



AI VALUE ADDING IN ESG INFLUENCED RESPONSIVE INVESTMENT

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ABSTRACT The technological influence to innovation and digital transformation is applied in every sector today. It is vital for adaptation of latest advanced technologies to provide sophisticated tools based on scientific methods and techniques to give quantitative values related to the ESG factors. Data mining to obtain such information using various relative technologies at affordable cost using well defined and widely accepted metrics will boost the ESG based strategic decisions as a sustainable and RI. This paper stretches its objectives about the AI based evolution of ESG in decision making criteria for various strategic investments, so that the relationship bondage of profit-driven and ESG based investment breakthrough can be improved.

KEYWORDS : Responsive Investment, AI influence in ESG, ESG criteria improvement

INTRODUCTION

Environmental, social and corporate governance (ESG) is a multi-dimensional strategy-based factors that are influencing the issues related to responsive investment decisions. It involves the major Environmental concerns like climate change, bio-diversity, sustainable eco-system; the major social concerns like Right to life as well as peaceful life, consumer protection, discrimination on demographic diversity; the major Governance concerns like Employee issues, management structure and so on. The ESG influences the term 'Responsive Investment (RI)' with ethically defined parameters. But RI is inversely proportional with short term goals and gains. RI can succeed only in long term strategic investment decisions. Many short to medium investments may collectively form a long-term RI but framing such a prototype itself should be part of Sustainable Investment.

Purpose of the Study

The purpose of this study is to examine the importance of Responsive Investment and its sustainability in investment related decisions through the use of various technological advancements in effective implementation and utilization of ESG. This paper mainly focuses on the study of effective ESG based sustainable investment through relative technological advancements influencing strategic decision making of both the individual and institutional investors.

ESG Investment Decision Through Artificial Intelligence

The technological influence to innovation and digital transformation is applied in every sector today. The ESG also cannot be an exception. The quantitative models that provide index for ESG values as well as the improvement measures and factors influencing ESG based Investment decisions criteria are all part of this. This could guide the managerial and social decisions in a well improved manner with transparency in less cost and time. According to the United Nations Global Compact report on Responsible Investment, Technologies like Artificial Intelligence (AI), digitization, automation and Blockchain play a key role in investment decisions related to ESG by Institutional investors. Data Science and analytics extracts meaningful data from various data sources to provide the forecast about future gains through the use of various tools and techniques. Hence data and tools to process the data are important for the investors in their strategic decision-making process. The Artificial Intelligence can be considered as a boon which supports in various ways by providing multiple analytical functions to support this process. It involves data modeling by AI algorithms to provide useful statistical data from different sources available. But this is possible only if key data sources are available to process the respective data using these AI algorithms to get relevant rich analytical reports.

Artificial Intelligence is a term used to denote multiple innovative technological innovations such as the Machine learning which again constitutes its subset known as deep learning, reinforcement learning, smart automation, big data analytics using various platforms like Hadoop, Spark, programming using R, Python and so on. By definition, AI is about possessing of human intelligence by any machine that is specially designed to provide some service which otherwise would be done by Human. This general term also denotes that such AI based machine should be able to learn and engaged in problem solving. It is expected to behave with Cognitive Intelligence

and may also have Emotional Intelligence. Although it can provide use case application in various issues like Natural Language processing, planning, knowledge representation, Social Intelligence and so on; with respect to ESG, the Social and Ethical Intelligence is the key criteria. This could mean that with AI, such Ethical machine could predict motives and emotional states of individual or institutional investors to make better ESG based decisions with available data sources. This is applied to sequential learning and expert systems using Game theory. The AI can also be applied in continuous audit and risk analysis based on trending patterns to effectively use their intelligence in preventing harms as well as minimizing the risks associated through the ethical reasoning of better choice among the available actions.

