Implementation Of Environmental Management System And Pro-Environmental Behaviour To Achieve Sustainable Industrial Performance For Hotels

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ABSTRAK

The COVID-19 pandemic has affected the world of tourism, especially in the hotel industry. Movement and travel restrictions, changes in human behaviour while traveling, as well as the existence of several regulations from the central government of Indonesia and local governments affect tourist visits and occupancy rates in hotels. As in large and star hotels, small hotels and non-star hotels have also been affected by the COVID-19 pandemic. This research was conducted in East Java Province, Indonesia, involving 161 non-star hotels during the data collection period in March and April 2019, namely in the early months of the Covid-19 Pandemic in Indonesia. The measurement parameters for the independent variables are Environmental Management System (EMS) and Pro-Environmental Behaviour (PEB), while the dependent variable is Sustainable Industry Performance. Research analysis using Smart-PLS 2.0. The conclusions of this study indicate that in the early months of the COVID-19 pandemic the Environmental Management System and Pro-Environmental Behaviour had a significant and positive effect on Economic Sustainability, with the strongest influence being given by Pro-Environmental Behaviour; only Pro-Environmental Behaviour has a significant and positive influence on Environmental Sustainability; Environmental Management System and Pro-Environmental Behaviour have a significant and positive influence on Social Sustainability, with the strongest influence exerted by the Environmental Management System.

Kata Kunci: *Environmental Management System (EMS), Pro-Environmental Behaviour (PEB), Sustainable Industrial Performance, Non-Star Hotels, COVID-19 Pandemic*

PENDAHULUAN

The COVID-19 pandemic has had a major impact in almost all sectors. The tourism industry is one of the sectors most affected by the COVID-19 pandemic. The results of the assessment of the impact of the Covid-19 outbreak on tourism in the world conducted by The World Tourism Organization (UNWTO) in December 2019 stated that tourism in the world has decreased on average by more than 70%. Tourism conditions like this are like 30 years ago. UNWTO also noted that the number of international tourist arrivals (overnight visitors) fell 72% in January-October 2019 compared to the same period last year. The decrease in the number of tourist arrivals in the first ten months of 2019 was 900 million more compared to the same period in the previous year. This resulted in a US $ 935 billion loss in export revenue from international tourism. Asia and the Pacific were the regions that experienced the largest decline in tourist arrivals, namely 82% in January-October 2019 (UNWTO, 2019).

The industry has been hit by uncertainty since the COVID-19 outbreak at the end of 2019. The tourism and hospitality industry as an industry based on human mobility and close interaction is the main recipient industry of the pandemic and its consequences (Gallen, 2019). The existence of travel bans and regulations on social distancing has resulted in a decrease in the willingness of tourists to travel. The effect of this causes tourists to cancel travel plans and hotel bookings. In the end it affects hotel employee income and their job security as many hotels stop operating. The shortage of cash and labour resulting from the COVID-19 pandemic has led to delays in hotel renovations (Elena, 2019). In fact, many hotel owners, especially small hotel owners and individuals who temporarily close their hotels change their types of business just to survive. This scenario causes a sharp decline in the value of the hotel sector's stock market. In other words, the pandemic has destroyed the market and the performance of hotel companies.

The implementation of EMS and PEB in the hotel industry is mandatory and some are voluntary. For star hotels with an area of more than one hectare, implementing an EMS regulated by the Indonesian government is a must, even before the hotel is built. However, for small hotels EMS rules are not as strict as large and star hotels. As for PEB, all hotel classes, both star and non-star hotels, are equally voluntary. Indeed, most large hotels make their own policies on the implementation of PEB in their hotels. This is to support the environmental preservation process, in addition to the fact that some PEB measures are things that lead to savings, such as turning off water, electric lights and contingent water when not needed or empty space. The unexpected incidence of the COVID-19 pandemic has made the tourism sector, especially the hotel industry, experience a deep decline. The decline in occupancy rates was followed by a decrease in revenue from hotels. On the other hand, the implementation of EMS and PEB requires several things that need to be done by hotel management, for example: the check and recheck process, management reviews, training for employees. The focus of resources from the hotel management was divided when the COVID-19 pandemic occurred. Resources in the form of capital, human resources, time and place that have been well planned have been disrupted due to the COVID-19 pandemic which was never predicted before.

