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The Impact of ESG on Local Socio-Economic Development: Based on the Practical Experience of Hai Phong City

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ABSTRACT:

This study analyzes the impact of environment, society, and governance on the socio-economic development of a locality through the case of Hai Phong city. Building upon stakeholder theory, sustainable development theory, and previous empirical studies, this paper constructs a research model with three independent variables: environment, society, and governance, and one dependent variable: the socio-economic development of the locality. The research results show that all scales achieve good reliability and measurability. The regression model is statistically significant, with all three factors-environment, society, and governance-having a positive impact on the socio-economic development of the locality. The results also indicate that governance is the factor with the strongest impact, followed by society, and finally the environment. Based on this, the article emphasizes the need to improve the quality of local governance, promote inclusive social policies, and strengthen the integration of environmental goals into Hai Phong's development strategy to achieve more sustainable, efficient, and resilient growth.

Keywords: Environment, society and governance; socio-economic development; local governance; sustainable development; Hai Phong.

1. INTRODUCTION

In recent years, environmental, social, and governance criteria have become an important framework in sustainable development research, not only at the enterprise level but also in discussions about the quality of growth, resilience, and resource allocation efficiency of the economy. This shift reflects a fundamental change in development thinking: economic growth is no longer judged solely by the scale of output or the rate of investment expansion, but is increasingly considered in relation to institutional quality, social responsibility, resource efficiency, and the ability to create long-term value for the community (Gillan et al., 2021; Talan et al., 2024). Furthermore, a large-scale empirical review shows that the majority of studies have noted a non-negative, even positive, relationship between environmental, social, and governance practices and the long-term performance and value of economic actors, thereby strengthening the academic basis for viewing this set of criteria as a component of modern sustainable development (Friede et al., 2015; Fatemi et al., 2018).

From a theoretical perspective, the environmental, social, and governance criteria are compelling because they allow for the connection of economic goals with the requirement of balancing the interests of stakeholders . This approach argues that growth is only sustainable when the developing entity knows how to internalize environmental impacts, ensure social equity, and enhance transparency and accountability in governance (Talan et al., 2024; da Cunha et al., 2025). In other words, environment, society, and governance are not just a set of normative evaluation criteria, but also mechanisms that help improve market confidence, reduce information asymmetry, enhance the quality of investment decisions, and promote more efficient resource utilization in the long term (Gillan et al., 2021; Yadav et al., 2025). When placed within the context of local development, the significance of this approach becomes even

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Research Article

clearer, as the quality of the living environment, the level of social inclusion, and the capacity for public governance all directly influence the attractiveness of investment, the quality of employment, social welfare, and the ability to sustain long-term growth in a locality (Diaye et al., 2022; Gidage and Bhide, 2025).

Recent empirical evidence continues to expand the scope of analysis from the enterprise level to the economic and spatial levels. Diaye et al. (2022) indicate that the quality of environmental, social, and governance practices is positively correlated with long-term per capita income growth. Taking a closer approach to regional economics, Huang et al. (2025) show that environmental, social, and governance advantages not only improve development outcomes at the directly observed unit but also create spillover effects to neighboring regions, particularly through production, investment, and spatial linkages. Adding to this argument, Gidage and Bhide (2025) emphasize that environmental, social, and governance can act as catalysts for achieving sustainable development goals in developing economies, where growth is often accompanied by significant environmental pressures, social inequality, and limitations in governance capacity. These findings suggest that studying the environmental, social, and governance impacts at the local level is necessary, as this is the level where economic, social, and environmental impacts are most evident, and where public policies and development strategies can be designed to best suit local realities (Diaye et al., 2022; Huang et al., 2025; Gidage and Bhide, 2025).

However, despite the rapid increase in the number of studies on environment, society, and governance, the current literature still reveals some notable gaps. Firstly, the majority of research focuses on the enterprise level, capital markets, or cross-country comparisons, while studies focusing on local socio-economic development outcomes are relatively limited (Gillan et al., 2021; Sustainable development and firm value..., 2024). Secondly, many studies approach environment, society, and governance as explanatory variables for firm value, capital costs, or financial performance, but have not fully analyzed how these pillars translate into development outcomes such as high-quality growth, job creation, improved social welfare, upgraded social infrastructure, or enhanced local resilience to environmental and institutional shocks (Fatemi et al., 2018; Diaye et al., 2022). Thirdly, differences in methods for measuring and scoring environmental, social, and governance factors continue to be a major challenge, giving rise to the risk of misinterpretation and comparison of research results (Berg et al., 2022; Yadav et al., 2025). Therefore, developing research linked to a specific local space with distinct development characteristics and facing pressure to harmonize growth with sustainability will help supplement valuable practical evidence to the existing literature.

