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Reimagining ESG Metrics for a Human-Centered Economy

1. Introduction

Environmental, social, and governance (ESG) factors are increasingly important in today's global economy. High-profile business failures highlight the need for more forward-looking governance metrics. More recent events, such as the pandemic and the climate crisis, have shifted the focus to social metrics and adaptation-related governance investments. Research and practice in ESG metrics must be fundamentally rethought to address these issues.

The demand for internet-based reporting frameworks is increasing because conducting a decent corporate and governmental ESG analysis by hand takes significant time. However, the budding ESG tech sector is still in a still-formative, chaotic, gold-rush state, and incentives can spur green hacking. Thus, crowdsourcing human expertise and rationalising global ESG research are recommended. New open-source tools are developed to contribute substantial proof-of-concept research to the global ESG agenda and encourage further related research.

A scientific approach to coding a democratically retrainable fortnightly ESG forecasting bot to tap the global output, social network, and compliance clout of the second most popular online newscaster can provide early ESG signalling on widespread corporate net-zero pledges. These real-time news-based signals are designed to complement existing predictions based on annual reports and to serve as a tool for smaller investors who cannot afford to pay for private insight into such pledges. As developing countries are projected to need to more than triple their current annual financing to effectively combine climate adaptation with poverty alleviation, developing countries' compliance is essential for the more climate-vulnerable third-world countries' further sustainability.

1.1. Background and Rationale

Quality of life, equity, health, and security are critical indices of well-being. While GDP is strictly a measure of market transactions, GDP results provide insight into wealth, an essential determinant of social and individual outcomes. However, including only GDP-type measures presents a misleading view of economic performance because they cannot capture crucial elements of human well-being. Economic well-being indices focus on outcome measures related to individual endowments.

Measures of the stock of human development galvanise efforts to produce measures of public policies. Here, a new set of potential outcome-focused indices of economic well-being is developed, and preliminary measures are provided. A focus group with diverse experts assists in rendering initial indices focused on life chances, human potential, and opportunities.

Recent indices of well-being are reconsidered in light of debates concerning policy relevance. Similar potential measures of economic performance are developed, and preliminary U.S. results are provided. Simple measures of average and variance in income across classes are used to capture equality considerations. GDP is critiqued as a measure of performance. Alternative indices are presented that would direct attention to improved health and modernisation of structures.

Consideration is restricted to outcome measures across types of capital that do not confound economic processes, rendering endogenous growth models invariant to the weights of the kinds of capital in their description of the economy. The objective is to provide comprehensive measures to assess performance and frame policy challenges and opportunities in a rapidly evolving knowledge-based economy.

The goal is to elaborate on another convergence of interests among public and private organisations. This convergence centres on a new agenda for social knowledge production that is attentive to markets, democracy, and epistemology and focuses on human capital. The concept of capital is foundational to modern economic thinking. Capital is understood as a store of value among various financial models, all of which share assumptions of scarcity of means. In this view, public resources need to be owned, valued, and intelligently allocated in ways that benefit private owners.

2. Understanding ESG Metrics

Environmental, social, and governance (ESG) metrics are a broad set of non-financial performance indicators that collectively communicate an investment, company, or fund's sustainability rating. These metrics generally fall into three categories: environmental performance indicators, social performance indicators, and governance performance indicators. Organisations of all types, including large corporations, small businesses, and non-profits, may be rated on these ESG metrics or choose to disclose metrics voluntarily.

Utilising non-financial performance metrics to gauge organisational performance is not new. New models to assess corporate performance based on social and environmental performance began emerging as far back as the 1970s. ESG metrics evolved from prior frameworks or attempts to measure the impact of corporate social responsibility, such as social audits. In the investment arena, the notion is not new either. As far back as 1928, the advocacy for socially responsible investing was made. While other benchmarks and metrics were developed, ESG metrics emerged as a response to the growing need for standardised sustainability disclosure frameworks at the global level.

Over the last two decades, standards-setting organisations and initiatives have launched efforts to develop reporting frameworks for CSR. These early frameworks were extensible. Despite their detailed nature, questions arose about whether strict adherence to them was costly and whether the benefits outweighed the costs. Analysts began developing broader ESG performance estimators to predict CSR ratings based on data from public information sources. As these attempts proliferated, a complementary industry developed indices to measure performance against various yardsticks.

