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RESEARCH ARTICLE

The Impact of Generational Accounting on Environmental Interactive Strategies of Capital Market Companies

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Abstract

Due to environmental tensions and challenges, environmental functions have evolved from mere social responsibility into strategies for sustainable development. Meanwhile, a conflict exists between the interests of companies, external stakeholders, and the social environment, leading to differences in managers' attitudes toward the use of environmental development strategies. This research aims to investigate the effect of generational accounting on the interactive strategies of capital market companies in terms of environmental interaction. The research sample includes 392 managers at various levels of companies listed on the stock exchange during 2021-2022. Additionally, partial least squares (PLS) analysis was employed to fit the model. The research indicates that generational accounting positively and significantly affects environmental interactive strategies in capital market companies. The findings suggest that the integration resulting from the implementation of institutional and governance guidelines at the capital market level fosters interactive values and norms between companies and the environment. This approach not only protects the interests of the current generation but also, based on long-term foresight, mitigates the burden and pressure of environmental costs from the current generation to future generations. This is the first research to investigate the effect of generational accounting on interactive environmental strategies. Although this area is significant for developing theoretical literature and providing a practical foundation for reducing information asymmetry in environmental accounting, there has been limited research.

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1. Introduction

The spread of environmental pollution has caused some measures to be taken to prevent environmental pollution, the destruction of resources, and sustainable use in some developed countries and the world. For this reason, the 1960s and 1970s are periods of awakening and awareness of the environment. In this era, humanity realized the signs of threatening the environment. It was necessary to hold a conference and approve several laws for protection and alignment with sustainable development (Brulle et al., 1996). Interactionist strategies in the environment will help to create qualitative perceptions of decision-makers and managers of economic enterprises to reduce environmental pollution. These strategies are considered a philosophy based on coherent and integrated approaches of mutual action and symbolic interactionism in a social environment based on a prism. A specific norm or procedure will create a unified image of collectivist social behaviors regardless of institutional and legal requirements. In other words, these symmetries can also lead to the expression of meanings and concepts of environmental values in a society, such as the capital market, based on a set of systematic and homogeneous comments. The transparent representation of green accounting practices creates a context for greater integration between companies with environmental protection activities (Pickering and Norman, 2020). On the other hand, the wide range of environmental discourses can help advance the goals of social groups such as NGOs in the cultural formation and development of adherence to environmental norms and thus strengthen the inclusion and generality of environmental perceptions. The noteworthy point is, nowadays, environmental theories with emphasis on creating constructive interactions (harmonies) are trying to show that both macro decisions and policies (supply management) and the type of environmental values and behaviors and actions (demand management) can create help the integration of green behaviors.

Today, accounting, as a comprehensive function, has tried to guide environmental functions by linking financial strategic issues with environmental behaviors more coherently to achieve a sustainable development level (Cho et al., 2022). However, the concept of sustainable development has given a greater role to accounting due to climate change because it considers the accounting profession necessary to maintain a constant existence of natural assets and has created an exchange relationship between intergenerational capital and French capital (Gunarathne et al., 2023). In fact, with the increasing pressure on natural resources and limitations in this area, achieving intergenerational accounting has become a challenge. For the development of future environmental strategies, a concept beyond Generational Accounting is needed (Cho et al., 2022). A concept in line with sustainable development and the fair allocation of resources to reduce environmental pollution requires long-term perspectives in accounting to achieve sustainability.

The phenomenon of generational accounting, as a change in nature from classical accounting, a range of functions from planning to budgeting to allocate resources, includes reporting and performance feedback for the benefit of future generations. In this way, sustainable development can be achieved by using financial resources against the environment (Heerden and Schoeman, 2000). In other words, generational accounting is a perspective of financial functions and decisions, the results of which can lead to the creation of a set of interactive processes in the environment (Klumpes, 2001).

Given that, as Kotlikoff and Raffelhusechen (1999) in criticizing classical accounting, relying on the development of environmental perspectives introduces generational accounting as the result of cost and utility, it can be stated that focusing on this concept goes beyond the cost-oriented approach of classical accounting. It tries to help create more integration in environmental interactive strategies by using forward-looking methods in green accounting (Pinheiro, 2021). Reviewing the requirements of Article 190 of the Fifth Development Program Law in Iran also shows that due to

the existence of financial resource limitations, Changing policies for the optimal consumption of resources and reducing government spending credits through the implementation of the green accounting program, including energy consumption management; Water; raw materials and equipment (such as paper); Reduction of solid waste materials and their recycling (in buildings and vehicles). Achieving an integrated level of transgenerational accounting approaches can help to increase environmental interaction strategies. In line with the notification of the regulations of the Environmental Protection Organization and its deputy regarding the development of interactive sustainability functions between the industry and the environment, conducting this research can be fruitful in creating greater integration of the financial functions of companies with the environment. Therefore, relying on the above explanations, the importance of conducting this research can be examined from the following two perspectives.

First, this paper is the first research that examines the effect of generational accounting on interactive environmental strategies. Although past research such as Petera et al. (2021), Singh (2019), and Tu and Huang (2015) respectively review "environmental strategies and green financial reporting, "Commercial sustainability and green management with a focus on financial dimensions" were discussed, but no research has investigated the current issue. Conducting this research can help develop theoretical literature to fill the gap of agency costs in the dimension of environmental functions of the company and expand the theoretical knowledge about the research subject based on the structural characteristics of companies in different societies and capital markets.

