Section A-Research paper
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Carbon Credit Accounting perception among Chartered Accountants with special reference to India

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Abstract:

This paper attempts to know the perception of the chartered accountants and the budding chartered accountants on the awareness and preparedness level of carbon credits and the carbon accounting system. Carbon credits are becoming more popular not just in India but globally as well. The idea of carbon credits emerged as a way to slow the planet's warming trend. Because of the irreparable harm to the climate brought on by companies and anthropogenic activities that release greenhouse gases, global temperatures are rising, endangering human life, and contributing to global warming. Therefore, when several nations came together at the third Conference of Parties to the United Nations Framework Convention on Climate Change, they came to an agreement that led to the development of the concept of carbon credits. Carbon credits help to safeguard the environment while also providing emerging and underdeveloped nations with a means of generating income. Should they falter to purchase the additional requirements, businesses can either purchase Carbon Credits from the commodities market or participate in Clean Development Mechanism initiatives, both of which are flexibility mechanisms granted under the Kyoto Protocol. Therefore, the purpose of this study is to determine whether or not chartered accountants are aware of how to record the carbon credit in the books of accounts. The government has to take more steps to educate chartered accountants on carbon credit accounting

Key words:Carbon credit accounting, carbon offset accounting, accounting for carbon offsets, carbon credit accounting in India, carbon trading accounting, clean development mechanism, Greenhouse gases, UNFCCC, Kyoto protocol.

Introduction:

Everything in this world comes up with some price associated with it. Similarly, in today's time the growth is done at the expense of the Mother Land. To meet the growing population's increasing demands and requirements, nations have played with the motherland. The growth of industrialization has resulted in surge of the emission of Greenhouse gases (GHGs) and industrial waste into water bodies. This surge supervened in Global warming which is nothing but a gradual rise in the average temperature of the globe. So, now the world has started contemplating things and has set up an organization United Nations Framework Convention on Climate change (UNFCCC) with the objective of stabilizing greenhouse gas concentrations at a level that would prevent dangerous anthropogenic interference with the climate system. Kyoto Protocol is an international treaty to reduce greenhouse gas emissions. It is an extension to the UNFCCC framework.Clean Development Mechanism (CDM) is a way to reduce Green House Gases emissions (i.e. GHGs emissions) through efficient and sound technologies. It is an opportunity for long-term sustainable development of the nation. Carbon credits are the certificates that are issued for certifying emission reduction. These certificates are traded in the international market and purchased by the companies of developed countries which are signatories to

Kyoto protocol in order to cut down GHG emission with the most cost-effective way. Scientists at the Intergovernmental Panel on Climate Change (IPCC) have shown that increased levels of greenhouse gases (GHG) in the atmosphere are warming the planet. This creates extreme weather changes around the world. Currently, carbon dioxide is the main GHG, and is created by burning fossil fuels—coal, oil and gas. By reducing the amount of carbon dioxide, we emit, we may avoid doing further damage to our climate create need for CCA and to make a habitual planet that can support the world population. It helps to make a greener future; and better environmental standards, ISO0041 certification: acquiring environmental management system, Control global warming or weather changes around the world are main drivers of increased in greenhouse gases levels. CCA allows the business to accurate measure the amount of carbon credits. Like-wise 1carbon credit =1 ton of less emission.

Carbon credit accounting (cap and trade system) is giving additional monetary benefit to those businesses or countrieswho are showing their efforts by using eco-friendly techniques (like windmill, solar panels) they create a monetary incentive for companies to reduce their carbon emissions. Those that cannot easily reduce emissions can still operate, at a higher financial cost. Carbon Trading is a useful tool to earn extra benefits both for developing countries and non-developed countries. Clean Development Mechanism also offers an effective source of economic as well as technological development for developing countries with environmental sustenance. Although India is the largest beneficiary of carbon trading, it still does not have a proper policy for the trading of carbons in the market. Carbon credit accounting (cap and trade system) creates a market for reducing greenhouse emissions by giving a monetary value benefit to those businesses or countries who are showing their efforts by using eco-friendly techniques (like windmills, and solar panels) to the cost of polluting the air. This means that carbon becomes a cost of business and is seen as other inputs such as raw materials or labor. The possibilities are endless; hence making it an open market. Operators that have not used up their quotas can sell their unused allowances as carbon credits, while businesses that are about to exceed their quotas can buy the extra allowances as credits, privately or on the open market. The companies that are not already carbon-constrained will need to prepare themselves for carbon legislation as a low-carbon economy in the long run. The overarching goal is to calculate GHG emissions across all emissions scopes, then convert those outputs to CO_2 equivalent (MT CO_2e).