2.1. Definition and Evolution

Adopting the principle of a human-centred economy requires a reassessment of associative calculations, objectives, and dynamics currently in effect, including economic measurements. Historical data is the basis for such calculations, objectives, and current dynamics. Elucidating the simple but often overlooked premise of human-centred economics as distinct from wealth-centred economics can open new and disruptive evolution paths. In a wealth-based economy, the real-life choices and actions of all agents—individuals, household units, firms, societies, and nations—accumulate as aggregation over time expressed as a systematic, ongoing wealth of human life, institutions, and nature, privately owned in each case by legal and financial settings. On these grounds, the primary

metric of the present and future is the expected investment return on these pre-existing concentrations of wealth. These economic prisms, structures, and dynamics can be traced back in history, philosophically explained, and resilient to shocks. Nevertheless, in the context of the modern, highly asymmetric, and complex real world, these economic settings globally undermine the financial viability of all societies and competition among them. Such fundamental failures require an innovative leap in adopted perspectives, assumptions, objectives, metrics, and policy targets. A human-centred economy is one in which all economic events, including present and predicted incomes and outlays, are relationally associated with, in the first place, individuals, then social units of all strata, while these accounts are aggregated to firms and societies, where the measures are independently calculated for domestic undecomposed units and nations. Building on this gold standard language of the economy, the viability of the whole economy can be evaluated on different timescales. Such a proactive control objective can be turned into a set of specific, actionable policy targets at various timescales, which, if and when adopted by all nations, would yield a perfectly viable confluence of compound growth rates across all units of the economy.

3. Challenges with Current ESG Metrics

As impact investing continues gaining traction, so does the need for accurate, reliable tools for effective decision-making. Environmental, social, and governance (ESG) metrics emerged to tackle this issue. Yet, they have come under increasing scrutiny lately. This section details the limitations, criticisms, and challenges with current ESG metrics and their implications for a reimagined approach.

The limitations and criticisms of ESG metrics can be grouped into four broad categories:

• Data issues: Current metrics are severely limited in assessing actual impact based on data sets used, lack robust methodologies, and are based on incomplete or less forward-looking data.

• Irrelevance: As alternatives are made available, current metrics risk becoming irrelevant.

• Encouragement of superficial change: Current metrics can encourage minimal or superficial corporate sustainability initiatives that raise scores without meaningful impact.

• Gaming the system: Current metrics can lead corporations to produce and supply data in ways that artificially raise scores without increasing actual sustainability efforts.

The consequences of these limitations, criticisms, and challenges are far-reaching. First, the problem of incomplete, wrong, or old data persists, even when alternatives are sought, or other voluntary disclosure approaches are employed. The cost of trade-offs has been workforce displacement, diminished interest in tracking initiatives and growing distrust of impact assessments. Everything has a hidden cost. Businesses must balance the hidden costs of greenwashing and disconnecting while pursuing a more concrete human-centred competitive advantage.

Second, as awareness of the issues with current metrics and the alternatives expands, companies and funds may find themselves either forced or deciding to abandon current metrics altogether. This may start innocently enough with increasing interest in other options. Still, as those experiments worsen current ESG scores and damaging press mounts, companies will be pressured to abandon everything or use a rival's score as a weapon in corporate war.

They must resort to win-win strategies: "If they disavow all current ESG metrics, perhaps the worst mutually damaging scores are avoided." Few may survive competitively and reputationally intact in this scenario.

3.1. Limitations and Criticisms

While ESG metrics have gained prominence in the investment community, critics argue that these scores have significant structural limitations. Greater scrutiny has brought many of these criticisms to light. Measurements of comparable non-financial data have historically been difficult across companies and countries. For example, within the E metric, the category 'water' requires 19 separate company disclosures across various data sources, which are scored by different methodologies. Environmental disclosures can also be heavily jurisdiction-specific, such as information on emissions from landfills. The S metric deals with similar jurisdiction-specific complexities, focusing on social issues that often differ from country to country or city. Disclosures regarding a company's internal workplace can vary significantly between the disclosures of a firm such as Starbucks in one location compared to another, subjecting this information to immense local cultural factors. These complex disclosure environments make simple measurements using existing accounting systems insufficient.