Secondly, the results of this research can help regulatory institutions such as policymakers and compilers of financial reporting standards to improve the level of knowledge of information requirements in the field of green performance disclosure, more consistent requirements regarding the development of environmental accounting information disclosure on the one hand, and more culture building to promote an optional level of disclosure of the functions of this field by companies. There is always this concern from theorists in this field that the content contradiction between the values of social behavior and accounting standards due to the lack of an inclusive culture regarding the disclosure of green practices has caused the level of environmental protection in industries to be of little interest and this will cause an increase in environmental pollution and its destruction. Therefore, relying on this level of social and institutional sensitivities towards the environment, this research aims to investigate the effect of generational accounting on the interactive strategies of the environment in capital market companies.

2. Theoretical principles

2.1 Environmental interactionist strategies

In general, the behavior of competing local governments in terms of environmental regulation has been studied in depth. Still, the research perspective is limited to the dynamics of the local governments' behavior and treats each local government as an independent individual, thus ignoring the influence and constraints of local governments' behavior as competitors who cannot satisfactorily explain the universality of the non-complete enforcement of environmental regulations (Gao et al., 2023). More recently, the center of the struggle over economic metaphors has been reshaped around whether nature should be explicitly incorporated into the globally dominant neoliberal and capitalist market economy. Certain economic metaphors – such as ecosystem services – were created to argue for environmental protection (see Bekessy et al., 2018). However, these metaphors' underlying assumptions about human relationships with nature have subsequently informed the bounds of science and policy (Norgaard, 2010). This struggle over economics-focused environmental discourse and its practical implications can be seen in recent debates over the use of

economic metaphors and frameworks for conservation policy (i.e. Wilson and Law, 2016). Pennnycook (1999) believes that interactions are sets of systematic and organized comments that explain the meanings and values of institutions. Environmental interactionist strategies "is an approach that systematically investigates the often ambiguous relationships of causality and determinism between a) interactionist actions, events, and texts; b) It deals with wider social and cultural structures, relationships, and processes. Environmental interactionist strategies are the basis for building identities; social relations and systems of knowledge and meaning help to ground the creation of acceptance and strategic arrangement of texts, and environmental images and ideas have been proposed. Interaction in environmental studies has been proposed in different ways. Many books and works have discussed environmental interactions, but most do not provide phylogenetics. In the following, three typologies of environmental interactions are introduced, which are placed in the form of the interactionist concept of bio-ecology because their view on the environment is global, and ultimately, they support the environment present in Figure 1.

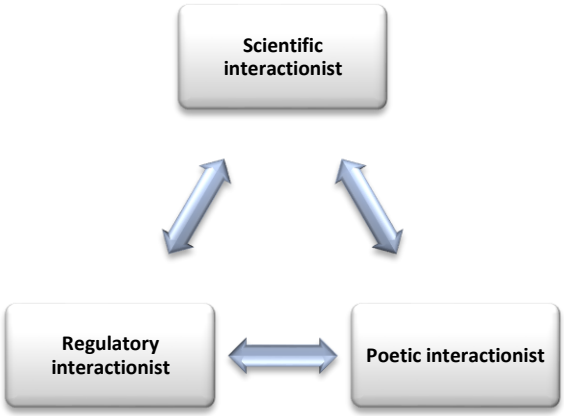

Figure 1. Environmental discourse strategies (Herndl and Brown, 1996)

A) One of the basic efforts to organize the analysis of environmental interaction has been made by Herndl and Brown (1996). "Environmental interactionist model" is in the form of three circles, each placed in a triangle circle. In the left square is "regulatory interactionist", which refers to powerful institutions that make environmental decisions and policies. Here, nature is treated as a resource. In the upper square is "scientific interactionist", in which nature is considered the subject of knowledge created through scientific methods. Policymakers always base their decisions on technical information and expert evidence. Finally, at the exact opposite pole in the right square is "poetic interactionist, " which is based on corporate normative and cultural narratives about nature that emphasize the beauty of spirituality and emotional power. Herndl and Brown (1996) emphasize that these three powerful environmental interactions are often combined and not independent. In such cases, it is better to look for dominant orientations (Rozema et al., 2012). De Tommaso and Rodrigues (2023) acknowledged that a shared value creation system is composed of nine elements, which are business results, social-environmental results, ecosystem, impact, materiality matrix, profitability, purpose-driven leadership, social-environmental welfare and sustainable economic development, can be considered as a basis for strengthening social trust.

B) Another action taken in classifying environmental interactions is Bruhl's (2000) genealogy of argumentative frameworks accepted by the US environmental movement. Based on the literature of environmental philosophy and a detailed study of the history of environmentalism in America, Brule reached nine distinct interactions:

- Manifest Destiny (the extraction and development of natural resources give the environment a

value it would otherwise lack).

- Wildlife Management (scientific management of ecosystems can ensure the survival of sustainable wildlife populations for recreational purposes such as hunting).
- Conservation (natural resources should be managed technically using a utilitarian approach).
- Preservation (the range of wildlife must be protected from human invasion because it has spiritual and aesthetic value).
- Reform Environmentalism (ecosystems must be protected for human health).
- Deep Ecology (diversity of life on earth must be preserved because it has intrinsic value).
- Environmental Justice (environmental problems are the reflection and result of fundamental social inequalities).
- Ecofeminism (abuse of the ecosystem shows men's dominance and lack of attention to the order and cycle of nature).
- Ecotheology (humans must protect nature because they are God's creation).