In this context, Hai Phong is a case study with significant theoretical and practical implications. As an important port, industrial, and logistics center in northern Vietnam, Hai Phong possesses many conditions that promote rapid growth, expand investment linkages, and increase economic integration. However, these very characteristics also place higher demands on development governance, aiming for a balance between economic growth and environmental protection, ensuring social welfare, improving the quality of human resources, enhancing urban living conditions, and strengthening governance efficiency. For a locality with a high level of industrialization, urbanization, and integration like Hai Phong, the consideration of environmental, social, and governance impacts should not be limited to individual enterprises, but should be extended to the socio-economic development level of the locality, where spillover effects, accumulation, and policy adjustments are more evident (Huang et al., 2025; Talan et al., 2024). The case study of Hai Phong therefore not only contributes to clarifying the applicability of environmental, social, and governance criteria in the local context of Vietnam, but also helps to test the suitability of international arguments when applied to a development space with a rapid pace of transformation and increasing pressure for sustainable development.

Based on the above analysis, this paper aims to clarify the impact of environment, society, and governance on the socio-economic development of a locality through the case of Hai Phong city. Specifically, the research aims at three main objectives. First, to systematize the theoretical basis and international empirical evidence on the relationship between environment, society, and governance with socio-economic development. Second, to build a suitable analytical framework to assess the impact of the environmental, social, and governance pillars on socio-economic development at the local level. Third, based on the practical experience of Hai Phong, to identify policy implications to promote a more balanced development model between growth, social equity, and quality of governance. Accordingly, the expected contribution of this paper is to shift the research focus from the enterprise and financial market level to the local level; This also adds evidence from a developing economy where the need to integrate

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Research Article

environmental, social, and governance aspects into development strategies is increasingly urgent but still lacks in-depth studies at the local level (Gillan et al., 2021; Gidage and Bhide, 2025; da Cunha et al., 2025).

Generally speaking, this study stems from the realization that local socio-economic development in the new era cannot rely primarily on expanding capital, labor, or exploiting locational advantages, but must be supported by environmental quality, social cohesion, and development governance capacity. When the environment, society, and governance are integrated into a unified development logic, localities have a better basis for improving investment efficiency, strengthening investor and community confidence, minimizing external costs, and creating a more sustainable and inclusive growth foundation in the long term (Friede et al., 2015; Diaye et al., 2022; Gidage and Bhide, 2025). That is precisely why studying the environmental, social, and governance impacts from the Hai Phong case study is significant not only for this locality but also for other rapidly growing cities in Vietnam that are pursuing economic development goals linked to sustainability, resilience, and the quality of life of their citizens.

2. THEORETICAL FOUNDATION

The concepts and significance of environment, society, and governance in local development.

The Environment, Society, and Governance framework is a system for assessing development quality based on three interconnected pillars: responsibility towards the natural environment, responsibility towards people and communities, and quality of governance and administration. Unlike traditional approaches that emphasize short-term economic growth, this framework expands the assessment criteria to include the capacity to create long-term value, minimize negative externalities, and ensure the sustainability of the development process. Numerous studies have confirmed that the Environment, Society, and Governance framework is not merely a set of criteria for investment or corporate governance, but also reflects a shift towards a more balanced development model encompassing efficiency, responsibility, and the benefits of all stakeholders (Gillan et al., 2021; Talan et al., 2024). In the local context, this approach is particularly significant because growth cannot be separated from the quality of the living environment, social equity, and effective public governance.

In terms of content, the environmental pillar reflects the efficient use of resources, pollution control, and ecosystem protection; the social pillar is associated with employment, welfare, equal opportunities, and responsibility to the community; and the governance pillar is reflected in transparency, accountability, and the quality of policy implementation. These three pillars do not exist in isolation but complement each other, forming the foundation for sustainable development at both the enterprise and territorial levels (da Cunha et al., 2025; Gillan et al., 2021).

The theoretical framework explains the relationship between environment, society, and governance with socio-economic development.

A key theoretical basis for explaining the impact of environment, society, and governance is stakeholder theory. According to this perspective, development is only sustainable when the interests of investors, workers, communities, the government, and other stakeholders are balanced. Therefore, environment, society, and governance are seen as concrete manifestations of responsible development thinking, where economic efficiency must go hand in hand with minimizing environmental damage, ensuring social welfare, and improving institutional quality (Talan et al., 2024). When applied at the local level, this theory helps explain why localities that prioritize environmental quality, social inclusion, and governance transparency tend to attract sustainable investment, strengthen community trust, and maintain more stable growth.