This study aims to see the implementation of EMS and PEB to achieve SIP in non-star hotels in the first two months of the COVID-19 epidemic. The research location was conducted in the East Java Province of Indonesia. The choice of location in East Java Province is because it is one of the provinces with a high level of tourists and a significant growth in the number of hotels in the last few years, after Bali and DI Yogyakarta.

RESEARCH METHOD

This research method was selected quantitatively by collecting primary data as the main source of data analysis. The reason for choosing quantitative research methods is because the research idea is to study as much as possible in the hotel as one of the tourism industries that implements EMS and PEB. This study tested the existence of a relationship between the two independent variables EMS and PEB which directly affected one dependent variable SIP. The data collected from quantitative research allows for numerical and statistical comparisons. This study looks at the hopes and experiences of implementing EMS and running PEB in the hotel industry in East Java Province, Indonesia in the early months of the Covid-19 epidemic. Data from these respondents reflects personal opinions as a representation of the implementation of EMS and PEB in each hotel because the target respondents are managers.

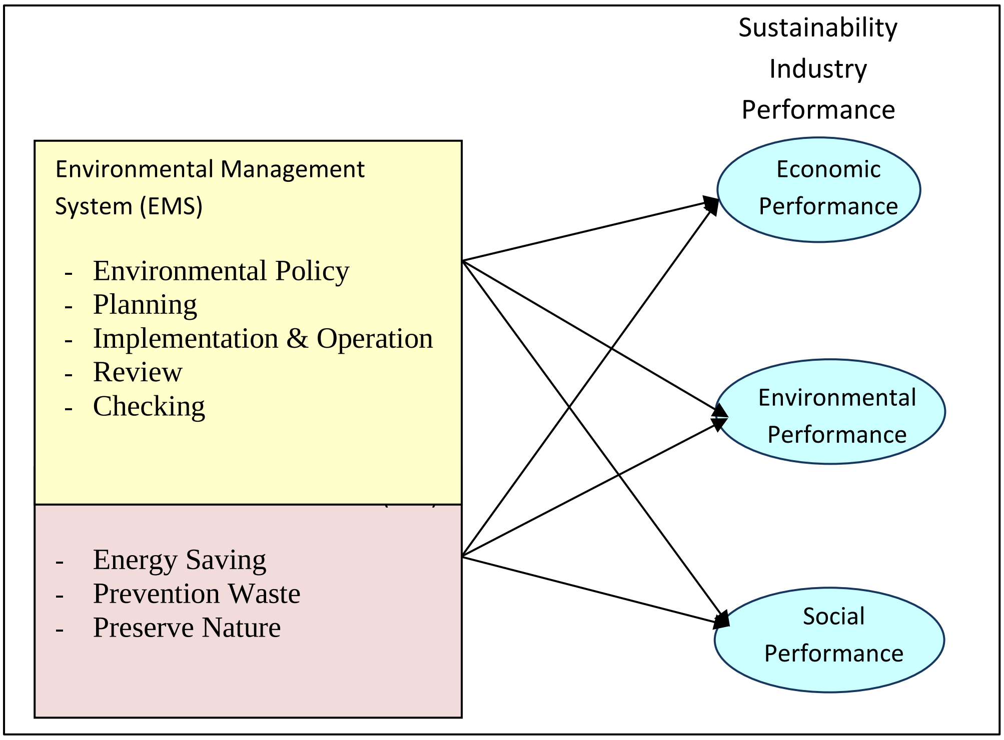

Figure 1: Research Framework

Data Analysis

The data used in this analysis is data obtained from the results of a survey of non-star hotels in East Java. The total number of respondents was 161 respondents, however after checking there were two respondents rejected. Respondents were categorized as unresponsive respondents and would be excluded from the analysis because they could make the results of the analysis not good, so that the total respondents to be analysed were 159 respondents. All analyses were performed using the Smart PLS 2.0 program.