Existing studies have noted the explanations of local governments' behavior on the incomplete implementation of environmental regulations and described some conceptual terms, such as selective implementation, symbolic implementation, negative implementation and policy implementation bias (Cao et al., 2023). Herndl and Brown (1996) believe this multiplicity of interactions has fragmented the American environmental movement and prevented it from speaking with a unified voice to a nationally informed audience. Proponents of these reasoning frameworks talk to each other in the process of doubt and lack of mutual understanding. Like Schneiberg and his followers, Brulle (1996) concludes that no meaningful environmental action can exist without real structural change. As long as the discourses related to the environment cover the social origins of indigenous life and claim a coherent view of the general good of the environment, this is unlikely to happen.

C) John Hannigan also identifies three environmental interactions in Table (1): Arcadian interaction, ecological interaction, and environmental justice interaction.

Table 1. Characteristics of homophones of environmental interactions of Brulle (1996)

Consonant type of environmental interaction	Description
Arcadian interactionism	Van Koppen (2000) states three characteristics of Arcadia's interactionism: externality, Illustration, and completion. Externality means that Arcadian nature is constructed as external to human society or removed from everyday urban life. Imagery shows that the image of nature in the Arcadian tradition is placed in the cultural memory through visual images and stereotypes. Finally, the Arcadian tradition can best be understood through the complementarity framework. In other words, the Arcadian tradition is at the opposite point of the urban industrial society and all the related social and environmental problems.
Ecosystem Interactionist	The second major interaction that has shaped how we deal with nature and the environment is based on the concept of ecology. Referring to the terminology of Herndl and Brown (1996), it can be said that the scientific discourse is the dominant tendency in this interaction.
Environmental justice Interactionist	In the 1980s, a new set of forms of interactionism emerged in the United States, which were very different from mainstream interactions in interpreting environmental problems and priorities. Environmental justice raises a series of lawsuits related to toxic pollution, according to the civil rights of those who were harmed, and not in relation to the rights of nature.

2.2 Generational accounting

This approach of accounting to develop environmental sustainability was proposed for the first time by Kotlikoff (1984). This approach initially tried to analyze the burden of the government's expenses and payments by separating the current and future generations in terms of obtaining resources and future limitations. Taylor (2013) outlined a generational accounting approach based on two main goals that are presented in Figure 2:

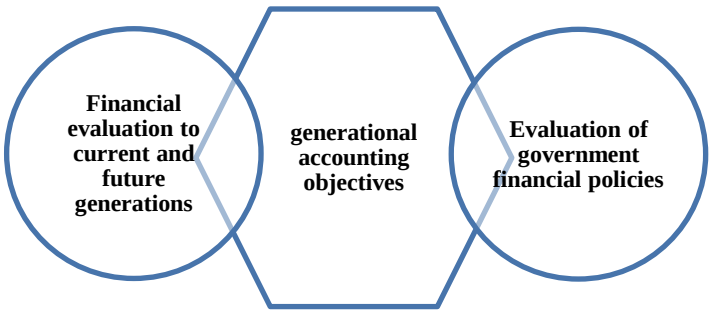

Figure 2. Goals of the generational accounting approach

Therefore, generational accounting evaluates the ability to bear the government's financial policies in different age groups. On the other hand, it examines whether the ability to bear such a financial burden is possible for the current and future generations. In describing this approach, Kotlikoff (1984) stated that the total current debt of the government, because it remains for future generations, is likely to increase the pressures on the future generation due to the achievement of resource scarcity. Based on the cost-oriented nature of generational accounts, the net present value of taxes paid by the current generation is probably compared with the net present value of government accounts. The difference between the two represents the financial burden imposed by the present generation on the shoulders of the future generation; it is a function based on creating the pressure of providing resources in the future. Suppose the environment is considered a resource based on sustainability. In that case, implementing generational accounting by creating incentives such as discounts and green tax exemptions improves utility by reducing environmental pollution for future generations (Arévalo et al., 2019). Leibfritz (1996) considered generational accounting as a factor in achieving the following consequences from an environmental perspective presented in Figure 3:

All four of the above consequences seek to balance cost and utility in generational accounting to preserve the environment as a natural resource for future generations. Also, Rounaghi (2019) uses green accounting to study the basics of the generation field in accounting to develop green tax policies. Environmental education and preventing the reduction of natural resources were divided into the following three sections, presented in Figure 4.

In the field of social welfare, generational accounting, with the assumption of creating tax justice, tries to meet the needs and demands of the future generation by preventing costs imposed on natural resources while creating the welfare of the current generation to avoid erosion and destruction of natural resources. On the other hand, in the field of population, generational accounting based on transfer payments from the current population to the future population tries to prevent the imposition of current costs on the future. The generation of generations in societies is a

condition for the stability of governments to preserve and protect natural resources, and education to the first generations can guarantee the population's stability in future generations. Finally, it should be stated that generational accounting is not developed only to explain generational balance. Still, it also tells how to change policies to distribute green justice to the current generation. Therefore, politicians trying to achieve their goals may base their activities on current expenses and neglect long-term investment and investors, so they will not have the ability to support the next generation and will have to increase tax rates, which can be an effective factor in generational accounting and intergenerational balance (Ablett, 1996).

