
CARBON CREDIT ACCOUNTING - A STUDY ON FINANCE STUDENTS AND PROFESSIONALS IN ODISHA

Dr. B.C.M.Patnaik¹,

Associate Professor

School of Management, KIIT University, Bhubaneswar, Odisha

Dr. Ipseeta Satpathy, D.Litt.²,

Professor

School of Management ,KIIT University, Bhubaneswar, Odisha

Dr Chandrabhanu Das³,

Senior Executive-Audit Department , KIIT University, Bhubaneswar, Odisha

Mr Sourav Mohanty⁴

Research Scholar

School Of Management , KIIT University, Bhubaneswar, Odisha

Abstract:

Carbon credit accounting is a statutory allowance on the incumbent for reducing the emission of one tonne of carbon dioxide. The very word 'credit' is attached and given to those countries or groups, which have lowered their green house gases below their emission quota. A generic concept is indeed carbon credit accounting where pollution level is controlled. Awareness about environment pollution is on rise and along with it is significant decrease in Global warming levels by using mechanism like Kyoto Protocols, CER (Certified Emission Reduction) .The article highlights about the importance and awareness of carbon credit accounting among selected finance graduates, professional graduates and postgraduates; where descriptive research along with convenience sampling is used. A sample size of 450 was selected but ultimately 309 responses were received for the study. According to the result of the findings, it is shown that majority are not aware about carbon credit accounting.

Keywords: carbon credit accounting, cer (certified emission reduction), awareness

Background of the study

Global warming has been a recent concern and efforts are being made to protect the environment by different regulations and laws by countries all over the world. One of the major ways to reduce global emissions was discovered by means of emission reduction of green house gases and carbon emissions in particular from different Industries. Regulatory mechanism was developed in form of Kyoto protocol and to incentivize the industries for reducing emissions a new term known as carbon credits emerged. CERs (Certified Emission Reduction) certificates are issued to entities for reducing the level of carbon in the atmosphere and these credits can be tradable in the stock exchange. There are also options for making it saleable through purchase agreements or by auction.

The developed nations already in the peak of Industrialization are ready to purchase these credits from developing nations who are in the phase of Industrialization. Thus this opens up an entire new market for developing nations who can reduce the pollution and gain incentives for it. As with all monetary and material transactions, this transaction also came under the purview of accounting treatment a new subject of carbon credit accounting originated. Principles of accounting for recognition, measurement and disclosure of CERs were developed. To address the issue of emission accounting International Accounting Standards Board (IASB) and Financial Accounting Standards Board (FASB) are involved in a joint project since 2007. The Institute of Chartered Accountants of India (ICAI) from 2009 has made a draft containing policies and guidelines for carbon credit accounting. It deals with the CERs generated through CDM (Clean Development Mechanism) for recognition, measurement and disclosure. According to nature of transactions as dealt by business entities the CERs are treated as Intangible Assets under AS-26 or Inventories under AS-2. The paper attempts to gauge the general awareness of finance professionals in Odisha towards carbon accounting genesis and procedures.

According to exposure draft of ICAI, the CERs, which are in the process of approval, are recognized under AS-29 as contingent assets and are booked as Intangible assets after approval. Where CERs are held by the enterprise as available for sale they are to be treated as Inventory under AS-2. Accordingly taxation issues come up as whether to be taxable under Capital Gains or under Income from Business and Profession.

Review Of Literature

Sanjay K (2006) has highlighted the ambiguities in accounting treatment of carbon credit. He suggested the treatment to be income from other sources.

Samaduzzaman, Zaman and 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.

Bhanawat and Vardia (2015) 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 and Kamat (2015) conducted a survey on practicing accountants and educators to know their awareness on Carbon accounting. They emphasized that although carbon credit is a emerging market, still there remains a lot of ambiguity in accounting treatment and therefore

absence of skill based curriculum in Educational Institutions.

Significance of the Study

The study is basically done to reduce the Global Warming level and at the same time environmental pollution takes a downward toll; thereby benefitting all the commuters and stake holders.

Objectives of the Study

The objectives of the study are listed below:

1. To know the importance of carbon credit accounting.
2. To find out the level of awareness among the finance students and professionals in the emerging field of carbon credit accounting.

Scope of the Study:

The study caters to in and around the capital region of Odisha (Bhubaneswar), which consists of selected finance students and professionals who are from commerce, management and finance background respectively.

Research Methodology

Descriptive Research with convenience sampling has been used for the survey. Data collection is primary and questionnaire method is adopted to conduct the survey. The questionnaires are mostly direct and close-ended. The respondents are mostly graduate and post graduate students in commerce and management and finance professionals who are employed in various industries or self employed and practicing CAs. The sample size selected was 450 but only 309 responses were found suitable for study. The questionnaire was prepared to gauge the level of awareness among various finance professionals in the field of carbon credit accounting. The survey respondents are from the field of accounting and finance domain in the state of Odisha. Both male and female respondents were taken in the sample for study.