Impact Case Analysis

According the research report by Deutsche Bank, the AI based machine learning generates strong performance in inferring the context of ESG report to that value of ESG based decision making by Sovereign wealth and large pension funds is increasing with more recognition of ESG macroeconomic benefits. Although ESG concerns have increased with all type of investors, the problem is to quantify the available data in less time to identify which ESG events can outperform in a stipulated time which is also known as the Portfolio performance. The businesses may give multiple reports relating to the compliance in regulatory measures, sustainability reports and even larger related to the Governance. Hence it is necessary for good analytics based on the available big data to provide effective ESG criteria-based decisions which can be effectively done by these AI tools. These can provide relative reports from different data sources analyzing large amount of data to provide statistical and visualized results with justification about the analysis. They can provide advanced Natural Language Processing & ML algorithms to match based on certain keywords related to ESG that are available in the vast reports given by the respective business entity. Although the same business entity may also use the same AI tools to test the validity of the reports in influencing the ESG concern of investors, still the time consuming and results are significantly outperformed with consistency. This scenario over time will be able to provide research for new models and developing of systematic ways to analyze the performance ratings of each business entity based on region, sector, compliance and other such filters. Such systematic ways would exponentially reduce the time taken to analyze large amount of data by investors based on ESG and other criteria. It will provide lot of data visualization charts for different people and agencies in the way they require to analyze data and yield results. This also helps the credit and audit agencies in achieving their respective target of ESG rankings, certifying the compliance of respective business entity for ESG based performance and so on. Similarly, it can also be used as whistle bowler in many cases for fraud detections related to ESG compliance, thus reducing corruption and providing more transparency. Also, it can provide region and sector specific statistics to identify the areas in need push of ESG more vigorously. For example, American data research group Truvalue in collaboration with German based Solactive are using AI tools to provide scores for business entities based on the ESG parameters. They use large amount of unstructured data from various sources to authenticate the corporate disclosures in very less time and provide ESG based scores for the business entities independent of the disclosed corporate data by respective entities in this regard. Similarly,

there are more firms started using the AI in their decision-making process. According to Craik (2019), French based Ecofi Investissements, Advestis and Ossiam are some of the firms that have applied machine learning to ESG data in their process for investment decisions. A socially responsible investment filtering at the beginning of investment decision process such in areas like gambling, coal, etc and make easy filter of many portfolios suggestions to make it fully ESG compliant in the further process. Mathematical algorithms help these firms look at stock's ESG performance with market data and other reports to determine the possibility of generating strong investor returns. Advestis one of the above firms have AI algorithm that looks at all possible variations in ESG scores for more than a half decade to understand the variables such as sector bias, progress in ESG improvement score by various criteria like Carbon footprint, tax responsibilities and other such criteria; and the findings are correlated between ESG score returns to the price returns. A human analysis of such a vast amount of data will have high complexity and difficultly level would take lot of time. But a machine learning algorithm would do this in a robust manner. James Purcell heading Sustainable and impact investing at UBS Global Wealth Management is of the same opinion that machine learning is important in getting bigger and better ESG data, which can include alternative data sources related to corporate culture and sustainability reports to make informed decisions with consistency and without any bias of self reported data.

AI also safeguards in Identity management with privacy which is a major concern in today's Internet revolution. With strict regulations from US and Europe in force for privacy and India enforcing localization of data storage in its strict regulations, people as Consumers and Investors are much worried about the identity management and Privacy of the personal information used by any business entity. This is a important phenomena in the Social and Governance segment. Recent surface has seen top business entities repeatedly fined for breach of regulations by different Authorities, but there is also a strong comment that the fine imposed on them is negotiable compared to the revenue they get through such breach. Hence there exists a necessity to improve the legislation with new approaches based on ESG investment decisions to enhance the identity management and Privacy protection by any business entity. For example, a legislative implementation of multiple breaches related to Identity management or privacy shall lead to suspension of license or patent in relative focus to the breach may send hard signals to both the business entity as well as the Investors of that entity focus more towards the ESG concerns. This can lead to that ESG criteria and ratings based on that by various agencies and Institutional investors can be a crucial checkpoint for every business entity in their operational decisions.

CONCLUSION

Investors possess high risk in their crucial decisions for investment based on various criteria and situations that could vary based on region as well as the industry they plan to invest upon. Risk is inevitably a major concern for all kinds of investors in their strategic decisions. Although credit rating agencies provide various reports as guidance still analyzing vast amount of data for each decision on short span of time is a tedious job. Fund managers have to be very careful in each criterion and do multiple revision checks to ensure right decisions including the ESG based decisions. Hence AI tools in such cases can help significantly reduce the burden of such investors by integrating and linking major risk concerns with regulations, compliance, financial issues, past experiences and mitigation measures. It can provide matrix and charts as outcomes that can guide with large comparative solutions between each pick of investment to be done. For example, a organizations supply chain mechanism, its policy in using renewable energy may not be applicable the same for all region. The strategic approach based on past experience in a different investment will definitely guide for a better risk analysis and suggest whether it can be mitigated or completely avoided. For the given example, if renewable energy is not available for the particular region in supply chain and regulations related to ESG needs to be compromised then it can look for various mitigation possibilities. Based on this, the investor can have reduced risk in their decision-making process. A practical scenario could be natural calamities like floods affecting the Supply chain. It was estimated that Thailand floods in 2011 disrupted supply chain of hundreds of companies. This could have been reduced or mitigated based on ESG investment using AI tools.

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