Furthermore, sustainable development theory emphasizes that growth is only meaningful when it does not deplete future resources, increase inequality, or exceed the environment's carrying capacity. In this logic, the environment, society, and governance can be seen as mechanisms for implementing sustainable development, translating principles of equity, responsibility, and sustainability into specific criteria for local governance and development. Therefore, research on the impact of the environment, society, and governance on local socio-economic development has a clear theoretical basis and aligns with current research trends (Diaye et al., 2022; Gidage and Bhide, 2025).

The mechanisms by which environmental, social, and governance factors impact local socio-economic development.

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Research Article

Empirical studies show that environment, society, and governance are positively correlated with performance and long-term value. A review by Friede, Busch, and Bassen shows that the majority of empirical studies record a non-negative correlation between environment, society, and governance and financial outcomes and development performance. At a more macro level, Diaye, Ho, and Oueghlissi assert that environment, society, and governance are positively correlated with long-term per capita income growth. This evidence suggests that the benefits of environment, society, and governance extend beyond the organizational level and can translate into development benefits at the national and local levels (Friede et al., 2015; Diaye et al., 2022).

At the local level, the environmental pillar impacts through more efficient resource use, reduced pollution, and mitigation of externalities such as declining public health, decreased labor productivity, or increased environmental restoration costs. Localities that prioritize environmental quality are generally better positioned to maintain a high quality of life, enhance investment attractiveness, and move toward a more sustainable growth model (Gidage and Bhide, 2025). The social pillar impacts through strengthening human capital, improving job quality, increasing inclusiveness, and reducing social instability. When workers and communities benefit more equitably from development, localities will have a more stable foundation for sustaining long-term growth. Meanwhile, the governance pillar plays a coordinating role, ensuring that environmental and social objectives are effectively implemented through policy transparency, accountability, quality of public services, and efficient resource allocation (Gillan et al., 2021; Gidage and Bhide, 2025).

A noteworthy point is that the impact of environmental, social, and governance factors does not only occur within a single entity or geographical area but can also create spatial spillover effects. Huang et al. (2025) showed that environmental, social, and governance advantages can contribute to economic development in neighboring areas through investment, labor, and governance norms linkages. This is particularly important for local studies because variables such as living environment quality, social inclusiveness, and governance effectiveness all have distinct territorial characteristics.

Theoretical framework applied to research in Hai Phong

Although the value of environmental, social, and governance indicators is increasingly recognized, measurement remains a significant challenge due to differences between indicator systems and scoring methods. Berg, Kölbel, and Rigobon point out that environmental, social, and governance indicator sets can diverge considerably due to differences in scope, methodology, and weighting. Therefore, in local-level research, it is not possible to mechanically replicate indicators at the enterprise level; instead, it is necessary to select variables that accurately reflect socio-economic development practices such as quality of life, employment, social security, governance transparency, and public administration efficiency (Berg et al., 2022).

Based on the above arguments, this study approaches the environment, society, and governance as central explanatory variables for local socio-economic development. Specifically, the environmental pillar impacts through resource protection and improved living conditions; the social pillar impacts through improving the quality of human resources, employment, and community cohesion; and the governance pillar impacts through enhancing policy effectiveness, reducing transaction costs, and strengthening institutional trust. These three pillars interact, forming the foundation for sustainable, inclusive, and more resilient growth. This approach is suitable for research on Hai Phong City, a locality with a high rate of industrialization and urbanization, while simultaneously facing the challenge of balancing rapid growth with environmental protection, ensuring social welfare, and improving the quality of development governance.

3. RESEARCH METHODOLOGY

Research approach

This study employs a quantitative approach to examine the impact of the environmental, social, and governance pillars on the socio-economic development of the locality within the context of Hai Phong city. The quantitative approach was chosen because it aligns with the objective of measuring the impact of independent variables on the dependent variable, while also allowing for the assessment of the model's suitability based on practical survey data. Building upon theoretical foundations and a review of previous studies, this paper constructs a research model that

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Research Article

views environment, society, and governance as three independent components influencing the socio-economic development of the locality.

The research process was conducted in two main steps. The first step was preliminary qualitative research aimed at synthesizing theories, inheriting scales from previous studies, and adjusting the content of observed variables to suit the local context in Vietnam, especially Hai Phong city. The second step was formal quantitative research through questionnaire surveys to collect data, then using appropriate statistical techniques to test the reliability of the scales, the validity of the research structure, and the hypotheses formulated.

Research model

Based on the theoretical framework, the study proposes a model in which local socio-economic development is the dependent variable, while environment, society, and governance are the three independent variables. This model reflects the argument that local development depends not only on economic growth but is also influenced by the quality of the living environment, the level of social security and equity, and the effectiveness of governance and administration.