ESG methodologies also differ widely from each other. Studies find that ESG data provider ratings on the same asset have as much as a 38% correlation. Firms rated as high ESG issuers by the most prominent provider have as little as a 7% chance of being rated similarly by the second-largest. Some methodologies bias lower scores towards better-performing companies, while others penalise better performers to encourage improvement. One assessment noted that 'among the 1,036 highly-rated firms...219 are rated as leaders by one ESG provider while being laggards to another.' A significant disparity exists in companies' numeric ESG estimates even when scores successfully capture the general ESG performance of a portfolio. Backtesting results found that positive ESG metrics lead to no statistically significant risk-adjusted alpha for any of the three global ESG funds studied, all with very different shareholder holdings based on portfolio ownership.

4. The Case for Human-Centered ESG Metrics

ESG and corporate sustainability must be restructured based on economics that is aligned with humanity's goals for equity, dignity, well-being, and opportunity for all. Forgoing a quick fix to reimagine ESG metrics risks the further entrenchment of a non-humancentric economy. Even if enhanced standardised ESG metrics are implemented at scale, their design will be instrumental in mitigating or exacerbating systemic inequities in political, economic, environmental, and social institutions and systems. Crowd and expert sources hack ideation of human-centred metrics for better corporate accountability and pathways toward systemic reimagining ESG as human-centred, people and planet-aligned, voluntary, and publicly accessible commons for all. Reimagining existing ESG metrics toward a dialogue with a global diversity of people's conceptions of well-being and their lived experience of inequities may be one step toward rendering E and S more complete and repairing and growing orientation.

A multi-stakeholder coalition addressing the failure of current ESG in delivering equality and fairness is recommended. To give a voice and visible platform to the needs of less evaluable corporates, public deliberation on individual and multi-stakeholder weightings of metrics and any trade-offs with regulatory requirements concerning vast differences in lived experience, national equity, inclusivity, political, economic, social, and environmental context, and alignment with public suitable investments is recommended. Attention to the cost of compliance with financial services and capital requirement directives may direct capital toward assurances of systemic exclusion of complex categories instead of

sharing custodianship with a broader and diverse group of stakeholders or the collective take-up of dialogue. The recent acceleration of metrics crowding and standardisation converging on targets and indicators is recommended to be scrutinised from the perspective of dominance or exclusion of public or expert discourse in global governance and discourses connections to economic and finance global growth races. Corroborating socio-technical scenarios of limiting or excluding broader discourse to consider how to rebrand, limit, or preharvest existing models, labelling them nature or financing, should be openly debated.

4.1. Ethical and Social Implications

The human dimension in ESG deliberations has been predominantly focused on a company's responsibilities to its employees, mainly through a worker's rights lens. Attention to the responsibilities companies assume in their broader interactions with customers, suppliers, and communities has been insufficient, generating a long list of negative externalities endured by various stakeholders because they have found themselves at the wrong end of a second-order equation or similar ruse. The expansion of the ESG discourse has put these considerations under greater scrutiny but has had too little impact on resolving these concerns nor on how ESG decisions are deficient in their attentiveness to the intangibles on which value creation depends. Attentiveness to the social dimension permits the identification of a much more comprehensive range of company conduct that falls foul of its responsibilities to people, broadening the ambit of engagement dramatically. Recognition of the ethical dimension compels consideration of conditions that must be met if a company's interaction with people is said to be just and permits that broad band of conduct to be better understood. This, in turn, renders salience to a range of goals and interests that might otherwise have been regarded as indiscriminately good or bad but have been rendered exceptional or invisible by a sick calculus in ESG deliberations. Recognition of ethical implications within social considerations adds attentiveness to the efficacy of the mechanisms on which upholding the social responsibilities of companies is premised. Of necessity, this inquires into the nature of the different goals pursued by and means through which different actors attempt to enhance human well-being and the extent to which the impediments are understood and addressed. These are matters on which existing social considerations are almost entirely mute. The efficacy of the mechanisms by which ethical considerations are considered in some existing ESG parameters has been redressed in analysing the moral implications of human rights considerations. However, these concerns apply equally to the broader ambit of social considerations.

5. Key Principles of Human-Centered ESG Metrics

To foster a human-centred ESG strategy—inclusive, equitable, and community-oriented—organisations need to adopt metrics that put people at the centre of ESG understanding, decision-making, and action. The following fundamental principles are suggested to aid the assessment, recalibration, or design of ESG metrics and measurement systems in a human-centred direction.