Table 1: Respondent Composition

	Graduates	Post Graduates	Professionals	Total
No. of Male Respondents	31	97	71	199
No. of Female Respondents	14	68	28	110
Course/Profession	B.Com/BBA	M.Com/MBA/MFC	CA/CMA/CS/Working	

As per the table total number of respondents is 309. Out of total respondents questioned 35.5 % (110 out of 309) are female students.

Table-2: Analysis of Data

Attributes	Aggregate Score					
	Graduates		Post graduates		Professionals	
	Male	Female	Male	Female	Male	Female
Do you have the awareness about carbon credit and its accounting?	46	24	139	110	162	38
Do you have any knowledge about accounting standards issued by ICAI for carbon credit?	50	25	180	156	103	52
Do you have any awareness about CDM mechanism that reduces emissions?	61	35	185	78	104	55
Do you have any idea about issuing authority of CER (Certified Emission Reduction)?	51	18	153	96	99	58
Are you aware of accounting and taxation treatment of CER (Certified Emission Reduction)?	67	33	165	95	99	76
Do you have any information about Indian companies who are taking initiatives to reduce their emissions?	57	17	104	108	87	49
Do you have any awareness about importance of carbon accounting with regard to profitability and brand value?	58	14	121	165	195	31
Do you have knowledge about compliance requirement for carbon credit accounting to fight climate changes?	49	22	169	101	85	68
Do you have any information about usage of carbon credit accounting by companies without any constraints?	55	25	230	83	71	48
Are you aware that a carbon credit account plays an important role in reducing environment pollution?	46	23	112	131	80	32
Do you have any perception about carbon credit accounting can play an important role in growth of the company?	37	19	132	91	126	74
Total score	577	255	1690	1214	1211	581
Ideal score	1705	770	5335	3740	3905	1540
Least score	341	154	1067	748	781	308
% of total score to ideal score	34	33	32	32	31	38
No of respondents	31	14	97	68	71	28

Source- Annexure- 1, 2, 3,4, 5 and 6

Respondents’ perception with regard to the various attributes of carbon credit accounting:

To measure the perception level of the participants with regard to carbon credit accounting the various attributes were identified and categorized as awareness of carbon credit and its

accounting, knowledge about accounting standards issued by ICAI for carbon credit, awareness about CDM mechanism that reduces emissions, idea about issuing authority of CER (Certified Emission Reduction), awareness of accounting and taxation treatment of CER (Certified Emission Reduction), information about Indian companies who are taking initiatives to reduce their emissions, importance of carbon accounting with regard to profitability and brand value, compliance requirement for carbon credit accounting to fight climate changes, usage of carbon credit accounting by companies without constraints, importance of carbon credit account in reducing environment pollution and perception about carbon credit accounting playing a significant role in growth of the company.

In this regard we have been assigned as 5, 4, 3, 2 and 1 for the responses of the respondents- Fully Aware, Aware, Partially Aware, Neutral and Not Aware. Final scores for each feature are calculated by multiplying the number of responses by the weights of the corresponding responses.

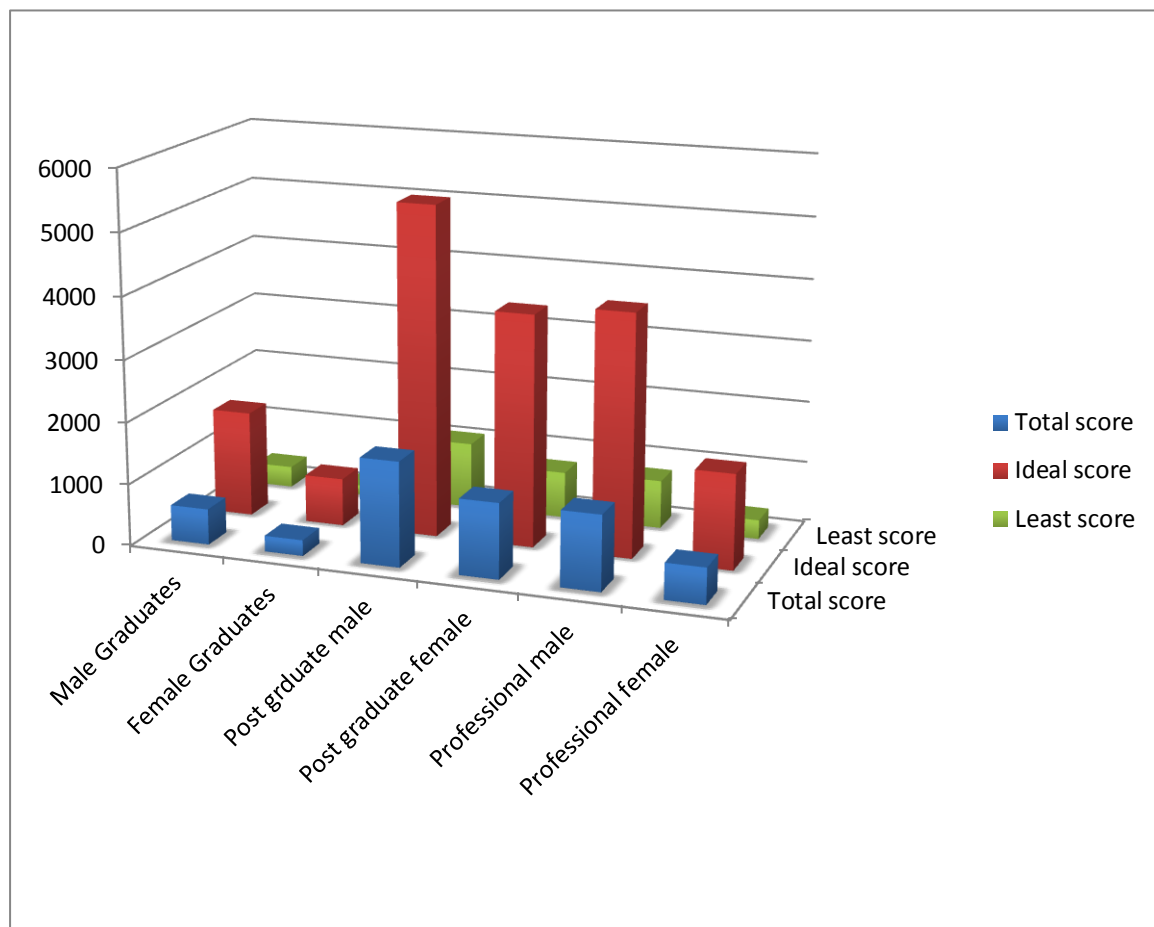
Calculation of respondents' perception: Ideal and Least scores