Developed nations with a very high cost of domestic Green House Gas (GHG) reduction, have an option of joint implementation. They can set up a project in another developed country that has a relatively lower cost. In this way, a developed country can earn carbon credits that can be applied during excessive emission targets. Carbon accounting is a new term in the accounting field and currently attracting the curiosity of many scholars and academic studies. Countries across the globe becoming more responsible and accountable toward reporting standards. This stands very essential in the accounting of carbon credits as well. The environmental aspects are an integral angle of financial reporting now. Earlier the question used to be whether firms should do it or not but now the questions stand how firms should do it. Accordingly, the issue comes up as the CA's are prepared, and aware of the knowledge on CCA.

Literature Review:

Global carbon pricing revenues increased by 60% over the past year (World Bank, May 2022). Cross-border strategies to carbon pricing, accounting challenges and opportunities, and new technologies and governance frameworks shaping carbon markets are a few of the key topics covered in the State and Trends of Carbon Credit Pricing 2022. Carbon accounting is a new term in the accounting field and currently attracting the curiosity of many scholars and academic studies. Countries across the globe becoming more responsible and accountable towards reporting standards. This stands very essential in the accounting of carbon credits as well. The environment is now an essential aspect of financial reporting. Originally, the question was whether or not firms should do it.

Additionally, investigations into the potential effects of rising global temperatures on people's health have been made. UN Envoy Mary Robinson said that human rights must be at the forefront of efforts to combat climate change (COP 21, Russia). It is worth emphasizing that, in order to reach net zero, the phrase " reduce what you can, offset what you can`t" has never been more important. This study is based on reading multiple articles, and research, including several case studies, and emissions reporting for the business. This evidence resembles a mix of different activities taken in the direction of the best plan for achieving net zero in certain ways. It entails removing unavoidable emissions, treatment of carbon credits in the book of accounts, accounting method usage in terms of profitability, and offsetting emissions through the purchase of carbon credits.

The topic has been very popular in the recent past and it is necessary to know the perception of the chartered accountants who are the backbone of the economy. What role does ICAI is playing while understanding the need and framing the accounting standards and policies for the carbon credits and carbon offsets. So, our aim is to know the perception of CAs across Delhi ncr on carbon credit accounting.