Inclusivity and Diversity

Human-centred ESG metrics are inclusive and celebratory of diversity. They represent the hard and soft aspects of ESG performance of all groups, communities, or populations that may be impacted by, interact with, or participate in the reporting organisation's activities, products, services, or operations. They reflect the diversity among those groups, communities, or populations—at-risk, marginalised, privileged, highlighted, neglected, co-opted, and more. They capture narratives that diverge from the dominant discourse and metrics, stories that come from within communities and that contextualise the numbers.

Human-centred ESG metrics are inclusive and celebratory of diversity in themselves. A diversity of methodologies—e.g., quantitative and qualitative, standardised and localised, stories and numbers—is employed to holistically grasp the ESG performance by engaged communities and their stakeholders and to meet the needs of diverse audiences. An expansive array of data sources and ecosystems—including big data, administrative data, crowdsourcing, the arts, and offline tools—and modalities for engagement and participation are leveraged to collect, co-generate, and assess the metrics in partnership with communities worldwide. Importantly, people are tied into the process—they are asked what matters to them and how they wish to report.

5.1. Inclusivity and Diversity

Inclusivity and diversity are fundamental principles of a human-centred economy. This implies that all people, particularly those from marginalised groups, must be part of the economy, define it, and fully participate as equal citizens. Metrics embodying this principle would ensure that public policies not only enact promises to address every person's situation comprehensively but that actual action is being taken. Having gender-disaggregated data that is up to date may be an essential first step, but gender metrics alone are not enough to capture the complexity of multiple, simultaneous deprivations. There needs to be a way to narrow down data that countries continuously collect about their populations,

obtaining an overview of the most restricted citizens. For any inference to be robust, it is necessary to assess extreme forms of deprivation, such as not attending school and not having access to clean water and sanitation.

Decades of research have documented the intersectionality of deprivations. For those least disadvantaged, the overlapping requirements on gender, geography, and wealth typically take values around two. For most of humanity, that number blossoms out, converging to over ten. There may be a poverty trap where those who are currently very poor also tend to be increasingly worse off. Apart from the overlapping approach, better models have been proposed to shed light on more complex ways of discrimination. This requires more detailed information on dimension thresholds and conditional probabilities.

Almost all publicly available national household surveys have been released recently, and researchers have rushed to apply some analyses of that information. Most of the effort has examined individual dimensions of well-being routinely surveyed, such as asset ownership or access to health facilities. These all have the severe limitations described before. Exploring datasets with information on deprivations in dimensions currently out of focus is crucial to map the richness of human well-being. It matters if most of the population has nearly the same wealth or if there are stark differences in ownership patterns granting few citizens enormous power.

6. Developing and Implementing Human-Centered ESG Metrics

Effectively measuring the impact of laws, regulations, and policies requires the thoughtful design of human-centred environmental, social, and governance (ESG) metrics. Legislators and regulators need comprehensive data to identify which organisations are most and least effective and which set of incentives tends toward human-centred behaviour. Potential state interventions and regulatory frameworks could include sanctions for egregious behaviour, tax breaks for organisations that act with discretion, or the simple sharing of knowledge, best practices, and technology to raise the floor of global standards. All such measures hinged on identifying and quantifying the relevant behaviours and thought patterns that move one toward or away from human-centred action. This challenge is met by the design of metrics.

This present human-centred metrics design process has two underlying principles. First, metrics cannot be fully designed in a vacuum, nor can a direct route unearth a selection of human-centred experimentations. A broad spectrum of involvement

and stakeholder engagement is required to know better what needs to be known. This is especially true in a world where some actors can exert outsized power over the heuristics of thought, behaviour, and information sharing on human-centeredness. Second, given the challenging nature of the undertaking, the beginning of the design process must embrace an "experimental mindset"—as open as possible to new and unforeseen developments and outcomes. Only broad engagement and co-discovery of diverse human-centred thoughts, patterns, and behaviours promise to lead to metrics that yield the knowledge and data required to impact the actors that matter most in determining the global outcome of central importance to humanity.

