

Environmental-Social-Governance (ESG) analysis on restoration of Melaka River for eco-tourism

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ABSTRACT – Eco-tourism is a promising driver of global economic growth. Melaka river which runs through UNESCO World Heritage City was revived as a lifeline for business activities. It becomes a dynamic and competitive industry to fulfil communities' needs for a city eco-tourism. 100 surveys about the river restoration were collected from stakeholders on the effectiveness of environmental-social-governance (ESG) factors. Data analyzed using SPSS ver23 and SmartPLS ver3.0 shows that social factor mediated environmental factor to enhance the Melaka river eco-tourism governance by private sector. More economic activities were generated along the river including river cruise and its surrounding facilities. As the river quality is sustained, it emerges as an important Melaka tourists' attraction.

1. INTRODUCTION

River restoration was essential for environmental and social sustainability of the eco-tourism activities in the Melaka city. Eco-tourism.org defines eco-tourism as “an emphasis on enriching personal experiences and environmental awareness through interpretation, promotes greater understanding and appreciation for nature, local society, and culture”. While marketbusinessnews.com refers environmental-social-governance (ESG) to “the three key factors when measuring the sustainability and ethical impact of an investment in a business or company”. Hence, the governance effects of business investments to local economies are critically important [3]. On the other hand, the governance of eco-tourism also warrants a careful consideration since it could become assets or detriments to communities due to diverse values influencing their behaviours and lifestyles [4]. As such, socio-economic benefits of river restoration should not be under-emphasized or ignored [5].

1.1 Problem Statement

The transformation of the Melaka river started in 2001. The aims were to improve the river's water quality, beautify, and preserve the river corridor and hence promoting the river as one of the main eco-tourism attractions in the historical city [1]. According to [2], such project managed to intercept all direct sewer discharge into the river, beautify the riverbank by new landscapes, and promote guesthouses, eateries, and river

cruise activities. The quaysides were further renovated and converted into walkways and cycling paths. Prior to the project, the Melaka river was heavily polluted as the result of uncontrolled development. In this case, [6] asserted that several attempts on river restoration design around the world have failed because of inadequate understanding of the specific process and history of the river. It was worrying if there was still high expectation from stakeholders in the eco-tourism governance by private sector. Self-sustained river systems provided healthy and dynamic ecological, supporting goods or services that communities look for [7]. This described why sustainability of Melaka river was laudable. Hence, it is critically important to determine whether the river restoration has enhanced business activities from the environmental-social-governance (ESG) factors of the private sector. The main reason is to attain a robust but self-sustainable system for future eco-tourism activities [8, 9]. Hence, the study focused to investigate the following research questions: 1) Was environmental factor producing a significance direct effect on the governance of Melaka river eco-tourism? 2) Was social factor providing a significance mediating effect on environmental factor for better governance of Melaka river eco-tourism?

2. METHODOLOGY

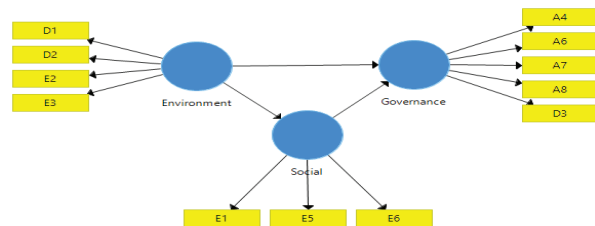


Figure 1 Environmental-Social-Governance model.

The quantitative study was designed and refined from the theory of PEST analysis [10]. An independent variable termed as ‘environmental’ consisted of river ecological items. A mediator variable named ‘social’ included items on health, safety, and security. A dependent variable called ‘governance’ represented by items on systemic sustainable economic of business activities in river eco-tourism. The research model in Figure 1 was determined by running factor analysis in SPSS version 23. Principal axis factoring and Promax

were chosen as the extraction and rotation methods. Survey questionnaires were collected from 100 respondents i.e. businesses (34), publics (33), and tourists (33); around the Melaka river. Eventually, SmartPLS 3 was applied to test all data and determined the direct and indirect effects contribution toward the ESG relationship.

3. RESULTS & DISCUSSION

3.1 Measurement Model

Table 1 Construct Reliability & Validity

| | Composite Reliability (CR) | Average Variance Extracted (AVE) |
|-------------|----------------------------|----------------------------------|
| Environment | 0.881 | 0.787 |
| Governance | 0.767 | 0.623 |
| Social | 0.800 | 0.573 |

Table 2 Fornell-Larcker Criteria

| | Environment | Governance | Social |
|-------------|-------------|------------|--------|
| Environment | 0.887 | 0.000 | 0.000 |
| Governance | 0.190 | 0.789 | 0.000 |
| Social | 0.372 | 0.259 | 0.756 |

On the measurement model, Table 1 shown good composite reliability (CR) values above 0.7 for all environmental, social, and governance variables. The average variance extraction (AVE) values indicated that more than 50% variance is captured by each construct due to measurement error. Fornell-Larcker criterion values in Table 2 exhibited that the reflective construct has the strongest relationships with its own indicators in the PLS path model.

3.2 Structural Model

Table 3 Coefficient of determination.

| | R square |
|------------|----------|
| Governance | 0.077 |
| Social | 0.138 |

Table 4 Effect size.

| | Governance | Social |
|-------------|------------|--------|
| Environment | 0.011 | 0.161 |
| Social | 0.045 | |

On the structural model, Table 3 showed R square low values of 7.7% and 13.8% respectively for governance and social. Somehow, there was a clear positive impact by the mediating variable presence. However, f square value of 0.11 between independent and dependent variables in Table 4 explained a non-significance variance of the direct path.

Table 5 Hypothesis Testing.

| | Path Coefficient | T statistic | p value |
|-----------------|------------------|-------------|---------|
| Env – Gov | 0.108 | 1.753 | 0.080 |
| Env – Soc | 0.372 | 3.133 | 0.002 |
| Soc – Gov | 0.219 | 1.546 | 0.122 |
| Env – Soc – Gov | 0.082 | 1.529 | 0.126 |

The T statistics and p values from Table 5 again justified the need for social variable as a mediator as projected by environmental-social indirect path as the

only significance outcome.

4. CONCLUSIONS

The outcomes revealed that the Melaka River restoration project was achieved mainly due to the support from the communities (locals and tourists). As they preserved the river quality, its effects on the environmental sustainability in turned promoted long-lasting business activities on and along the river. In this sense, river cruise, lodging, and eateries have been the main attractions. Based on the result, there were a few contributing factors that could describe the important roles played by the social mediator included promoting business atmosphere, river cruise popularity, city eco-tourism as a must-visit place, safer tourist destination, and hazard-free ecosystem [1, 3, 10]. In other words, the governance of economic activities by the private businesses was made possible by the support from the river eco-tourism communities. The Melaka government have also provided continuous support by organizing annual river festivals and developed its surrounding with latest attractive spots to visit for leisure activities which encouraged domestic business.

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