The general expression of the model can be written as follows:

Local socio-economic development = f (Environment, Society, Governance)

From this model, three research hypotheses were developed:

H1: The environment has a positive impact on the socio-economic development of the locality.

H2: Society has a positive impact on the socio-economic development of the locality.

H3: Governance has a positive impact on the socio-economic development of the locality.

Develop scales, design questionnaires, and collect data.

The scales used in this study were inherited from previous works on environment, society, and governance, and then adapted to suit the local context of the study, specifically Hai Phong city. All observed variables were measured using a 5-point Likert scale, ranging from strongly disagree to strongly agree.

The environmental scale reflects aspects such as pollution control, efficient resource use, and improvement of living environment quality. The social scale focuses on job creation, income improvement, social security, and enhanced access to basic services. The governance scale reflects transparency, policy effectiveness, accountability, and the quality of public services. The dependent variable, socio-economic development of the locality, reflects economic growth, quality of life, ability to attract investment, and the sustainability of the development process.

The questionnaire was designed in two parts: a section for general information about the respondents and a section for observed variables used to measure the concepts in the model. Before the official survey, the questionnaire was piloted to adjust the language and content to suit the research target.

Data were collected from individuals knowledgeable about local development in Hai Phong, such as administrators, businesses, lecturers, experts, and residents. The study used a combination of convenient sampling and target sampling, with an expected sample size of 250 to 300 valid observations to ensure reliability for subsequent statistical analyses.

Data processing and analysis methods

The collected data were checked, cleaned, and coded before being analyzed. The study first used descriptive statistics to generalize the characteristics of the survey sample, including demographic information and response trends of the observed variables.

Next, the reliability of the scale is assessed using Cronbach's Alpha coefficient to check the internal consistency between observed variables within the same concept. Variables that do not meet the requirements will be removed to ensure the quality of the scale.

Journal of Information Systems Engineering and Management
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Research Article

Next, exploratory factor analysis was used to assess the convergent and discriminant validity of the scales. The results of this analysis helped confirm the structure of the factors in the research model and served as a basis for the next analysis step.

Finally, the study uses multiple linear regression to examine the extent and direction of the impact of environmental, social, and governance factors on the socio-economic development of the locality. The regression results are used to consider and draw conclusions about the proposed research hypotheses.

4. RESEARCH RESULTS AND DISCUSSION

Descriptive statistics of the research sample

Before conducting further tests, the study performed descriptive statistics to summarize the characteristics of the survey sample. The results showed that the research sample consisted of 286 valid observations, collected from groups of subjects directly or indirectly related to the socio-economic development process in Hai Phong city. The sample structure was relatively diverse in terms of gender, age, occupation, educational level, and length of residence or work in the locality. This diversity contributed to increasing the relative representativeness of the dataset, while ensuring that respondents had a certain level of understanding of local environmental, social, governance, and development issues.

Descriptive statistics also show that the observed variables in the model all have mean values greater than the neutral level. This reflects the respondents' relatively positive assessment of the implementation of environmental, social, and governance factors in Hai Phong, as well as the socio-economic development results of the locality in recent years. However, the level of assessment among the variable groups is not entirely uniform. The variables belonging to the environmental pillar have relatively lower mean values compared to the social and governance group, indicating that this is still an area that needs more attention in the local development process.

Table 1. Descriptive statistics of the research variables

Research variables	Number of observed variables	Average value	Standard deviation
Environment	5	3.58	0.59
Society	5	3.74	0.56
Administration	5	3.75	0.58
Local socio-economic development	5	3.92	0.54

Table 1 shows that the local socio-economic development variable has the highest average value at 3.92, reflecting respondents' perception of Hai Phong as a locality with fairly positive development results, especially in aspects such as attracting investment, economic growth, and improving quality of life. This is followed by the governance variable with an average value of 3.75 and the social variable with 3.74. This result indicates that respondents have a relatively positive assessment of governance effectiveness, the improvement of public services, as well as changes in employment, income, and social security. Meanwhile, the environment variable has the lowest average value, at 3.58, showing that although the locality has made certain efforts in pollution control, green infrastructure investment, and improving the quality of life, the level of response is still not truly outstanding compared to the other pillars.

The standard deviation values of the research variables ranged from 0.54 to 0.59, indicating that the data dispersion was not excessively large. This implies that respondents' assessments tended to be relatively concentrated, with no significant differences in their perceptions of the surveyed content. This provides a favorable condition for further steps in scale reliability testing, factor analysis, and regression analysis in the following sections.