RESULT ANDDISCUSSION

Testing the measurement model in this study uses generally accepted reference values. In particular, checking the convergent validity and construct validity and reliability, there are several standard references, such as: (1) SFL is Standardized Factor Loading (good criteria: SFL ≥ 0.70 and t-count ≥ 1.64); (2) AVE is Average Variance Extracted (good criteria: AVE ≥ 0.50), and (3) CR is Composite Reliability (good criteria: CR ≥ 0.70).

Table 1: Dimensions of Environmental Management System

Dimension	SFL	t-count	AVE	CR	Result
Second-Order Model					
Enviromental Management System (EMS)			0.67	0.91	Good Validity Good Reliability
1. Enviromental Policy	0.81	30.06			Good Validity
2. Planning	0.86	30.38			Good Validity
3. Implementation and Operation	0.89	55.54			Good Validity

4. Checking and Corrective Actions	0.66	12.30			Good Validity
5. Management Review	0.84	32.28			Good Validity
First-Order Model					
Enviromental Policy			0.72	0.91	Good Validity Good Reliability
– EMS 1.1	0.87	46.25			Good Validity
– EMS 1.2	0.89	51.55			Good Validity
– EMS 1.3	0.83	29.37			Good Validity
– EMS 1.4	0.80	25.66			Good Validity
Planning			0.70	0.90	Good Validity Good Reliability
– EMS 2.1	0.81	27.50			Good Validity
– EMS 2.2	0.86	34.56			Good Validity
– EMS 2.3	0.86	38.81			Good Validity
– EMS 2.4	0.82	25.82			Good Validity
Implementation and Operation			0.76	0.93	Good Validity Good Reliability
– EMS 3.1	0.85	35.85			Good Validity
– EMS 3.2	0.92	69.18			Good Validity
– EMS 3.3	0.92	62.55			Good Validity
– EMS 3.4	0.80	29.56			Good Validity
Checking and Corrective Actions			0.94	0.97	Good Validity Good Reliability
– EMS 4.1	0.97	140.00			Good Validity
– EMS 4.2	0.97	126.41			Good Validity
Management Review			0.74	0.92	Good Validity Good Reliability
– EMS 5.1	0.80	25.51			Good Validity
– EMS 5.2	0.85	26.85			Good Validity
– EMS 5.3	0.90	56.15			Good Validity
– EMS 5.4	0.90	52.16			Good Validity

Table 2: Dimensions of Pro-Environmental Behavior

Dimension	SFL	t-count	AVE	CR	Result
Second-Order Model					
Pro-Environmental Behavior (PEB)			0.76	0.90	Good Validity Good Reliability
Energy Saving	0.86	38.52			Good Validity
Prevention of Waste	0.85	41.38			Good Validity
Preserve Nature	0.90	46.86			Good Validity
First-Order Model					
Energy Saving			0.83	0.93	Good Validity Good Reliability
PEB 1.1	0.92	62.11			Good Validity
PEB 1.2	0.95	124.71			Good Validity
PEB 1.3	0.85	34.63			Good Validity
Prevention of Waste			0.66	0.85	Good Validity Good Reliability
PEB 2.1	0.86	57.68			Good Validity

PEB 2.2	0.83	23.55			Good Validity
PEB 2.3	0.75	13.40			Good Validity
Preserve Nature			0.76	0.93	Good Validity Good Reliability
PEB 3.1	0.79	24.29			Good Validity
PEB 3.2	0.88	37.08			Good Validity
PEB 3.3	0.91	62.00			Good Validity
PEB 3.4	0.90	68.30			Good Validity