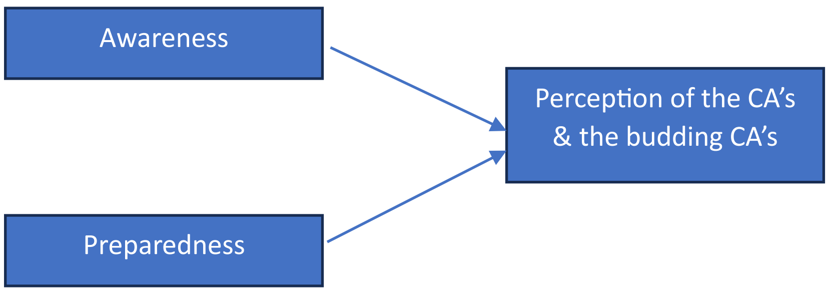
(Satpathy, Das, Mohanty, & Patnaik, 2016) found the importance and awareness of carbon among 450 selected samples of finance, graduate and professional graduates, only 309 were important, indicating that most were unaware of it. (Kamat & Kamat, 2015) conducted primary research (survey) where they found about the awareness, knowledge, regulations of carbon accounting and perception of stakeholders i.e., practicing accountants and educators on the same. The carbon credit with no doubt has an emerging market but still there is an imprecision in accounting treatment and absence of skill-based curriculum in educational institutes for the same. (Bhardwaj, Prakash, Prakash, Sharma, & Sharma, 2022) conducted research using case studies of large corporations related to CO2 discharge in India from 2016 to 2020. The study found that India has a great opportunity to research the impact of carbon credits on the taxation and accounting of the energy sector. The dialogue between and inside the organisation is tracked through six stages by (Kreibich & Hermwille, 2021) who have selected primary data for further analysis of carbon credits and its accounting by group focus method. According to research, Nationally Determined Contribution crediting with the necessary changes is the only approach that enhances and defends the legality of utilising carbon credits for offsetting in the context of carbon neutrality targets while ensuring a high level of environmental integrity. (Sonia & S., 2018) has conducted primary research on Accountants that what challenges they faced regarding the accounting and taxation treatment of carbon credit transactions. They distributed 200 questionnaires to accountants, amongst which only 148 responses were informative and applied some hypothesis testing on it. Outcomes says that Awareness is required to the accountant regarding how to book the CCA as the other income or in sales prospect. For which little changes are required in the accounting standards. (Patnaik, Satpathy, Dr.Litt, Das, & Mohanty, 2016) has done its primary research by taking Direct and close-ended questions asked from 450 students. Where 309 responses were suitable for study and findings said that there is no awareness in the market regarding the CCA. (Paul, 2010-2011) made an effort to give a general overview of carbon trading and credits in India. The purpose was to offer a preview of the potential for carbon trading and credits in the future and current situation as well. (Sedimbi) attempted to comprehend the concept of carbon credit accounting and its treatment in the books of accounts. She used a case study to better understand the efficacy of carbon credit accounting. (Gorain, Malakar, & Chandra, 2021) has highlighted some economic factor beyond agriculture that influence the entry in this sector by using EBCR (Emission from crop reside) study model, Econometric model, correlation as well as regression with the data extracted through secondary method i.e., from articles, journals, newspaper, reports etc. They found that one rupee increases in price of gold leads to decrease carbon emission price by 0.21 rupee. Similarly, one rupee increases in price of power leads to 0.46 rupee decrease carbon emission price. One percent increase in the index of industrial production (IIP) leads to decrease carbon emission price by 0.46 rupee. (Kumar, Mittal, & Firoz, 2020) has taken Secondary data, taken from 44 organisation which are working for environmental conservation and provided their contribution in that area. Their outcomes demonstrate that bigger firms have superior ROE over smaller firms. (Kotkar & Bhadani, December 2016) Using secondary information as an information source, attempt to recognize that HRM can make a contribution to sustainable environmental development, following the instance of General Motors, in which HRM practices are taken into consideration as an independent variable and carbon footprint as an dependent variable. (Chonde, Sep 2016) found out that carbon trading is in its nascent stage in terms of development, which requires time and effort to be groomed as one of the matured markets which has a great potential in the upcoming future. Carbon credits are issued to companies that reduce their greenhouse gas credits then sold to companies who cannot fulfilled the protocol norms, it helps the developing start with clean technologies; since these machines are expensive therefore funds are provided for countries in the form of carbon credits. (Samaduzzaman, Zaman, & Irfan, 2013)have discussed about major pollutions across cities in India, Bangladesh and Australia. According to their study country's GDP is now linked to reduction in emissions and enterprises have taken initiatives in carbon accounting. (Das, Mohanty, & D.Litt., 2016) through their paper made a study on carbon credit revenue of select companies as published in the annual report. The sampling units were from various sectors like chemical, power, mining, sugar, paper, steel and cement. They concluded that trend of carbon credit revenue declined in Indian Corporate Sector. (Kamat, Manasvi ; kamat, Manoj;, 2015) conducted a survey on practicing accountants and educators to know their awareness on Carbon accounting. They emphasized that although carbon credit is an emerging market, still there remains a lot of ambiguity in accounting treatment and therefore.

Research Methodology:

This research was conducted to know the perception of Chartered Accountants as well as budding Chartered Accountants on Carbon credit and its accounting and had use the primary method (Non-Probability Method) of research using questionnaire method for collecting the responses through google form. A 110-person sample size has been used for the survey. The sample size has been drawn from the Chartered Accountants as well as budding Chartered accountants present in the Delhi NCR between the dates of March 9 and March 20, 2023. We asked questions based on how CA see the accounting for carbon credits, determining the level of awareness and level of preparation that CAs have. We had further investigated it after gathering data from CAs in the form of a google form. After receiving the responses, we used the data and analyzed it using multiple regression (to check the relationship between dependent and independent variables), z-square test (to check if the hypothesis is significant or not) and Anova test. (To measure dispersion, i.e. the statistical significance of the average values of two or more independent groups was analyzed). We used SPSS software to analyze the data.