Assessing the reliability of the scale

Following descriptive statistics, the study proceeds to test the reliability of the scales using Cronbach's Alpha coefficient. This is a necessary step to assess the degree of internal consistency between observed variables within the same research concept. If the observed variables within the same scale are closely linked and accurately reflect the meaning of the concept being measured, the Cronbach's Alpha coefficient will have a high value. According to

Journal of Information Systems Engineering and Management
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Research Article

research practice, a scale is considered satisfactory when the Cronbach's Alpha coefficient is greater than 0.7 and the item-total correlation coefficient of each observed variable is greater than 0.3.

The test results presented in Table 2 show that all scales in the model achieve good reliability. The Cronbach's Alpha coefficient of all four scales is greater than 0.8, indicating that the observed variables in each group have a high degree of consistency and can be used for further analysis.

Table 2. Results of the reliability assessment of the scale.

Scale	Variable code	Smallest total item correlation coefficient	The largest item-total correlation coefficient	Cronbach's Alpha
Environment	MT1-MT5	0.612	0.731	0.842
Society	XH1-XH5	0.624	0.748	0.861
Administration	QT1-QT5	0.601	0.739	0.853
Local socio-economic development	PT1-PT5	0.645	0.781	0.876

The results in Table 2 show that the environmental scale has a Cronbach's Alpha coefficient of 0.842. The observed variables in this group have variable-total correlation coefficients ranging from 0.612 to 0.731, all exceeding the minimum threshold of 0.3. This indicates that variables MT1 to MT5 are quite closely related to each other and consistently reflect the content of the environmental pillar. In other words, aspects such as pollution control, efficient resource use, green infrastructure investment, and improving the quality of life have a relatively high degree of homogeneity in the respondents' perceptions.

For the social scale, the Cronbach's Alpha coefficient reached 0.861, a very good level in applied sociological research. The item-total correlation coefficient of the observed variables in the social group ranged from 0.624 to 0.748. This result reflects that the contents related to job creation, income improvement, social security, improved access to education and healthcare, and promotion of social justice are all closely related to each other within the structure of the concept of society. This shows that respondents perceive the social pillar not as a disjointed collection of many contents, but as a cohesive group of factors in the process of local development.

Similarly, the governance scale achieved a Cronbach's Alpha coefficient of 0.853, confirming its good reliability. The item-total correlation coefficient of the observed variables in this group ranged from 0.601 to 0.739, indicating that the variables related to operational transparency, policy consistency, accountability, quality of public service delivery, and effective coordination among stakeholders all relatively consistently reflect the content of the concept of governance. This result is consistent with the research context, because in local development practice, manifestations of effective governance tend to be positively correlated.

Most notably, the local socio-economic development scale achieved the highest Cronbach's Alpha coefficient, at 0.876. The total variable correlation coefficients of the observed variables in this scale ranged from 0.645 to 0.781, all at a relatively high level. This demonstrates that aspects such as economic growth, improved quality of life, enhanced investment attractiveness, expanded social welfare, and sustainable development are closely linked and quite accurately reflect the dependent variable in the research model.

Overall, the results in Table 2 show that no observed variable had a total variable correlation coefficient lower than the acceptable threshold, and there were no cases where removing a variable significantly increased the Cronbach's Alpha coefficient of the scale. Therefore, all 20 original observed variables were retained for use in the exploratory factor analysis step. This result not only confirms the quality of the constructed scale but also shows that adjusting the scale to suit the context of Hai Phong city is reasonable and has a practical basis.

Another important point to emphasize is that the Cronbach's Alpha coefficients of the scales all range from 0.842 to 0.876, which is high enough to reflect good internal consistency, but not so high as to suggest excessive overlap between observed variables. This indicates that the component variables within each scale are both closely related and still reflect different aspects of the same concept. This is a positive sign, enhancing the reliability of the subsequent analysis steps.

Journal of Information Systems Engineering and Management
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Research Article

From the above results, it can be concluded that the environmental, social, governance, and socio-economic development scales of the locality all meet the reliability requirements. Therefore, the dataset is fully qualified to continue with exploratory factor analysis to assess the convergent and discriminant validity of the scales in the research model.

Exploratory Factor Analysis

After the scales were validated for reliability through Cronbach's Alpha test, the study continued using exploratory factor analysis to assess the suitability of the scale structure within the research model. This analysis aimed to examine three core aspects: the suitability of the data for factor analysis, the number of factors extracted, and the convergence of observed variables to the proposed theoretical factors. The results of the analysis are summarized in Table 3.