Table 3: Dimensions of Sustainability Industry Performance

Dimension	SFL	t-count	AVE	CR	Result
First-Order Model					
Sustainability Industry Performance (Economy)			0.55	0.83	Good Validity Good Reliability
SIP 1.1	0.66	9.56			Good Validity
SIP 1.2	0.68	12.84			Good Validity
SIP 1.3	0.83	23.93			Good Validity
SIP 1.4	0.78	19.81			Good Validity
Sustainability Industry Performance (Environment)			0.75	0.95	Good Validity Good Reliability
SIP 2.1	0.88	53.53			Good Validity
SIP 2.2	0.86	45.28			Good Validity
SIP 2.3	0.89	53.36			Good Validity
SIP 2.4	0.87	37.73			Good Validity
SIP 2.5	0.86	38.42			Good Validity
SIP 2.6	0.84	29.81			Good Validity
Sustainability Industry Performance (Social)			0.72	0.93	Good Validity Good Reliability
SIP 3.1	0.74	14.18			Good Validity
SIP 3.2	0.85	38.91			Good Validity
SIP 3.3	0.92	82.38			Good Validity
SIP 3.4	0.88	43.33			Good Validity
SIP 3.5	0.83	31.12			Good Validity

Based on the results of the Convergent Validity test, by checking the Standardized Factor Loading (SFL) value and the t-count value, it can be concluded that almost all indicators have succeeded in meeting the Convergent Validity requirements, namely the SFL value ≥ 0.70 and the t-count value ≥ 1.64. As for some first-order indicators such as SIP 1.1 or SIP 1.2 have an SFL value below 0.70, but because these indicators still have a t-count value above 1.64 and if they are included in the analysis they do not decrease the AVE / CR value, the indicators will still be maintained.

Some second-order indicators also have an SFL value below 0.70, such as Checking and Corrective Actions. These indicators will still be maintained for the same reasons as the first-order indicators.

Based on the results of Construct Validity and Reliability testing, namely by checking the Average Variance Extracted (AVE) and Composite Reliability (CR) values, it can be concluded that all dimensions have met the requirements of Construct Validity and Reliability, namely the AVE value ≥ 0.50 and CR ≥ 0.70.

Table 4: Discriminant Validity with Fornell-Lacker Criteria

	EMS	PEB	SIP 1	SIP 2	SIP 3
EMS	0.82				
PEB	0.76	0.87			
SIP 1	0.61	0.63	0.74		
SIP 2	0.37	0.49	0.58	0.87	
SIP 3	0.72	0.68	0.66	0.63	0.85

- Numbers on grey background represent dimension AVE root values
- Figures below the value on the grey background are the correlation values between the two dimensions

Based on the results of the Discriminant Validity test using the Fornell-Lacker criterion, it can be seen that all dimensions have met the Discriminant Validity requirements, that is, all correlation values between two dimensions are less than the AVE root value.

Structural Model Testing

The Coefficient of Determination and Predictive Relevance test shows that all dimensions have good predictive power (Q2> 0) and at least one of the three dimensions also has a moderate minimum determinant coefficient. This indicates that the indicators for the dimensions of SIP (Economy), SIP (Environmental), and SIP (Social) have been able to explain each dimension well.

Table 5: Testing the Coefficient of Determination (R^2) and Predictive Relevance

Endogenous Latent	**R^2**	**Q^2**	**R^2 conclusion**	**Q^2 conclusion**
SIP (Economy)	0.44	0.23	Weak	Good Prediction
SIP (Environmental)	0.24	0.17	Weak	Good Prediction
SIP (Social)	0.56	0.39	Moderate	Good Prediction

Table 6: Effect Size testing for exogenous latent variables for the Sustainability Industry Performance (Economy) dimension

Exogenous Latent	**f^2**	**q^2**	**f^2 conclusion**	**q^2 conclusion**
EMS	0.07	0.01	Small Effect	Very Small Effect
PEB	0.13	0.04	Small Effect	Small Effect

Table 7: Effect Size testing for exogenous latent variables for the Sustainability Industry Performance (Environmental) dimension

Exogenous Latent	**f^2**	**q^2**	**f^2 conclusion**	**q^2 conclusion**
EMS	0.00	0.01	Very Small Effect	Very Small Effect
PEB	0.13	0.10	Small Effect	Small Effect

Table 8: Effect Size testing for exogenous latent variables for the Sustainability Industry Performance (Social) dimension

Exogenous Latent	f^2	q^2	f^2 conclusion	q^2 conclusion
EMS	0.20	0.10	Moderate Effect	Small Effect
PEB	0.09	0.03	Small Effect	Small Effect