Foremost in understanding how to co-discover what needs to be measured are those organisations most commonly recognised for being "good actors," "responsible," or otherwise concerned with the welfare of people, society, and the environment. Conducting exploratory interviews, workshops, and design sprints with such organisations will determine the definitions of human-centeredness best known to the most responsible actors. In a complementary way, the end states of thoughts, behaviours, and information sharing that are deemed "bad," "toxic," or "disgraceful" also need to be co-discovered in engagement with an array of organisations most commonly recognised for being "bad actors," "irresponsible," or otherwise concerned only with short-term interests—namely, the exploitation of people, society, and the environment.

6.1. Stakeholder Engagement and Co-creation

The co-creation of stakeholder engagement processes is crucial for developing human-centred environmental, social, and governance (ESG) metrics. Stakeholder engagement is a concept with epistemological roots in both the fields of ethics and social sciences. Still, it is currently most recognised in the context of corporate social responsibility (CSR) and sustainability frameworks. Stakeholder engagement takes its cue from the notion of stakeholders as the individuals who can influence or be impacted by an entity's decision-making. Generally, there are four recognised levels of engagement: inform, consult, involve, and collaborate. At the level of collaboration, stakeholders are treated not as objects of engagement but as co-creators of a process and its outputs. This collaborative understanding warrants the elaboration of a typology that sheds light on how stakeholders can be engaged through co-creation processes.

A conceptual typology for co-creation engagement processes is proposed based on two distinguishable axes: the nature of the interaction at the heart of the

engagement process and the degree of stakeholder engagement. Each of these axes can be shaped either by deliberation, whereby actors reflect upon a matter of concern together, or by instrumentalism, whereby actors pursue the advancement of individual or collective interest. Besides, based on the degree of engagement, stakeholder engagement processes can either be fully participative, whereby stakeholders own the process and its outputs, or they can be co-designed, whereby a balance of power is shared between an agency and the stakeholders.

This typology is then applied to illuminate previous stakeholder engagement processes for developing ESG metrics to offer a better understanding of the nature and limits of the co-creation processes that have taken place. Agreed ambitions for such an engagement process include ensuring that the ESG metrics are relevant and valuable to the context of the target beneficiaries, as well as empowering such stakeholders to influence how and to what ends ESG metrics are used. The challenge remains to explore, develop, and coordinate the engagement based on the proposed typology. Besides, it is also essential to establish well-defined boundaries around what is actively discussed and deliberated among the relevant stakeholders.

7. Measuring Impact and Effectiveness

As explainers of performance, metrics are used to make judgments, decisions, and comparisons. Specified metrics models can—at least in principle—be questioned, redefined, and even changed. Thus, how are impact and effectiveness measured, and what metrics models are used to do so? Ad hoc metrics are often used when reasoning backwards from conclusions to suspected causes. The more complex a model becomes, the harder it is to disentangle and understand cause and effect. Such models coalesce chaos into chaos but can have mathematical solutions involving metrics quantified by minimising or maximising certain functions. Metrics may be qualitative or quantitative, and in contexts with many variables, linear correlations can be misleading because models of chaotic systems seldom linearise.

Metrics of intensity, such as granulometry, are often ignored but can be important for understanding on which scales a system is possibly predictable. Many otherwise beautifully parsimonious models of the Earth's climate system would appear as unexplained noise when looked at on scalar scales more significant than 20 million years. In general, scientists interested in predictability and understanding focus on effectiveness metrics. Scientists in academia, large

corporations, and elsewhere interested in decision-making and usage of metrics for funding, job appraisal, and life generally focus on idiopathic metrics.

Effectiveness metrics usually quantify performance and success, and impact metrics quantify influence and consequences. In a simplistic, unipolar, clear bottom-up perspective, performance and success can—as explained above—be quantified by functions such as budget expenditure, more often taking social and communications impacts into account than the truism that money not well spent is no good. In the unilateral expansion of the Earth System Science paradigm—whereby modelling and predictions are taken to determine truth and understanding, and acceptance of forecasts due to fit to observations can, in essence, be inverted to give one pseudo-science predictions paradigms for how to propagate less about anthropogenic change—impact and supposed consequences can be quantified mathematically as perceived influence on public reception and decision-making.

