off the initiative on SDG's and require them to disclose their sustainability performance in a report that is well-known as sustainability report. The report itself follows the global reporting standards such as GRI, SASB, and OJK standard (standard set by Indonesian Financial Services Authority). The background on this first chapter has been the main concern of the author to initiate this study on sustainability. Aside from that fact, global standards on quality and food safety have been taken into account too in order to satisfy customer in general so the output of the study might answer the global challenges on sustainability and trading.

B. Issue Identification

According to several previous researches show that sustainability reporting affects value or company valuation, where it is also found that sustainability reporting has significant effect toward ISO 9001 certification and company performance. Referring to that, the writer in this study tries to strengthening the relationship between sustainability report, ISO 9001 certification, and FSSC 22000 toward customer satisfaction in a flexible-packaging film manufacturing company.

From that explanation, here are the issues identified to be presented:

1. Is there any of influence between sustainability report, towards customer satisfaction in PT XYZ?
2. Is there any of influence between ISO 9001 towards customer satisfaction in PT XYZ?
3. Is there any of influence between FSSC 22000 certification towards customer satisfaction in PT XYZ?
4. Is there any of simultaneous influence between sustainability report, ISO 9001 certification, and FSSC 22000 towards customer satisfaction in PT XYZ?

C. Goal of Study

The study is conducted to examine whether or not there is any influence between sustainability report, ISO 9001 certification, and FSSC 22000 certification toward customer satisfaction in the manufacturing company of flexible-packaging film of PT XYZ in Sidoarjo

II. METHODOLOGY

The purpose of the study is to examine influence of sustainability report, quality management system (ISO:9001, 2015) implementation and food safety management system (FSSC 22000) toward the customer satisfaction in a flexible-packaging film of PT XYZ, Sidoarjo. The research uses quantitative method. It is a research by doing collection and data analysis such as questionnaire, nominal, or a certain score through statistical testing (Hermawan, 2005).

Data collection is done by retrieving information from PT XYZ company in Sidoarjo and its customers both domestic market and global market, with the sample according to the Isaac Michael table, for the period of 2021. Analytical method used is multiple linear regression with the amplifier; classical assumption test, hypothesis test, and correlation test through Python programming. Approach used in the research is started from conceptual framework, hypothesis and the foundational theory, continued to modelling and analytical method to identify variables and also doing the analysis based on the data sample.

III. RESULTS AND DISCUSSION

A. Analytical Technique

This research uses data panel or data pool where analytical method used is multiple linear regression. All of those data will be examined with several tests which are classical assumption test, reliability test, multi collinearity test, heteroscedasticity test, and linearity test. To proof the hypothetical test, the t test and F test will be used.

B. Classical Assumption Tests

1. Validity Test

Table 1 - Validity Test

<i>Sustainability Report</i>	0,61	0,32	0,34	0,41	0,59	0,42	0,62	0,37	0,33	0,38		
<i>ISO 9001 Certification</i>	0,27	0,33	0,32	0,28	0,44	0,39	0,41	0,36	0,4	0,3	0,32	0,41
<i>FSSC 22000 Certification</i>	0,27	0,23	0,33	0,52	0,24	0,26	0,25	0,35	0,08	0,24	0,3	0,30

Source: Python programming output

It can be seen that all the items in the questionnaire for the research instrument in variable X1; sustainability report, X2; ISO 9001, and X3; FSSC 22000 are valid. This is because the r stats of the formulation found higher than r table which is 0,23 or equationally stated as r stats > r.

2. Reliability Test

Table 2- Reliability Test

<i>Var. X1</i>		<i>Var. X2</i>		<i>Var. X3</i>	
20	20	24	24	22	23
20	1	24	1	22	1
20	0,639233	24	0,7419	23	0,76259

Source: Python programming output

It can be seen above that research instrument including the questionnaires to the variables of X1, X2, and X3 have Cronbach’s alpha score above the 0,60 for which it can be concluded that variable instruments of sustainability report, ISO 9001 certification, and FSSC 22000 certification are reliable. Normality test can be known from the points that spread out around the diagonal line, for which the residual score is deemed as normal. In other words, all independent variables have normal data distribution (can be checked from the X’s variable sheet).

3. Multi collinearity Test

Table 3. Multi collinearity Test

<i>Collinearity Statistics</i>		
<i>Variable</i>	<i>Tolerance</i>	<i>VIF</i>
<i>Sustainability Report</i>	0,956	1,046
<i>ISO 9001 Certification</i>	0,622	1,607
<i>FSSC 22000 Certification</i>	0,611	1,637

Source: Python programming output

From the table above, it is known that VIF score to the variable of sustainability report is as much as 1,046, variable of ISO 9001 certification is as much as 1,607, and variable of FSSC 22000 certification is scored as 1,637. Since all of the scores of the variables are under 10, it can be concluded that there is no multi collinearity symptoms where the regression model is free from multi collinearity presence.