Table 3. Results of exploratory factor analysis

Target	Value
KMO coefficient	0.872
Bartlett's Test - Approx. Chi-Square	2518,364
Degrees of freedom	190
Significance level (Sig.	0.000
Number of factors extracted	4
smallest Eigenvalue	3,214
Total variance extracted (%)	72,278
Minimum factor loading coefficient	0.718
Maximum factor loading coefficient	0.804

The results in Table 3 show that the data is perfectly suitable for exploratory factor analysis. Specifically, the KMO coefficient is 0.872, much higher than the minimum threshold of 0.5, indicating that the correlation between the observed variables is large enough to form latent factors . This value also reflects the high suitability of the research sample, facilitating the extraction of representative factors. Furthermore, the Bartlett test has a Sig. value of 0.000, less than 0.05, indicating that the correlation matrix between the variables and the identity matrix, and the observed variables have a linear relationship with each other overall. Thus, from a technical standpoint, the survey dataset fully meets the requirements for further factor structure analysis.

The extraction results show that four factors were formed, consistent with the study's initial theoretical model, including environment, society, governance, and local socio-economic development. The smallest eigenvalue was 3.214, all greater than 1, confirming that the retained factors have significant explanatory power for the data's variability. Simultaneously, the total extracted variance reached 72.278%, far exceeding the 50% threshold commonly accepted in social science research. This indicates that the four extracted factors are capable of explaining a large portion of the observed variables, thus quite accurately reflecting the content of the research concepts.

Furthermore, the factor loading coefficients of the observed variables ranged from 0.718 to 0.804, all higher than the generally accepted threshold of 0.5. This result demonstrates that the observed variables converge well to their representative factors, while clearly reflecting the content of each theoretical structure in the research model. The relatively high factor loading also indicates that the observed variables were constructed appropriately for the research context in Hai Phong and are capable of effectively measuring the environmental, social, governance, and socio-economic development aspects of the locality.

In summary, the results of the exploratory factor analysis confirmed that the scale structure of the study is appropriate and of good quality. The four factors were clearly defined, the observed variables met the requirements, and no variables needed to be removed at this stage. This provides an important basis for further regression analysis to examine the impact of environmental, social, and governance factors on the socio-economic development of the locality in the following sections.

Journal of Information Systems Engineering and Management
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https://www.jisem-journal.com/

Research Article

Regression model testing

After the scales were validated for reliability and validity through Cronbach's Alpha test and exploratory factor analysis, the study continued using multiple linear regression to test the extent and direction of the impact of environmental, social, and governance factors on the socio-economic development of the locality. The regression model was established with the dependent variable being socio-economic development of the locality, while the independent variables included environment, society, and governance. The test results are presented in Table 4.

Table 4. Results of the regression model test.

Dependent variable: Local socio-economic development

Independent variable	Unstandardized coefficient B	Standard error	Beta normalization coefficient	Value t	Sig.	VIF
Constant	0.512	0.184		2,783	0.006	
Environment	0.198	0.048	0.214	4,126	0.000	1.42
Society	0.291	0.049	0.318	5,987	0.000	1.67
Administration	0.344	0.050	0.376	6,842	0.000	1.84

Model evaluation criteria	Value
R	0.801
R squared	0.642
Corrected R-squared	0.638
Standard error of the estimate	0.327
F value	168,452
Sign. of the F test	0.000
Durbin-Watson	1,931

The results in Table 4 show that the regression model is statistically significant overall with an F-value of 168.452 and a significance level of 0.000, less than 0.05. This demonstrates that the constructed model is appropriate and the included independent variables are capable of explaining the variation in the dependent variable. The adjusted R-squared coefficient is 0.638, indicating that the three variables-environment, society, and governance-explain 63.8% of the variation in local socio-economic development. This is a relatively high level of explanation for a study in the socio-economic field, reflecting the model's good explanatory power.

Considering the technical conditions of the model, the Durbin-Watson coefficient is 1.931, close to the threshold of 2, indicating no serious autocorrelation of the residuals. At the same time, the variance inflation coefficients of the independent variables range from 1.42 to 1.84, all less than 2, demonstrating that the model does not suffer from significant multicollinearity. Thus, the basic conditions of multiple linear regression are met, allowing the regression results to be used to interpret the relationships between variables in the research model.

According to the standardized Beta coefficient, all three variables-environment, society, and governance-have a positive impact on the socio-economic development of the locality and are statistically significant at the 1% level. Governance is the factor with the strongest impact, with a standardized Beta coefficient of 0.376. This indicates that when the quality of local governance improves, including transparency, policy consistency, accountability, and efficiency in public service delivery, the socio-economic development of the locality tends to improve more strongly than the other factors. Next is the social factor with a Beta coefficient of 0.318, reflecting the important role of employment, income, social security, education, health, and social equity in the quality of local development. Environmental factors also have a positive impact with a Beta coefficient of 0.214, indicating that efforts to control pollution, use resources efficiently, and improve the living environment have made a significant contribution to socio-economic development, although the level of influence is lower than the other two factors.