The study employed a non-probability sampling technique, specifically a convenience sampling method. This method was used to collect data from chartered accountants and budding chartered accountants. The study targeted chartered accountants and budding chartered accountants of Delhi-NCR. The survey was administered using an online platform, and data was collected over a period of 12 days i.e. from 9th March 20203 to 20th March 2023.

Research Model:



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The above independent and dependent variable will showcase the positive relationship amongst themselves as if independent variable is negative, it will form negative perception and vice versa. Talking about the awareness of carbon credits and carbon accounting if chartered accountant is aware aboutthe same then it will lead to positive generation of CAs perception. Preparedness is how much they are prepared to regulate and handle the accounting as well as the aspect ofprofitability in the books of account of carbon credits and carbon offsets.

H1: There is a positive relationship between awareness regarding carbon credit accounting and perceptionof chartered accountants

H2: There is a positive relationship between preparedness regarding carbon credit accounting and perception of chartered accountants

Data Analysis:

Correlation

	Awareness (I)	Preparedness (I)	Perception (D)
Awareness (I)	1		
Preparedness (I)	0.71	1.00	
Perception (D)	0.41	0.48	1

The correlation should lie between 0 & 1. Here, the correlation coefficient between Awareness and Preparedness is 0.71. So, these two variables are strongly correlated. Similarly, the correlation coefficient between Awareness and Perception is 0.41. These two variables are weekly correlated. The correlation coefficient between Preparedness and Perception is 0.48 which shows the two variables are weekly correlated. Hence all the variables were found to be correlated to each other. Further, correlations were found to be significant at 0.01 level. These results were as per the expectation because the model was prepared by looking at the literature. Moreover, perception is influenced by the awareness level of a person as well as his preparedness to handle situations. Hair et al. (1998) suggested the use of multiple regression to test the relationship between dependent variable and multiple independent variables. Summated scales for independent variables and dependent variables were calculated and Multiple regression was carried out.

REGRESSION:

Regression Statistics	
Multiple R	0.49
R Square	0.24
Adjusted R Square	0.23
Standard Error	1.00
Observations	110

23 % of the variance in dependent variable is caused by the independent variables which are considered in the study. Anova table showed that the modal proposed in this paper is found to be significant because 0.00<0.05.

ANOVA

	df	SS	MS	F	Significance F
Regression	2.00	34.30	17.15	17.13	0.00
Residual	107.00	107.12	1.00		
Total	109.00	141.42			

Further, regression also revealed that preparedness was found to influence the perception of respondents.

Coefficients

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	1.45	0.36	3.99	0.00	0.73	2.18
AW	0.17	0.15	1.16	0.25	-0.12	0.46
PR	0.47	0.15	3.24	0.00	0.18	0.76

Conclusion:

Carbon credits are treated as public subsidies, taking into account R&D costs, CDM project implementation etc. Although several CDM projects are under way in India, but legal, regulatory, accounting and tax issues remain much less clear. One the most important factor is consistency and the methods must be used so that the reported emissions are obtained compare in time. The basic need for adoption of these accounting practices is transparent and consistent and leave a clear review in all respects. According to this study, India has a fantastic opportunity to study the impact of carbon credits, but the country's-chartered accountants lack awareness as well as preparedness i.e. knowledge of taxation and accounting systems regarding carbon credits and its accounting. This research shows that the chartered accountants and the budding chartered accountants are not prepared for the carbon credit accounting system. So, there is a need to spread awareness for carbon offsetting, adequate and unambiguous financial accounting standards. The lack of preparedness of chartered accountants in financial and tax accounting rules is the major impediment (Das & Satpathy, 2016). To inform the chartered accountants involved, the level of awareness should be boosted using popular platforms like social media, electronic media, webinar and seminars should be conducted to make the chartered accountants aware and prepare for the accounting purpose of carbon credits accounting at the same time. This would contribute to the creation of a clean, hazardous-free environment, which is one of the top priorities of the present Indian government. Accounting is a breakthrough in the effort to lower greenhouse gas emissions and will serve as a model for other industries.

References

Bhardwaj, M., Prakash, N., Prakash, A., Sharma, S., & Sharma, P. (2022). Study the 'Impact of Carbon Credit on Accounting and Taxation of Companies' Profitability - An Indian perspective.