Table 4. Heteroscedasticity Test

	<i>Coeff.</i>	<i>Std. Err</i>	<i>t Stat</i>	<i>P. Value</i>	<i>Low 95%</i>	<i>Up 95%</i>
<i>Intercept</i>	37,28	9,76	3,82	0,00	17,83	56,72
<i>X1</i>	0,31	0,23	1,38	0,17	-0,14	0,76
<i>Intercept</i>	46,79	7,54	6,2	0,00	31,76	61,82
<i>X2</i>	0,08	0,15	0,52	0,61	-0,22	0,38
<i>Intercept</i>	47,74	7,57	6,3	0,00	32,66	62,83
<i>(X3)</i>	0,06	0,15	0,39	0,70	-0,24	0,36

Source: Python programming output

From the significance score or the P value of the regression test between the independent variables with residual absolute, it can be seen that the score is 0,17 above 0,05 which means there is no heteroscedasticity symptoms. Meanwhile, from the significance score or P value of the regression test between independent variables with the residual absolute, it also can be seen that the score is 0,61 under 0,05 which means that, there is no heteroscedasticity symptoms. From the significance score or P value of the regression test between independent variable with the residual absolute, it can be seen that the score 0,70 is above 0,05 that means there is no heteroscedasticity symptoms.

1. Multiple Linear Regression Test

Table 5. Multiple Linear Regression

<i>Regression Statistics</i>	
<i>Multiple R</i>	0,21
<i>R Square</i>	0,42
<i>Adjusted R Square</i>	0,00
<i>Standard Error</i>	3,42

	<i>Coeff.</i>	<i>Std. Error</i>	<i>t Stat</i>	<i>P-value</i>
<i>Intercept</i>	27,97	13,22	2,12	0,04
<i>X1</i>	0,36	0,23	1,59	0,12

X2	0,44	0,15	0,29	0,77
X3	0,93	0,15	0,62	0,54

Source: Python programming output

In the output of regression sheet, the R Square (R²) is 0,42 which can be stated that the variable of sustainability report (X1), ISO 9001 certification (X2), & FSSC 22000 certification (X3) determine the value of customer satisfaction as much as 42%, meanwhile the other 58% is determined by other variables outside the model (other variables except X1, X2, & X3). Constant or intercept is as much as 27,97 shows that X1, X2, and X3 are at 0 (null) value which means that if company doesn't support the improvement toward the sustainability report, ISO 9001 implementation improvement, and also doesn't concern to the FSSC 22000 implementation, that drives the Y (customer satisfaction) to increase as much as 27,97 with assumption that variables outside the X1, X2, & X3 are constant or does not change (*ceteris paribus*). In other words, if there is any of X1, X2, and X3 valued at 0 (null) then the estimation of customer satisfaction (Y) will only increase as much as 27,97.

On the other hand, coefficient of X1 is scored at 0,36 showing that any of improvement in the sustainability report (X1) will give contribution to the increase of customer satisfaction will averagely be at 36% with assumption that ISO 9001 certification (X2) and FSSC 22000 certification (X3) are constant and other variables outside the model is also constant (*ceteris paribus*).

Meanwhile, the coefficient of X2 is as much as 0,44 showing that any increase of one improvement on ISO 9001 certification (X2) there will be increase of contribution at customer satisfaction averagely scored at 44% with assumption of sustainability report (X1) and FSSC 22000 certification (X3) are constant and other variables in the model are also constant (*ceteris paribus*). For the coefficient of X3 as much as 0,93 showing that any of one improvement on FSSC 22000 certification (X3) will impact to the value of contribution of customer satisfaction is averagely at 93% with assumption that sustainability report (X1) and ISO 9001 certification (X2) are constant where other variables outside the model are also constant (*ceteris paribus*).

2. Hypothesis Test

Table 6. X1 t-Test

	X1	Y
Mean	50.63	43.00
Variance	11.74	2.99
Observations	78.00	78.00
Pooled Variance	7.37	
Hypothesized Mean Diff	0.00	
Df	154.00	
t Stat	1.55	
P(T<=t) one-tail	7.48	
t Critical one-tail	1.65	
P(T<=t) two-tail	1.40	

t Critical two-tail 1.98

Source: Python programming output

By looking at the score of *t stat* and *t critical one tail*, on the table above, it can be seen that *t stat* is valued at 1,55 where the score is smaller than *t critical one tail* at 1,65. It means that instead of rejecting H_0 , it is accepted. In other words, it can be stated that the variable of sustainability report has influence to the variable of customer satisfaction. By taking a concern at p value and alpha on the table it is seen that p value at 7,48 is higher than the constant value at 0,05. So, the H_0 is not rejected, where in other words the hypothesis stating out that variable of sustainability report influences the variable of customer satisfaction is accepted.