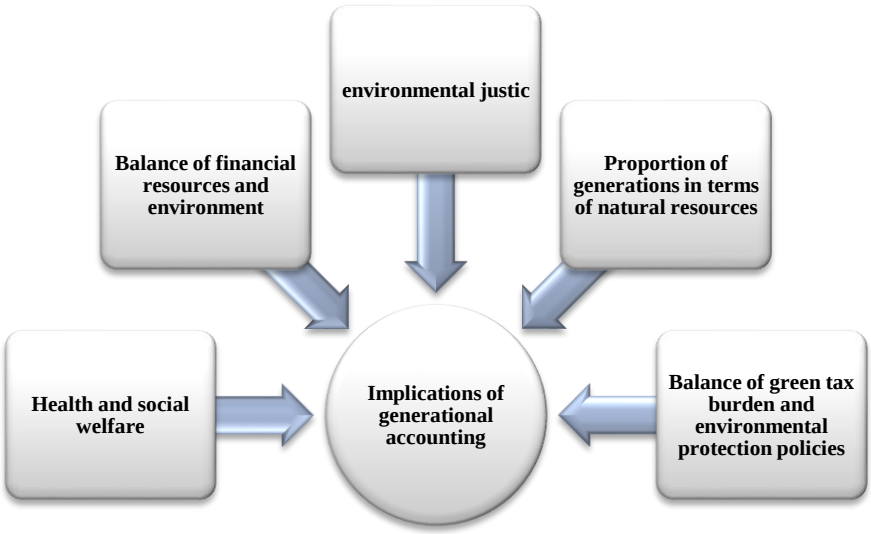

Figure 3. Generational accounting consequences

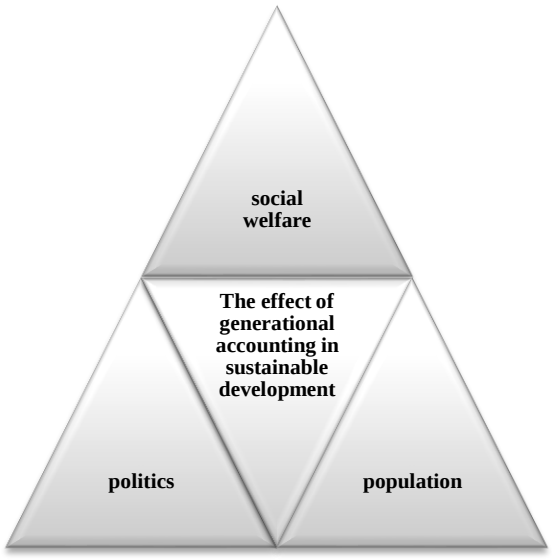

Figure 4. The role of generational accounting in the development of green sustainability

2.3 Generational accounting and interactive environmental strategies

An important part of every country's economic system is dependent on the environment, and government policies and programs can be effective to some extent in creating integration in the functional field of companies against social expectations. The issue of generational accounting is an important part of institutional supervision through which governments try to use the role of accounting in various tax, political, and economic fields to prevent the imposition of environmental costs (Stranieri et al., 2021). Undoubtedly, the result of such continuous monitoring of the financial functions of companies can create more balanced values and norms of interaction between the social environment and the response functions of companies because the created values and norms define a more stable path of social expectations in environmental protection for companies. With the market environment becoming more competitive in protecting the environment, companies in this field will be more successful if they have higher voluntary disclosure capacities regarding environmental costs (Chan et al., 2022). In fact, as Kotlikoff (1984) stated in explaining the concept of generational accounting, a balanced level of cost and benefit for companies will be created through this approach in green accounting, which can strengthen the interactivity of environmental strategies (Draper et al., 2014).

Although theories such as political economy theory, legitimacy theory, stakeholder theory, and information symmetry theory based on accounting and financial reporting purposes require that information related to the environmental behavior of companies should be disclosed favourably and make access to this information possible for everyone to improve the level of interactive values between the company, analysts, and investors, the facts are that due to the existence of conflicts between the stakeholders and the companies, there is a lack of incentives to disclose environmental information. Therefore, by understanding these conflicts, generational accounting is trying to strengthen environmental interactive strategies more dynamically by creating a balance in cost and benefit based on integrated values and norms through learning the macro and micro approaches of environmental performance (Decoster et al., 2014). Concern about the power-seeking attitude of companies towards the disclosure of environmental and functional information of companies has always been considered a dominant reason among capital market observers and researchers in this field because management plays the main role in the main direction of company activities (Choi and Szewczyk, 2018). By accepting this limiting factor in the formation of green accounting values, environmentalists of the behavioral school believe that to solve the environmental problems of companies and disclose optional information, it is necessary to change the direction from physical and ecological sciences to behavioral and moral sciences by creating environmental discourse strategies. Because these sciences seem to have a good potential for developing ways to improve the environment due to managers' understanding of the conflicts between the company and the social environment (Brauch, 2011), the goal of dynamism and strengthening the consonance of environmental discourses is to develop the qualitative perceptions of decision-makers and managers of economic enterprises to reduce environmental pollution. This approach, aligned with green accounting dimensions, can also help increase information transparency. Therefore, relying on the theoretical issues raised, the hypothesis of the research is presented as follows:

Research hypothesis: Generational accounting significantly affects interactive environmental strategies at the level of capital market companies.