Chonde, S. G. (Sep 2016). USE OF CARBON CREDITS/TRADING FOR ENVIRONMENTAL PROTECTION: A REVIEW. International Education & Research Journal [IERJ] , 2(9), 19-21.

Das, C. b., & Satpathy, I. (2016). CARBON CREDIT ACCOUNTING - A STUDY ON FINANCE STUDENTS AND PROFESSIONALS IN ODISHA. International Journal of Research in Finance and Marketing (IJRFM).

Das, C., Mohanty, S., & D.Litt., I. S. (2016, september). CARBON CREDIT ACCOUNTING - A STUDY ON FINANCE STUDENTS AND PROFESSIONALS IN ODISHA. International Journal of Research in Finance and Marketing (IJRFM). Retrieved from https://www.researchgate.net/publication/309159516_CARBON_CREDIT_ACCOUNTING_-_A_STUDY_ON_FINANCE_STUDENTS_AND_PROFESSIONALS_IN_ODISHA

Gorain, S., Malakar, A., & Chandra, S. (2021). An Analysis of Carbon Market and Carbon Credits in India.

Hair, J. F. et al. (1998). Multivariate Data Analysis, Prentice-Hall International, London.

Kamat, M. S., & Kamat, M. M. (2015). An Evaluation of the perceptions in carbon accounting and reporting in India. Researchers World - Journal of Arts, Science & Commerce, 27-39.

Kamat, Manasvi ; kamat, Manoj;. (2015, April). AN EVALUATION OF THE PERCEPTIONS IN CARBON ACCOUNTING AND REPORTING IN INDIA INTRODUCTION: PROBLEM IDENTIFICATION AND DEVELOPMENT. Journal of Arts, Science & Commerce. Retrieved from https://www.researchgate.net/publication/316014221_AN_EVALUATION_OF_THE_PERCEPTIONS_IN_CARBON_ACCOUNTING_AND_REPORTING_IN_INDIA_INTRODUCTION_PROBLEM_IDENTIFICATION_AND_DEVELOPMENT

Kaur, B., Sansanwal, A., Sahu, A., Sharma, A., & Sharma, S. (2023). Predictors of Youth's intention towards investment in Mutual funds. *Journal of Informatics Education and Research*, *3*(2).

Kotkar, S. N., & Bhadani, R. (December 2016). Carbon Credits - Most Value and Profit-Added Advantage to Business. International Journal of Science and Research (IJSR) , 5(12), 519-521.

Kreibich , N., & Hermwille, L. (2021). Caught in between: credibility and feasibility of the voluntary carbon market post 2020.

Kumar, P., Mittal, A., & Firoz, M. (2020). Carbon Credit Issuance:. SCMS Journal of Indian Management, 111-119.

Patnaik, D., Satpathy, D., Dr.Litt, Das, D., & Mohanty, M. (2016). CARBON CREDIT ACCOUNTING - A STUDY ON FINANCE STUDENTS AND PROFESSIONALS IN ODISHA.

Paul, A. (2010-2011). Carbon Credit and Carbon Trading in India: An overview. Business Studies, XXXI & XXXII.

Samaduzzaman, M., Zaman, F., & Irfan, M. S. (2013, Feb). Carbon Accounting, Green Building and Sustainability: Effects on Gross National Product (GDP). IOSR Journal of Business and Management (IOSR-JBM). Retrieved from https://www.researchgate.net/publication/271249619_Carbon_Accounting_Green_Building_and_Sustainability_Effects_on_Gross_National_Product_GDP/link/5c64ecbda6fdccb608c120b2/download

Satpathy, I., Das, C., Mohanty, S., & Patnaik, B. (2016). Carbon Credit Accounting - A study on finance students and professionals in Odisha. International Journal of Research in Finance and Marketing (IJRFM), 35-46.

Sedimbi, A. (n.d.). Carbon Credit Accounting - A Study. IOSR Journal of Business and Management

(IOSR-JBM) , 6-11.

Sharma, S., Khandelwal, S., & Som, B. K. (2023). A Study on Impact of Big Five Personality on Investment Decisions of Mutual Fund Investors: Mediation by Risk. *Journal of Informatics Education and Research*, *3*(2).

Sonia, M., & S., D. (2018). Accounting and Taxation Issues of Carbon Credit Transactions.