7.1. Qualitative and Quantitative Approaches

A fundamental distinction in research design methodology is between qualitative and quantitative approaches. A qualitative approach usually involves data collection in the form of words. This process can involve open-ended interviews, participatory observation, or written text analysis. These techniques yield descriptive data that can provide explanations of observed social phenomena through categories, themes, or patterns. The qualitative approach can provide in-depth insight into specific individuals with representative site selection and small sample sizes. However, such approaches must be cautious of local peculiarities or the risk of misinterpretations when concluding the research situation. These approaches are often perceived as less rigorous, leaving questions about their replicability and the mechanism of generating insights.

The development of qualitative approaches outlines protocols to mitigate potential problems. They emphasise a systematic and 'grounded' reasoning process between categories, observations, and theoretical interpretations. Typically, qualitative approaches involve coding processes, memo writing, and recursive moves between different levels of abstraction. Despite limitations, a qualitative approach can be well-suited to comprehend new perspectives within complex situations or phenomena comprehensively. The external validity of qualitative designs can be enhanced with parallel survey strategies, replication in different settings, contrasting analytical explanations, or upscaling case study designs.

A quantitative approach often collects data in numeric form. The data is usually the basis for a probability sample of individuals who complete a standard questionnaire or experiment. Quantitative methods can often include large sample sizes, producing empirical data viewed as more rigorous or trustworthy. Such approaches can also consider data representative of larger populations, enabling aggregation. However, there are also limitations with such methods, including the inability to study socially constructed realities and limiting understanding to pre-categorized measures perceived as independent from the individuals asked to answer them.

8. Case Studies and Best Practices

As corporations seek to integrate principles of environmental, social, and governance (ESG) accountability and responsibility into the culture of their institutions, a challenge arises because far too many try to do so risk performing a box-ticking or one-and-done recruitment initiative or campaign. Instead, they must remain on an ongoing journey, requiring deep exploration, critical examination, active reflection, and steadfast commitment from diverse stakeholders within and attached to the enterprise.

Corporations seeking to connect the principles of ESG alongside awareness of the elements of authentic narratives would be well inspired to study the companies and organisations that have been effectively incorporating ESG principles to establish authentic narratives regularly. Here are three varying examples of organisations that are committed to the principles of ESG and have robustly endeavoured to close the loop with audiences to meet the bar for establishing authentic narratives.

Douglas Emmett, Inc. is a publicly traded real estate investment trust in Santa Monica, CA. The company has instituted a dense corporate social responsibility report that thoroughly investigates and transparently illuminates the corporation's compliance with equity and fairness issues regarding its properties and communities, including whether its properties have been inspected for a range of building or maintenance code infractions, as well as instances of tenant complaints. Similarly, the company shines an illuminating light on whether it complies with fair marketing and employment practices to close the loop with audiences, meeting the bar for establishing narratives with a degree of truthfulness, the most interpretively demanding standard of accuracy under the principles of ESG.

The Bank for International Settlements is a non-profit organisation based in Basel, Switzerland, owned and operated by a consortium of central banks from different countries. Research must pack a punch with an upbeat sensibility to properly counsel group and corporate initiatives to meet the ESG bar for peer feedback. As such, the organisation is an excellent example of a summering initiative to understand better how to invest in formative understandings of goodness as peer feedback seeks to better illuminate gaps between powerhouse firms and respectable but less influential enterprises. In its strongly worded regular reporting to stakeholders, the organisation provides a dense, illuminating light on its goodness initiatives that comprehensively cover the nine-question categories that comprise the bar for addressing the principles of ESG with audiences. This deeply investigative reporting routinely addresses questions that put its outreach initiatives and self-ratings to the test. In so doing, it meets the bar for the establishment of narratives with a degree of truthfulness about the respectability of its business and contamination of its services to similar enterprises, the most interpretively demanding narrative standard of accuracy under the principles of ESG.

8.1. Companies Leading the Way

A set of case studies on companies doing exciting work in either the "data" or "frameworks" space and companies using or testing any toolkits. What challenges did they encounter? How are they addressing those challenges? What aspects of the products, systems, and meta-frameworks work well? How might they be improved?

Adele Peters, co-founder of Wellspring, Iceland's first ESG reporting framework focused on social and human capital, discussed the solution of sharing societal value – to look outward at what corporations do for the outcomes of people in society. Wellspring seeks to assess three elements: wages, values, and tax and spending allocation. The way Wellspring is recording, measuring, and valuing these elements is either a qualitative or combinatorial approach of qualitative and quantifiable. One of the challenges is less about what to measure, but rather how to measure – as there needs to be standard measures across a nation or systems. Another challenge is getting much bigger companies engaged in this methodology. Still, many connections have been acquired with academic associates, public institutions, and community foundations.