3. Research methodology

This study is considered practical in terms of the type and nature of the investigated issue and its purpose. In this study, in terms of the data collection process, the research is included in the quantitative/descriptive survey-correlation category since the required data were collected based on a survey. Therefore, the questionnaire was used to collect research data because, following previous

studies, it is an effective method of collecting data from a large sample in the applied research category. Also, the library method and the theoretical bases of similar studies were used to collect the required principles. The period of questioning the subjects is six months, which includes the last three months of 2021 and the first three months of 2022.

3.1 The statistical population of the research

The statistical population in this research is the managers of different levels of companies admitted to the stock exchange during the research period, which is assumed to be unlimited due to the lack of official statistics. Therefore, to determine the sample size, Cochran's formula is used with the assumption of an unknown statistical population as follows:

$$n = \frac{Z_{\frac{\alpha^2}{2}} pq}{d^2}$$

In this equation: n = number of samples; $Z_{\frac{\alpha^2}{2}}$= the standard normal value, that is, the number 1.96; pq = ratio of the variable attribute, i.e. 0.5; d^2= the probability of measurement error is equal to 0.05. Now, according to the following calculation:

$$\frac{1.96^2 \times 0.5 \times 0.5}{0.05^2} \cong 384$$

According to the above relationship, a sample size of 384 people was obtained. To increase the validity of the research, 430 questionnaires were randomly distributed among the participants; finally, 392 questionnaires were received and became the basis of statistical analysis.

3.2 Research tools

The research data collection tool was a questionnaire. The questionnaires used in this research were standard. The questions of all the questionnaires were arranged using a 5-point Likert scale from completely agree to completely disagree. Below is the operational measurement method for research variables.

3.2.1 Independent variable

The format of past research on generational accounting has been evaluated in the form of the following proposed equation.

Current Generation Net Current Tax Payments + Future Generation Net Current Tax Payments Value = Future Government Net Current Expenditures Value (Wealth) Governments Net Assets

Considering that the data resulting from the above equation is usually not fully disclosed due to the difference in government policies in disclosing environmental performance information, a questionnaire adapted from Gokhale et al. (1995) has been used in this research. This questionnaire, which includes eight questions and two subscales, is assessed through a 5-point Likert scale. The two criteria of this questionnaire include sustainability macro-functions and operational micro-functions. In macro sustainability functions, generational accounting performance is based on measuring companies' environmental tax characteristics to the government's political expenses. It includes the dynamics of market competition and economic growth. In contrast, in small functions, the performance of generational accounting includes establishing a green internal control system, green reward incentives for managers, Green education and green production infrastructure. For example, at the level of macro-sustainability functions, it has been suggested whether companies' voluntary disclosure of green operating costs can help environmental sustainability. Can the government help to reduce environmental and political costs by creating financial incentives? Can

the creation of competition in the market of green products lead to an increase in investment returns in the capital market? Can the integration of green functions of companies in the disclosure of environmental functions help economic growth? The reliability of this questionnaire was estimated based on Cronbach's alpha coefficient, which was equal to 0.79, which was more than 0.7, so this questionnaire was approved.

3.2.2 The dependent variable

The dependent variable of this research is environmental interactionist strategies. Herndl and Brown's (1996) questionnaire was used to measure this variable, and it included 12 moderated questions regarding the three dimensions of this strategy (policy, scientific, and narrative strategies). This questionnaire is based on a Likert scale that includes the range of completely agree (5 points), I agree (4 points), I have no opinion (3 points), I disagree (2 points); and I completely disagree (1 point). It examines the level of functions of environmental interactions in the capital market, which examines the role of the institutional power of companies in developing environmental policies. On the one hand, in the form of regulatory interaction and the framework approach of information feedback among companies to formulate procedures for sustainable environmental development, in the form of knowledge-building interaction. On the other hand, it finally discusses and examines narrative interaction to align the expression of environmental interactions of companies based on moralism and spirituality. Due to its standardization, the validity of the questionnaire was confirmed, and its reliability was confirmed as 0.87 in Murphy's research (2018).

Therefore, relying on the definition of research variables and according to the nature of formulated hypotheses, the theoretical framework of the research is presented in Figure 5:

