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A Fundamental Approach to Natural Capital Accounting: A Structured Framework Based on Grounded Theory

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1. Introduction

In recent decades, environmental degradation and human alienation from nature have made it necessary to pay attention to "natural capital" to achieve sustainable development. Neglecting natural capital creates unprecedented crises. Traditional accounting, due to its exclusive focus on financial indicators, fails to accurately measure the environmental impacts of human activities and overlooks the hidden costs imposed on nature. Natural capital cost accounting is a mechanism that identifies and measures the full range of natural capital costs within production processes and integrates them into decision-making for sustainable production. Its primary goal is to internalize the external effects associated with natural capital damage caused by economic activities. In response to this shortcoming, "natural capital accounting" has emerged as a new approach that attempts to incorporate environmental impacts into financial reporting through methods such as activity-based costing, target costing, and actual cost. The aim of this approach is to enable more accurate decision-making, transparency of the environmental performance of enterprises, and greater social accountability. Better management of natural capital can contribute to the sustainable development of companies in a competitive market based on

socially responsible corporate activities. The aim of natural capital accounting is to provide information that helps managers evaluate performance, make decisions, control, and report. However, this approach has also faced criticisms. The traditional accounting view, influenced by positivist philosophy, attempts to express complex phenomena such as the environment with only quantitative and financial data. In contrast, interpretive approaches (such as phenomenology) emphasize the importance of understanding meanings, values, and social context. From this perspective, the environment is not merely an economic resource, but a part of human identity, culture, and life.

In the meantime, mixed research methodology (both quantitative and qualitative) and the use of data analysis tools can create a more comprehensive understanding of natural capital. The present study attempts to develop a new framework for environmental reporting and decision-making in the field of natural capital by combining philosophical, accounting, and data analysis approaches. This framework can be an effective step in aligning economic interests with environmental protection and sustainability.

2. Theoretical foundations

Natural capital accounting is a new approach to environmental accounting that attempts to understand and measure the true value of nature from economic, cultural, social and spiritual aspects. Instead of focusing solely on financial resources, this method considers nature as a lifeline and source of human resources and expresses it in a language understandable to decision makers. The limitations of traditional economic systems have caused the invisible value of nature to be ignored, which results in incorrect policies and environmental degradation. The aim of this approach is to provide a tool for more sustainable decision-making and better protection of the environment.

Natural capital includes vital resources such as water, soil, air, forests and biodiversity, all of which play a fundamental role in the survival of human societies. Traditional accounting systems are unable to measure the true value of these resources due to their focus only on financial aspects, which has led to ignoring the importance of nature and wrong policies. Environmental crises such as climate change and ecosystem destruction demonstrate the ineffectiveness of these approaches in the proper management of natural resources. By integrating economic, ecological and social concepts, natural capital accounting attempts to explain the true value

of nature in a scientific and practical format for policymakers and decision-makers and to pave the way for the development of sustainable and responsible policies.

Environmental accounting has emerged with the aim of measuring, reporting and managing the impacts of human activities on the environment. By integrating economic, ecological and social concepts, this field attempts to convey the true value of nature in a format understandable to policymakers and to pave the way for designing sustainable policies. Several methods are used in this field; green accounting assesses the environmental costs and benefits of economic activities, while carbon accounting focuses on managing greenhouse gas emissions. This diversity of methods helps to a better understanding human interaction with nature and to formulate effective policies.

3. Methodology

The methodological nature of this study is a developmental in nature with respect to its outcome, and exploratory in terms of its objective. It is based on interviews with experts and employs a three-stage coding process to identify the themes, components and categories in line with natural capital accounting. The study integrates both qualitative and quantitative analytical approaches. The nature of the basic philosophy in the research is a combination of inductive-deductive approach. In this qualitative research, the Glaserian Grounded Theory is applied. This approach provides more diverse patterns for integrating data and explores the theory from within the data.

4. Research Findings

This study uses Glaser's approach to identify dimensions, which is carried out unsystematically and based on three stages of open, axial and selective coding, and seeks to present a multidimensional model that is different from the classic model of this analysis, the paradigmatic model. This approach asks open questions from the interviewees with open coding, and then, based on axial coding, summarizes the many concepts created, and finally, based on selective coding, presents the research model for theorizing. Finally, in this research, 3 categories (institutional factors of naturalistic accounting, accounting frameworks and participation, perception of frameworks and sustainability) and 9 central components (legal requirements and standards; economic and market pressures; social and cultural pressures; measurement and valuation tools; reporting and

accounting frameworks; stakeholder and local community participation; improving transparency and accountability; promoting sustainability and accountability; creating economic and social added value) and 88 conceptual themes were identified.

5. Discussion and Conclusions

The quantitative findings of this study indicate that the components of legal requirements and standards and social and cultural pressures have a very strong influence on natural capital accounting, and the component of legal requirements and standards demonstrate the highest level of impact compared to other components of the model. By integrating institutional factors, accounting frameworks and perceptions of sustainability, this model helps to a deeper understanding of nature's value and provides the basis for designing sustainable and responsible policies.

The findings highlight that legal requirements, standards, and social and cultural pressures as key components have the greatest impact on the development and implementation of natural capital accounting. These requirements, through determining laws and regulations such as environmental reporting, green taxes, and international protocols, require organizations to consider the value of natural resources in their decision-making processes. Moreover, green accounting standards enable the measurement and reporting of the value of nature by providing methodological frameworks an enable the evaluation and improvement of organizations' environmental performance through determining sustainability goals and indicators.

By presenting a new and comprehensive model, this research demonstrates how combining quantitative and qualitative dimensions can lead to a true understanding and measurement of nature's value. This model not only serves as a powerful tool for policymakers and managers, but also paves the way for designing sustainable and responsible policies. Ultimately, this research underscores that natural capital accounting is not only a scientific necessity, but also a moral and social imperative, so that we can find a way to save nature by understanding its value more accurately.

Keywords: Natural Capital Accounting, Ecosystem Services Valuation, Green Reporting, Environmental Sustainability.