Andrew Hargadon, a professor of management at the University of California, Davis, presented Human Capital Corporate Reporting – a framework focused on

reporting human capital that follows a concept-mapping methodology and systems dynamics, which allows navigating through complex systems, judging human well-being in economic terms, backing up public-level beliefs or priority factors, and a social assessment tool that produces common language about advancement in human well-being. This framework seeks to make accessible, trusted, reliable, understandable, stimulating, and essential evidence that works on a larger scale towards good human well-being. The most significant challenge so far is not being seen as too hard so that it doesn't get dismissed as just a theoretical exercise. To address this challenge, do-realism is hybridised with plausible, better future approaches.

Claudia De La Cruz, co-founder of Public Allies, introduced its measurement toolkits of human capital and systemic value flow. There is a significant interest in adopting the measurement toolkits, including prepods. However, a challenge is to educate the new companies about the methodologies. Another concern is the inability to reach the small companies that want to run such programs. The dynamics are planned to change to respond to these challenges so that the facilitators do the measuring instead of the predetermined groups leading the learning and adjusting to each company's pain points and report testing.

9. Future Trends and Innovations

The focus on environmental, Social, and Governance (ESG) issues has increased over the past two decades. ESG concerns and the accompanying compliance and reporting obligations have arisen in response to a global backdrop of mounting climate and environmental disasters, financial and economic scandals, and social inequalities, which the pandemic has also exacerbated. Future trends and innovations that may shape the next decade of ESG include the rising importance of social and governance factors, the proliferation of ESG data sensing, and a greater variety of products targeting ESG investors.

There is widespread consensus that climate concerns, precisely carbon intensity, will dominate investment, asset allocation, and corporate strategies in the foreseeable future. Notably, however, social and governance factors attracting growing attention have been exposed post-2020. Severe social issues, including any infringement of civil, political, and economic rights or environmental and human disasters, tend to turn corporate, financial, and investor interests into losses, scandals, or reputational damage. Similarly, non-compliance by specific gatekeepers or intermediary companies with non-discrimination, decency, confidentiality, or privacy obligations towards the users of their services or

products can result in massive fines or even the withdrawal of licenses, ceasing operations in specific markets. Corporate strategies that do not comply with a sound governance structure can also quickly become scandals, high reputational costs, and investor losses. Consequently, there is a growing understanding that sound ESG factors need to reflect risks and problems, as well as opportunities, which have lately become extreme, pervasive, and systemic.

Another salient feature of the future is the communication of ESG data. Consumers, journalists, watchdogs, civil society organisations, colleges, and SMEs can sense ESG data. Likely, non-financial service providers, such as specialised and rival third-party data providers to rating agencies, and advanced AI analytical-based models will emerge. Current forecasts suggest that up to two-thirds of the ESG data will come from releases of publicly available information. These trends and innovations will shape the future of ESG in finance, corporates, and the broader economy.

9.1. Technology and Data Analytics

Clean data is essential to the success of any analytical study. Data before or during its collection should receive significant and ongoing attention, lest invalid or biased data be wholly unusable or the wrong insights drawn from it. It is therefore advisable, wherever possible, to proactively acquire clean data firsthand or, if relying on third-party data, engage in some statistically rigorous examination to confirm its fitness for purpose.

Post-collection data preparation must be regarded as a necessary step rather than an ancillary activity that can be subsumed within an analytic effort. Strict attention—ideally during the project's planning stages—must be given to how the data will be cleansed and coded (or recorded) before analysis. If actors do not conform to the analytic schema or formatting expectations, their data must be effectively discarded. Here, the adage "garbage in, garbage out" holds significantly true.

Collecting quantitative data that adheres to rigorous research design principles, such as random selection, affords tremendous confidence that the data is systematic and unbiased. With systematic data, valid analysis is possible, and statistical algorithms that model systems with deterministic rules can be effectively employed. If the data is either unsystematic or biased, a careful examination for modelling appropriateness and enhanced effort in data

preparation is required. Unsound modelling will inevitably lead to an invalid inference.