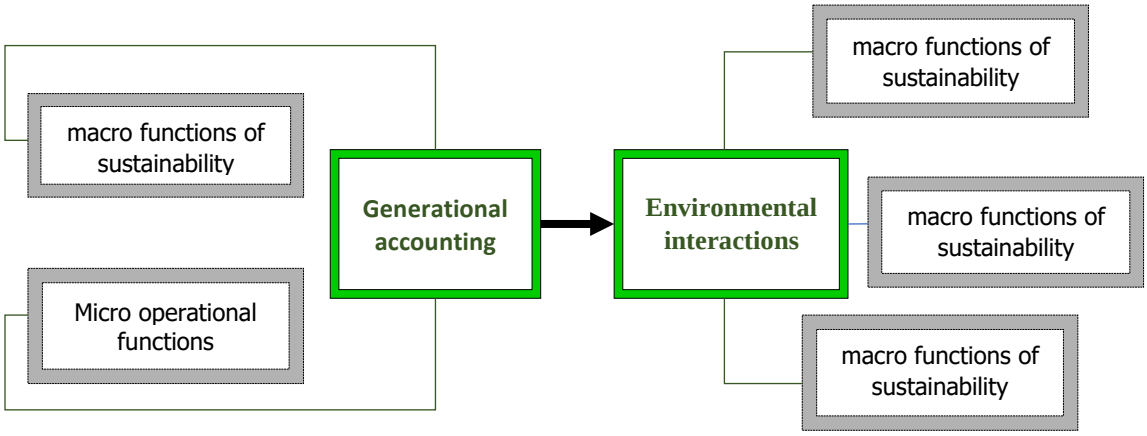

Figure 5. Theoretical framework of research hypothesis testing

4. Research findings

4.1 Descriptive Statistics

According to Table (2), the highest average is related to the narrative interaction strategy subscale (4.282), which indicates that a kind of collective effort to describe environmental functions in the form of social norms is being formed by companies. It can determine the future perspective of the interaction of industries with the environment in a more dynamic way. On the other hand, it was found that the highest standard deviation is related to the law enforcement interaction variable with a standard deviation value of 0.99, which means that companies and participants believe that

coherent and integrated approaches regarding the effective monitoring of the protection of related institutions on the environment do not accept and this issue has caused a kind of confusion and non-formation of a coherent regulatory requirement.

Table 2. Descriptive statistics related to research variables

Variable	Subscales	Sign	Mean	Median	Minimum	Maximum	Standard deviation
Environmental Interactionist Strategies	Regulatory interactionist	Regulatory Interactionist	3.841	4.210	1.000	5.000	0.960
	Scientific interactionist	Scientific Interactionist	4.169	4.232	1.000	5.000	0.720
	Poetic interactionist	Poetic Interactionist	4.291	4.521	1.000	5.000	0.650
Generational Accounting	macro functions of a sustainability	Sustainability Macro Functions	3.117	3.268	1.000	5.000	0.490
	Operational micro-functions	Operational Micro Functions	3.036	3.505	1.000	5.000	0.810

4.2 Inferential statistics

Three reliability criteria, convergent validity, and divergent validity are used in fitting measurement models. In order to check the reliability of the research measurement model, factor loading coefficients, Cronbach's alpha coefficients and composite reliability are used.

Table 3. Coefficients of factor loads

Variable	Factor	Index	Factor load
Environmental Interactionist Strategies	Regulatory Interactionist	Regulatory Interactionist	0.510
	Scientific Interactionist	Scientific Interactionist	0.760
	Poetic Interactionist	Poetic Interactionist	0.830
Generational Accounting	Sustainability Macro Functions	Sustainability Macro Functions	0.450
	Operational Micro Functions	Operational Micro Functions	0.770

The criterion value for the appropriateness of factor loading coefficients is 0.4. According to Table (3), all the coefficients of factor loadings of the questions are greater than 0.4, which shows the appropriateness of this criterion. According to the data analysis algorithm in PLS, after measuring the factor loadings of the questions, it is time to calculate and report Cronbach's alpha and composite reliability coefficients, which are shown in Table (4).

Table 4. Results of Cronbach's alpha criterion and composite reliability of hidden research variables

Hidden Variables	Signs	Cronbach's Alpha coefficient (Alpha> 0.7)	Composite reliability coefficient
Environmental Interactionist Strategies	Regulatory Interactionist	0.830	0.880
	Scientific Interactionist	0.870	0.910
	Poetic Interactionist	0.760	0.850
Generational Accounting	Sustainability Macro Functions	0.840	0.880
	Operational Micro Functions	0.880	0.910

Considering that the appropriate value for Cronbach's alpha and composite reliability is 0.7, and according to the above table's findings, these criteria have adopted a suitable value for the variables, so it is possible to confirm the appropriateness of the reliability of the research measurement models. The second criterion for examining the fit of measurement models is convergent validity,

which examines the degree of correlation of each construct with its questions (indices).

Table 5. Convergent validity results of hidden research variables

Hidden Variables	Signs	Extracted average variance
Environmental Interactionist Strategies	Regulatory Interactionist	0.660
	Scientific Interactionist	0.710
	Poetic Interactionist	0.590
Generational Accounting	Sustainability Macro Functions	0.610
	Operational Micro Functions	0.730
	Regulatory Interactionist	0.680

According to the findings of Table (5), the AVE criterion for the underlying variables has adopted an appropriate value of more than 0.5; as a result, the appropriateness of the convergent validity of the research is confirmed.

According to Table (6), the root mean value of the shared values of the hidden variables in the present study, which are located in the houses in the main diagonal of the matrix, is greater than the correlation value between them, which are located in the lower and right houses of the primary diameter. Each construct in the research model interacts more with its indicators than others. This shows the appropriate divergent validity and appropriate fit of research measurement models.

Table 6. Fornell and Larcker matrix to check divergent validity

Factor	Sign	RI	SI	PI	SMF	OMF
Regulatory Interactionist	Regulatory Interactionist	0.810				
Scientific Interactionist	Scientific Interactionist	0.090	0.840			
Poetic Interactionist	Poetic Interactionist	0.230	0.460	0.770		
Sustainability Macro Functions	Sustainability Macro Functions	0.570	0.240	0.330	0.830	
Operational Micro Functions	Operational Micro Functions	0.570	0.240	0.330	0.160	0.830

In the current research, two criteria, coefficient of determination (R2) and coefficient of predictive power (Q2), have been used. According to the Table below, the value of R2 has been calculated for the endogenous structures of the research, which can confirm the appropriateness of the fit of the structural model. In addition, to check the predictive power of the model, a criterion called Q2 was used. According to the results of this criterion in Table (7), it can be concluded that the model has strong predictive power.