Table 9: Path Coefficient Testing

No.	**Path (Relationship)**	**Path Coefficient**	**T-count**	**Significance**
1.	EMS → SIP (Economy)	0.30	2.90	*
2.	EMS → SIP (Environmental)	-0.01	-0.03	

3.	EMS → SIP (Social)	0.48	4.96	*
4.	PEB → SIP (Economy)	0.41	3.43	*
5.	PEB → SIP (Environmental)	0.50	4.37	*
6.	PEB → SIP (Social)	0.32	3.42	*

- The significance is calculated based on the 10% error rate, which is significant (*) if | t-count | ≥ 1.64

Research Hypothesis

- H1: Environmental Management System (EMS) directly has a positive effect on economic performance
- H2: Environmental Management System (EMS) directly has a positive effect on environmental performance
- H3: Environmental Management System (EMS) directly has a positive effect on social performance
- H4: Pro-Environmental Behavior (PEB) directly has a positive effect on economic sustainability
- H5: Pro-Environmental Behavior (PEB) directly has a positive effect on environmental sustainability
- H6: Pro-Environmental Behavior (PEB) directly has a positive effect on social sustainability.

Table 10: Hypothesis Conclusion

Hypothesis	Relationship	Path Coefficient	T-count	Significance	Hypothesis Conclusion
Second-Order Model					
H1	EMS → SIP (Economy)	0.30	2.90	*	Received
H2	EMS → SIP (Enviromental)	-0.01	-0.03		Rejected
H3	EMS → SIP (Social)	0.48	4.96	*	Received
H4	PEB → SIP (Economy)	0.41	3.43	*	Received
H5	PEB → SIP (Enviromental)	0.50	4.37	*	Received
H6	PEB → SIP (Social)	0.32	3.42	*	Received

- The significance is calculated based on the 10% error rate, which is significant (*) if the t-count ≥ 1.64
- Hypotheses H1 to H6 are accepted if significance is met and the path coefficient has a positive sign

Table 11: SEM Model Equations

Symbol	Mathematical Symbols	Dimension
EMS	ξ_1	Enviromental Management System
PEB	ξ_2	Pro-Enviromental Behavior
SIP (Economy)	η_2	Sustainability Industry Performance (Economy)
SIP (Enviromental)	η_3	Sustainability Industry Performance (Enviromental)
SIP (Social)	η_4	Sustainability Industry Performance (Social)

Table 12: Relationship and Mathematical Equations

Hypothesis	Relationship	Mathematical Equations
Second-Order Model		
H1	EMS → SIP (Economy)	$\eta_2 = 0.30\,\xi_1 + 0.56$

H2	EMS → SIP (Enviromental)	$\eta_3 = -0.01\ \xi_1 + 0.76$
H3	EMS → SIP (Social)	$\eta_4 = 0.48\ \xi_1 + 0.44$
H4	PEB → SIP (Economy)	$\eta_2 = 0.41\ \xi_2 + 0.56$
H5	PEB → SIP (Enviromental)	$\eta_3 = 0.50\ \xi_2 + 0.76$
H6	PEB → SIP (Social)	$\eta_4 = 0.32\ \xi_2 + 0.44$