Qualitative data analysis is typically more interpretative, such as that performed in content or discourse analysis, and paradigmatically different from the more mechanical analysis of quantitative data. Context, which does not always sit comfortably within the bias/fit/benign linear distinction, plays a significant role in shaping qualitative interpretative processes and thus qualifying the manner of analysis itself. With its rigorous assumptions and rules, statistical systems modelling is conceptual ill-equipped to interpret qualitative data, given its free association with deterministic notions of models. It can be remarked that on this basis alone, there is no qualitative analogue to statistical modelling. Qualitative data, being less complex per se, does not lend itself easily to codification and quantification; given its degree of simultaneity, it is amenable to statistical modelling as complex systems. Statistical or social system analyses, with their common premises of a deterministic analytic schema, do not exhibit the more fundamental properties of qualitative data.

10. Conclusion and Call to Action

As organisations large and small grapple with the implications of their business choices on environmental, social, and governance (ESG) factors—a broad umbrella encompassing climate change, biodiversity, workforce, diversity, health, and privacy—there is a growing push for comparable, consistent, and comprehensive ESG data. Currently, disclosures are primarily voluntary, and when done, they are narrowly defined and rarely submitted in standardised formats. This lack of comparability is exacerbated for investors who need to integrate consideration of ESG data on portfolio companies or firms they are interested in assessing for risk/reward analysis.

There is an immediate need for objective metrics that measure how organisations and the ecosystems they impact are moving toward or away from a more just, equitable, sustainable, and regenerative future. Metrics that provide quantifiable data on how organisations that comprise the economy impact this future must be a fundamental part of the understanding of corporate organisations. A call to action that grounds the discourse on these metrics is proposed: use expanded systems of weights and measures that comprise a conceptual and philosophical framework to create and populate a suite of ESG metrics and datasets that measure the performance of organisations in a human-centric economy.

There is a significant potential financial and socio-political windfall to the organisation or coalition that takes the mantle to lead this endeavour. Such an organisation or coalition could be of monumental mass. More importantly than the potential for financial windfall, the organisation or coalition that spearheads this effort will find themselves in a critical position of influence over the future of humanity. The current evolution of the ESG movement is a battleground for future generations' hearts and minds and economic wealth. ESGs and the data that underpin them will be the architecture upon which the human-centred economy finds its footing.

10.1. Summary of Findings

The increasing integration of Environmental, Social, and Governance (ESG) metrics and scores into finance and investment decisions can significantly intensify the harm that corporate behaviour causes to humanity and the planet. This threat is compounded by the fact that, in their current state, these metrics evaluate issues of vital interest to humanity—including people, biomes, and societies—in ways that treat them as objects rather than subjects. In response to these concerns, the potential unintended and intended consequences of the increasing integration of ESG metrics in finance and investment are investigated, and there is a demonstration of how current ESG metrics generate these consequences. Based on this exploration, ESG metrics are reimagined to assess the same issues in ways that treat them as subjects rather than objects. This reimagining opens the door to the governance of the most profound drivers of the twin climate change and inequality crises. It closes the door to the enclosure of the biosphere, space, and the labour and plasticity of youth. Given the increasing integration of ESG metrics and scores into financial and investment decisions, this topic is of immediate concern.

The increasing integration of ESG metrics and scores into finance and investment decisions can significantly intensify the harm that corporate behaviour causes to humanity and the planet. This threat is compounded by the fact that, in their current state, ESG metrics evaluate issues of vital interest to humanity—including people, biomes, and societies—in ways that treat them as objects rather than subjects. Current metrics do not assess the governance of these issues or the ways their governance can be harmful. Moreover, while nearly all currently available ESG scores are compiled by the same handful of companies, corporate human rights, environmental, or biodiversity issues, emissions, and positive contributions

can be assessed in widely disparate ways, thus creating further systemic risks in the ratings.

A potential response to this concern is to reimagine what is being monitored. Given the difference in the underlying principles, technologies, and data on which artificial intelligence scores and models rely to assess the same metrics across financial systems, it is possible to imagine AI monitoring what is being done to people, biomes, and nature as high-risk yet more controllable systems rather than just potential high-impact and uncontrolled systems. Such a reimagining opens the door to the governance of the most profound drivers of the twin climate change and inequality crises. It closes the door to the enclosure of the biosphere, space, and the labour and plasticity of youth.