Table 7. Values of determination coefficient (R2) and prediction power coefficient (Q2)

Factor	Sign	R2	Q2
Regulatory Interactionist	Regulatory Discourse	0.270	0.170
Scientific Interactionist	Scientific Discourse	0.600	0.120
Poetic Interactionist	Poetic Discourse	0.690	0.360
Generational Accounting	Generational Accounting	0.400	0.440

After examining the fit of the measurement and structural models, the general model of the structural equations of the research should be checked using the Goodness of Fit (GOF) criterion, with three values of 0.01, 0.25 and 0.36 as follows: weak, medium and strong values for GOF. This criterion is calculated through the following formula:

$$GOF = \sqrt{\overline{Communalities} \times \overline{R^2}}$$

Where

Communalities = Average common values of hidden variables and $\overline{R^2}$: the average values of the coefficient of determination of endogenous variables of the model.

Table 8. Communality and R^2 of research variables

Hidden Variables	Sign	Communality	R^2
Regulatory Interactionist	Regulatory Discourse	0.660	0.270
Scientific Interactionist	Scientific Discourse	0.710	0.600
Poetic Interactionist	Poetic Discourse	0.590	0.690
Generational Accounting	Generational Accounting	0.440	0.400
Environmental Interactionist Strategic	Environmental Interactionist Strategic	0.510	

Table 9. The fitting results of the general model

Communality	R2	GOF
2.630	0.480	0.0540

According to the value obtained for GOF of 0.54, the overall model is confirmed to be a very good fit. After examining the fit of the measurement models and the structural model and having a proper fit of the overall model and according to figures 6 and 7, the results of the research hypothesis test are discussed, presented in Tables (8) and (9).

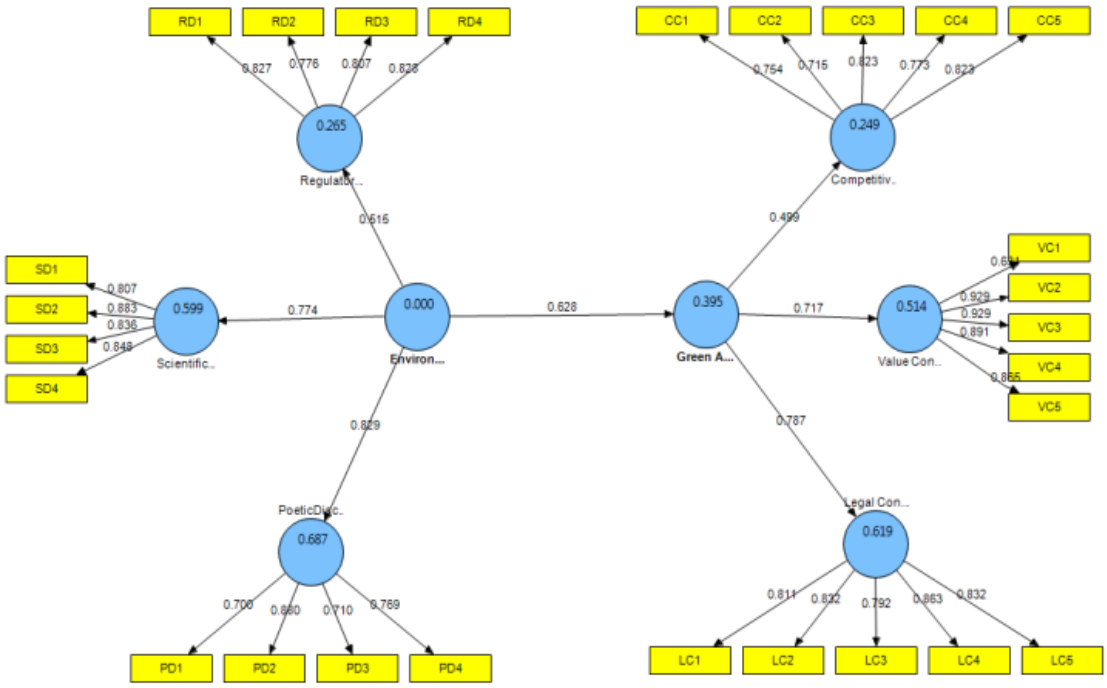

Figure 6. Structural model of the research hypothesis with factor loading coefficients

Table 10. The results of the research hypothesis test

Hypothesis	Causal relationships between research variables	Path coefficient (β)	Significance (T-value)	Test result
H1	Generational accounting significantly impacts environmental interactive strategies at the level of capital market companies.	0.620	6.120	Confirmed