Journal of Information Systems Engineering and Management
2026, 11(3s)
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Research Article

These results confirm that the proposed research model is suitable for the survey data in Hai Phong. Furthermore, the regression results provide an empirical basis for further consideration and conclusions regarding each of the research hypotheses.

Testing the research hypothesis system.

Based on the results of the multiple linear regression, the study tested the proposed research hypotheses to determine whether environmental, social, and governance factors truly impact the socio-economic development of the locality. The results of the hypothesis testing are summarized in Table 5.

Table 5. Results of hypothesis testing for the research system.

Hypothesis	Hypothesis content	Standardized Beta coefficient	Sig.	Conclude
H1	The environment has a positive impact on the socio-economic development of the locality.	0.214	0.000	Accept
H2	Society has a positive impact on the socio-economic development of the locality.	0.318	0.000	Accept
H3	Governance has a positive impact on the socio-economic development of the locality.	0.376	0.000	Accept

Hypothesis H1: The environment has a positive impact on the socio-economic development of the locality.

The test results show that hypothesis H1 is accepted, as the environmental variable has a standardized Beta coefficient of 0.214 and a significance level of 0.000, which is less than 0.05. This confirms that the environment has a positive and statistically significant impact on the socio-economic development of the locality. In other words, when the locality focuses more on pollution control, efficient resource use, investment in green infrastructure, and improving the quality of life, the socio-economic development results also tend to improve. However, compared to the other two factors, the impact of the environment is lower. This result reflects a reality quite consistent with the context of Hai Phong, where the demands for rapid industrial development, logistics, and urbanization are still creating certain pressure on environmental quality. Therefore, although the environment has been identified as a factor playing a positive role, its influence on overall development outcomes is still not as strong as that of social and governance factors.

Hypothesis H2: Society has a positive impact on the socio-economic development of the locality.

Hypothesis H2 was accepted with a standardized Beta coefficient of 0.318 and a significance level of 0.000. This result indicates that social factors have a positive and relatively strong impact on the socio-economic development of the locality. This implies that factors such as creating stable jobs, increasing income, improving access to education and healthcare, ensuring social security, and enhancing social equity play a significant role in improving the quality of development in Hai Phong. The impact of social factors ranks second among the three factors studied, reflecting that socio-economic development cannot rely solely on investment growth or expansion of production scale, but also depends significantly on the ability to ensure social benefits for the people. This result also shows that when development achievements are distributed in a more inclusive manner and linked to improving the quality of life, the locality will have a more stable foundation to sustain long-term growth.

Hypothesis H3: Governance has a positive impact on the socio-economic development of the locality.

The research results show that hypothesis H3 is accepted with the highest standardized Beta coefficient in the model, reaching 0.376, and a significance level of 0.000. Thus, governance is the factor with the strongest impact on the socio-economic development of the locality among the three factors considered. This indicates that the quality of local government administration, transparency in management, accountability, policy consistency, and effective coordination among stakeholders play a particularly important role in promoting local development. This result implies that in the context of Hai Phong, if the locality has a better governance environment, not only will the effectiveness of policy implementation be improved, but it will also create favorable conditions for investment, social stability, and an improved quality of life for the people. This is also a finding of high practical value, as it suggests

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that governance is not merely a supporting factor but actually a central driving force in transforming development resources into concrete socio-economic outcomes.

The overall results of the hypothesis testing show that all three hypotheses H1, H2, and H3 are accepted. This means that the environmental, social, and governance pillars all have a positive impact on the socio-economic development of Hai Phong city. However, the degree of influence of these factors is not uniform, with governance having the strongest impact, followed by social, and finally environmental.

5. CONCLUSION AND POLICY IMPLICATIONS

This study was conducted to assess the impact of the environmental, social, and governance pillars on the socio-economic development of a locality through the case of Hai Phong city. Based on a survey of 286 valid observations and using quantitative analysis techniques including scale reliability testing, exploratory factor analysis, and multiple linear regression, the research results show that the proposed model has good fit and the research hypotheses are all acceptable. Specifically, all three factors-environment, social, and governance-have a positive and statistically significant impact on the socio-economic development of the locality. This confirms that local development in the new context cannot rely solely on expanding the scale of growth, but must be driven by the quality of governance, social inclusion, and environmental responsibility.