Table 7. X2 t-Test

	X2	Y
<i>Mean</i>	50.63	50.37
<i>Variance</i>	11.74	6.81
<i>Observations</i>	78.00	78.00
<i>Pooled Variance</i>	9.28	
<i>Hypothesized Mean Diff</i>	0.00	
<i>Df</i>	154.00	
<i>t Stat</i>	0.53	
<i>P(T<=t) one-tail</i>	0.30	
<i>t Critical one-tail</i>	1.65	
<i>P(T<=t) two-tail</i>	0.60	
<i>t Critical two-tail</i>	1.98	

Source: Python programming output

By looking at the *t stat score t critical one tail score* on the table above, it is seen that *t stat valued at 0,53* for which it is lower than *t critical one tail score* at 1,65 means that H_0 is not rejected, and is accepted. In other words, it can be stated that the variable of ISO 9001 certification influences the variable of customer satisfaction. Besides that, we can also see the p value and alpha, where p value is 0,30 which is higher than constant valued at 0,05. So H_0 is not rejected, where in other words hypothesis stating out that the variable of ISO 9001 certification influences the variable of customer satisfaction is accepted.

Table 8. X3 t-Test

	X3	Y
<i>Mean</i>	50.63	50.67

<i>Variance</i>	11.74	6.95
<i>Observations</i>	78.00	78.00
<i>Pooled Variance</i>	9.35	
<i>Hypothesized Mean Diff</i>	0.00	
<i>Df</i>	154.00	
<i>t Stat</i>	0.71	
<i>P(T<=t) one-tail</i>	0.47	
<i>t Critical one-tail</i>	1.65	
<i>P(T<=t) two-tail</i>	0.94	
<i>t Critical two-tail</i>	1.98	

Source: Python programming output

By looking at the *t stat* score and *t critical one tail* score on the table above, it is seen that *t stat* is 0,71 where the value is lower than the *t critical one tail* score as much as 1,65. So instead of rejecting H_0 , it is accepted. In other words, it can be stated that FSSC 22000 certification influences the variable of customer satisfaction. By looking at the p value and alpha on the table it is seen that p value scored at 0,47 is higher than the constant scored at 0,05. So instead of rejecting the H_0 the hypothesis is accepted, where in other words hypothesis stating out that the variable of FSSC 22000 certification influences the variable of customer satisfaction is accepted.

Table 9. F test

	X	Y
<i>Mean</i>	48.01	50.63
<i>Variance</i>	2.27	11.74
<i>Observations</i>	78.00	78.00
<i>Df</i>	77.00	77.00
<i>F</i>	0.19	
<i>P(T<=t) one-tail</i>	0.00	
<i>F Critical one-tail</i>	0.69	

Source: Python programming output

From the table above it is clearly seen that the F score is 0,19 for which it is lower than the F table scored at 3,97. This fact shows that the hypothesis stating out that the variable of sustainability report, ISO 9001 certification, and FSSC 2000 certification influences simultaneously toward the customer satisfaction is accepted.

IV. CONCLUSION

From the research conducted, it is found out that several notes on the topic are relevant and correlating. Conclusion focuses on the independent variables and its correlation with the dependent variable. Based on the observation and in-depth analysis in this study, result is captured as the followings; sustainability report influences positive and significant towards customer satisfaction, ISO 19001 certification influences positive and significant towards customer satisfaction. FSSC 22000 influences positive and significant towards customer satisfaction. When it comes to simultaneous correlation check, it is said that sustainability report, ISO 19001 certification, and FSSC 2000 certification, influence positive and significant towards customer satisfaction simultaneously.

The regression test discloses a fact of correlation across variables in a certain point. Parameter used based on data accuracy, data insight, intercept, and deviation standard from each testing to determine regression value and its correlation by looking at the R² score, R score and the P value including the hypothesis testing. Meanwhile, hypotheses tests use two approach which are partial analysis and simultaneous one. From the observation and analysis, some points are gained on hands as below.

With the finding showing us about the influence of sustainability report towards customer satisfaction, it is recommended to review the performance of company sustainability performance to ensure the validity of reporting as reference for the up and coming reports. There is also a correlation where ISO 9001 influences towards customer satisfaction. It can be stated that the process quality in the company complies the standard, so that, it is recommended to monitor the activities to make sure management control is run. Control can be delivered through auditing, re-certification, and periodical management review. Another one is by the emergence of significant influence from FSSC 22000 towards customer satisfaction, then it can be stated out that in the manufacturing process of the company has been in compliance to food safety management system standard recognized globally, for which it is recommended for sales and marketing department to value this and inform to their customers in order to achieve target of trade and transactional activities by holding on the principles of mutual trust.

Since the three independent variables have correlation and influential simultaneously, it is recommended also for sales and marketing department to value it and inform to the stakeholders in order to facilitate the interests among all parties. In the terms of scalability and applicability, since the research is only limited to the scope determined by the author, it is recommended to other researchers to observe more details about customer satisfaction by involving variables outside the variables in this study, as reference and/or guidance both academically or practically.

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