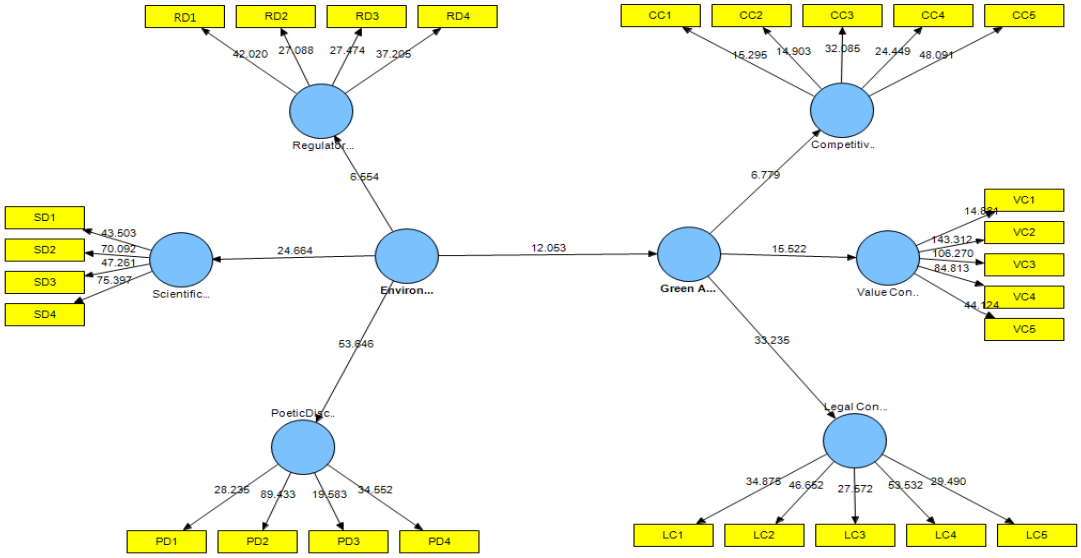

Figure 7. Structural model of research hypothesis with significant coefficients

According to Figures 6 and 7, the standardized coefficient (path coefficient) between research variables was determined based on the fit of the model in the research hypothesis test, generational accounting on the interactive environmental strategies of capital market companies with a positive path coefficient (β) 0.62) and the t statistic between two variables is equal to (12.06), which confirms the research hypothesis present in Table 10.

5. Discussion and conclusion

This research aims to investigate the effect of generational accounting on environmental interactionist strategies. The results showed that generational accounting positively and significantly affects environmental interactive strategies. Since generational accounting has two macro and operational mechanisms and seeks to develop environmental perspectives in accounting, it can be concluded that focusing on financial and institutional functions in green accounting will lead to the creation of strategic environmental interactions because the integration resulting from the implementation of institutional and governance guidelines at the level of the capital market creates a level of interactive values and norms between companies and the environment. Protecting the interests of the current generation, based on a long-term perspective, prevents the burden and pressure of environmental costs from the current generation to the future generation. Environmental interactionist strategies are considered to be a kind of development of inclusive perceptions in social contexts with the decisions of company managers that, based on the effectiveness of generational accounting, will lead to an increase in information transparency from the perspective of macro-sustainability activities and operational functions, such as environmental costs. These strategies are a philosophy based on coherent and integrated approaches of mutual action and symbolic interactivity between the company and social expectations. Based on a charter, a specific norm or procedure is carried out regardless of institutional and legal requirements and displays a unified image of social collectivist behaviors. The issue of generational accounting is considered an essential part of institutional supervision, based on which governments try to use the role of accounting in various tax, political, and economic fields to prevent the imposition of environmental costs to create more balanced values and norms of interaction between the social environment and the response functions of companies. That occurs because the created values and norms define a

more stable path of social expectations in environmental protection for companies. As stated by Kotlikoff (1984), in explaining the concept of generational accounting, a balanced level of cost and benefit for companies will be created through this approach in environmental values, which can strengthen the interactivity of environmental strategies. The result obtained is in line with that of Cho et al.'s research (2022), Pickering and Norman (2020), and Klumpes (2001).

Implications

The results of this study can help the development of generational accounting to incorporate long-term implications of fiscal policy on intragenerational (within generations) and intergenerational (across generations) distribution and fiscal sustainability while including future changes in the demographic structure of the population. Moreover, the result of this study suggested to the legislators and policymakers of this field that through holding environmental accounting workshops and training courses, they should be given the necessary training to understand better the factors affecting reduced environmental pollution and maintaining its sustainability in the long term. In addition, it is suggested to the editors of university course topics and those in charge of accounting education to consider the environmental accounting lesson and its topics when compiling the accounting education topics so that in this way, the accounting students have the necessary knowledge and skills to protect from natural sources. On the other hand, it is suggested that the elements of corporate governance, according to the nature of the industry and their strategic activities, by using the knowledge of experts and in cooperation with consulting institutions to improve the effectiveness of generational accounting, to direct the financial systems towards a more realistic and transparent disclosure of environmental performance and creating an atmosphere of cooperation with thinkers in this field helps to improve the level of competitive functions and interactive value of the environment. Finally, it is suggested that the research and development teams and units, by analyzing the level of interests and the existence of conflict between the interests of companies and the social environment while promoting the knowledge of managers in formulating environmental-centred interaction strategies, try to make the pillars of financial reporting more balanced in interest between the company and the environment towards dynamics.

Limitations

Many of the empirical objections are related to the assumptions regarding the projections of the variables, not only for the population but mainly for our economic variables. One of this study's limitations is the collection of qualitative data on generational accounting. This variable has been small due to the economic and environmental parameters in most of the prior research. In this study, we faced limitations such as the participants' mutual understanding regarding this issue. On the other hand, another limitation of this study is related to the selection of participants, which seems to be that if specialized people had participated in this study using more specialized analysis, more reliable results would have been presented.

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