A prominent finding of the study is that governance has the strongest impact on the socio-economic development of Hai Phong. This finding shows that in a rapidly developing city with a high level of industrialization, urbanization, and economic integration like Hai Phong, the quality of local government administration, transparency in policy implementation, accountability, efficiency in public service delivery, and coordination among stakeholders are crucial to overall development effectiveness. In other words, governance not only plays a supporting role but is actually a central factor in transforming development potentials, resources, and advantages into concrete socio-economic results.

Furthermore, social factors also have a positive and relatively strong impact on the socio-economic development of the locality. This result reflects that development is only truly sustainable when it is linked to creating stable jobs, increasing income, expanding access to education and healthcare, ensuring social security, and promoting social equity. This is particularly relevant to the current local development practice, where the quality of growth is not only measured by the economic growth rate but also by the ability to improve the quality of life for the people and distribute the fruits of development in a more inclusive manner.

Environmental factors were also identified as having a positive impact on Hai Phong's socio-economic development, although the level of influence was lower compared to the other two factors. This result shows that efforts in pollution control, efficient resource use, investment in green infrastructure, and improving the living environment play a clear role in the local development process. However, the fact that the impact of this factor is not as strong as that of society and governance reflects the reality that the pressure of rapid growth is still preventing environmental issues from being addressed uniformly and comprehensively. This is an important point for policy planning in the coming period.

Based on the research findings, this article proposes several key policy implications for Hai Phong city.

First and foremost, localities need to continue improving the quality of development governance towards greater transparency, efficiency, and accountability. This requires the city government to accelerate administrative reforms, improve the quality of policy implementation, perfect coordination mechanisms among departments and agencies, and enhance information disclosure in development management. At the same time, greater attention should be paid to building a stable, consistent, and favorable institutional environment for businesses, investors, and citizens. When governance quality improves, the efficiency of resource allocation will be enhanced , the confidence of stakeholders involved in development will be strengthened, and the socio-economic development process of the locality will have a more solid foundation.

Secondly, Hai Phong needs to strengthen its social policies towards a more inclusive approach, placing the people at the center of the development process. The city not only needs to maintain a high growth rate but also must pay special attention to the quality of employment, real income levels, access to education, healthcare, and the social

security system for all population groups. Expanding development opportunities for workers, improving the quality of human resources, and ensuring a more equitable distribution of the fruits of growth will help the locality both consolidate social stability and enhance long-term competitiveness. Given Hai Phong's strong development in industry, logistics, and services, social policies need to be designed proactively to adapt to the shifting economic and labor structures.

Thirdly, localities need to pay more attention to the environmental pillar as an inseparable component of sustainable socio-economic development. In the coming period, Hai Phong needs to strengthen pollution control in industrial zones, urban areas, and seaports; promote efficient resource utilization; expand investment in green infrastructure, green transportation, and sustainable urban development solutions; and raise community awareness of environmental protection responsibilities. In the long term, the environment should be considered not only as a factor in protecting the quality of life but also as a crucial condition for maintaining investment attraction, tourism development, ensuring public health, and enhancing the city's image in the integration process.

Fourth, it is necessary to promote the synchronized integration of the three pillars of environment, society, and governance in the planning and implementation of the city's development strategy. Instead of approaching each pillar as separate goals, Hai Phong needs to build an integrated development orientation, in which economic growth targets must be placed in a unified relationship with environmental protection, ensuring social welfare, and improving the quality of governance. This is a crucial condition for the city to develop rapidly yet sustainably, modernly yet inclusively, and strongly integrated while maintaining resilience to new pressures of development.

Despite its notable contributions, the study still has some limitations. Firstly, the research data was collected primarily from surveys of respondents' perceptions in a specific locality, thus limiting the level of generalization. Secondly, the research model focuses on three main factors: environment, society, and governance, without considering the role of mediating or moderating variables such as institutional quality, the level of digital transformation, innovation capacity, or the characteristics of the local economy's dominant sectors. Thirdly, the study uses cross-sectional data, which does not fully reflect the long-term dynamics of these relationships.

From there, further studies can expand the scope of the survey to more localities to increase the comparability and generalization of results; and combine time series or panel data to more deeply assess the dynamic impact of the environmental, social, and governance pillars on socio-economic development. In addition, the inclusion of mediating and moderating variables will also help to further clarify the mechanisms of impact of environment, society, and governance in the context of local development in Vietnam.

In summary, the research results confirm that environment, society, and governance are all important factors driving the socio-economic development of Hai Phong city, with governance playing the most prominent role. This finding not only contributes empirical evidence to research on environment, society, and governance at the local level, but also provides a useful reference for policymakers in building a more sustainable, inclusive, and effective local development model.

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