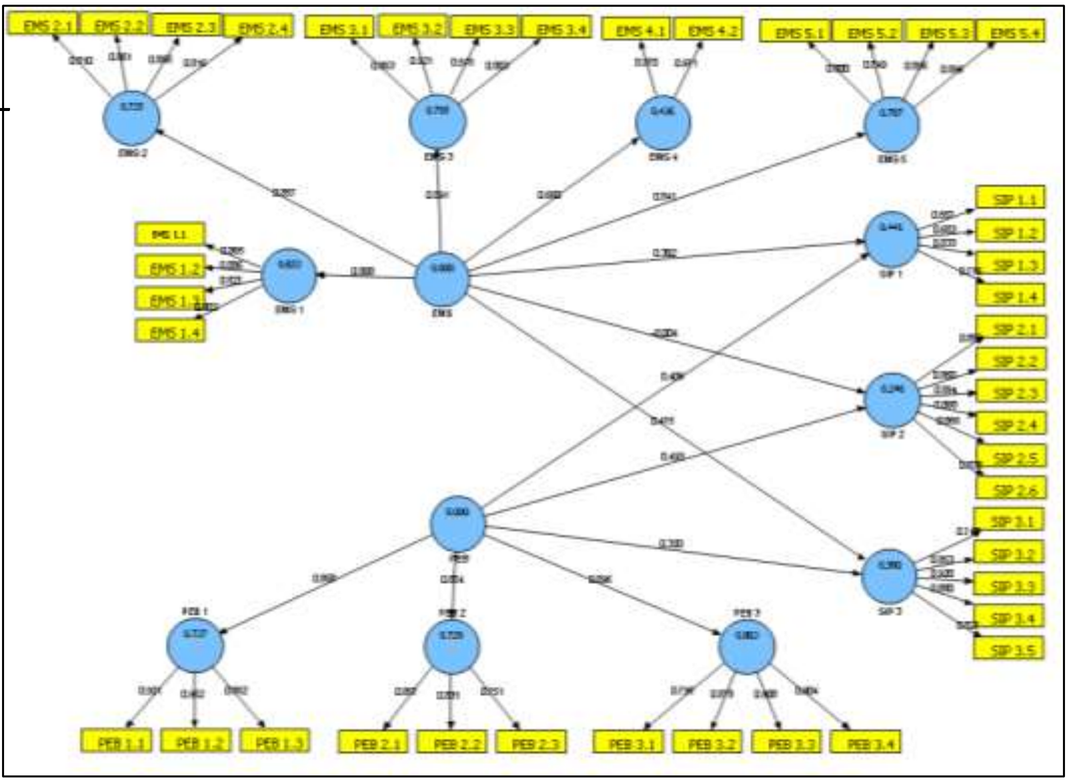

Figure 2: SEM Model Output

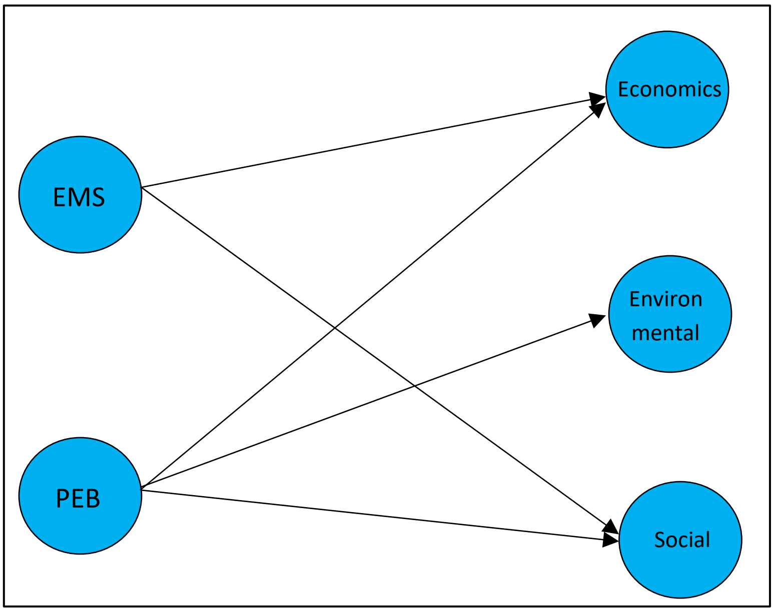

Figure 3: Result Model

CONCLUSION

Based on the results of testing the hypothesis above, it can be concluded that:

1. Environmental Management System and Pro-Environmental Behavior have

a significant and positive effect on Economic Sustainability, with the stronge st influence being given by Pro-Environmental Behavior (largest path coeffici ent value).
2. Only Pro-Environmental Behavior has a significant and positive impact on E nvironmental Sustainability.
3. Environmental Management System and Pro-Environmental Behavior have a significant and positive influence on Social Sustainability, with the stronges t influence being given by the Environmental Management System (largest p ath coefficient value).

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