Ideal scores are calculated by multiplying the number of respondents in each category with (5) and product with total number of attributes. Least scores calculated by multiplying the number of respondents each category with (1) and the product with number of attributes in questionnaires.

Table-2: Computation of ideal score and least scores for the respondents

Category	Equation	Ideal score	Equation	Least score
Male Graduates	$11*5*31$	1705	$11*1*31$	341
Female Graduates	$11*5*14$	770	$11*1*14$	154
Post Graduate Males	$11*5*97$	5335	$11*1*97$	1067
Post Graduate Females	$11*5*68$	3740	$11*1*68$	748
Male Professionals	$11*5*71$	3905	$11*1*71$	781
Female Professionals	$11*5*28$	1540	$11*1*28$	308

Source: Annexure-1, 2,3,4,5 and 6



Findings of the study:

Findings of the study are as under. The table-2 shows that in the present case the total actual scores of male and female professionals for carbon credit accounting are 577,255,1690,1214,1211 and 581, as against the ideal score of 1705, 770, 5335, 3740, 3905 and 1540. The percentages of actual score are 34, 33.13, 32, 32.5,31 and 38 respectively. In no case the actual score touching the least score. The perception level is more in case of female professionals, followed by male graduates about carbon credit accounting. This shows that the perception is not so favorable by female graduates as compared to male postgraduates. This shows that majority are not aware of the existing carbon credit accounting.

Concluding note:

Awareness level has to be increased through common platforms like social and e-media so that commuters must know about it. This will help in setting up a clean, pollution and hazardous free environment which is utmost priority for the present ruling government in India. Moreover innovative programs like Swachh Bharat Abhiyan should be highlighted more to make the

respondents aware of it and not many functionalities of it has seen the light of the day.

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Annexure-1: Perception of male graduates- (31)

Serial No	Attributes	FA	A	PA	N	NA	Total Score
		5	4	3	2	1	
1.	Do you have awareness about carbon credit and its accounting?	1	0	2	7	21	46
2.	Do you have any knowledge about accounting standards issued by ICAI for carbon credit?	1	1	1	10	18	50
3.	Do you have any awareness about CDM mechanism that reduces emissions?	2	1	6	7	15	61
4.	Do you have any idea about issuing authority of CER (Certified Emission Reduction)?	0	2	4	6	19	51
5.	Are you aware of accounting and taxation treatment of CER (Certified Emission Reduction)?	1	3	8	7	12	67
6.	Do you have any information about Indian companies who are taking initiatives to	0	0	8	10	13	57

	reduce their emissions?						
7.	Do you have any awareness about importance of carbon accounting with regard to profitability and brand value?	3	0	3	9	16	58
8	Do you have knowledge about compliance requirement for carbon credit accounting to fight climate changes?	0	0	4	10	17	49
9.	Do you have any information about usage of carbon credit accounting by companies without any constraints?	1	3	2	7	18	55
10.	Are you aware that a carbon credit account plays an important role in reducing environment pollution?	1	1	1	6	22	46
11.	Do you have any perception that carbon credit accounting can play an important role in growth of the company?	0	0	0	6	25	37

Source- Primary Data, Note- FA- Fully aware, A- Aware, PA- Partially aware, N- Neutral, NA- Not aware

Annexure-2: Perception of female graduates- (14)

Serial No	Attributes	FA	A	PA	N	NA	Total Score
		5	4	3	2	1	
1.	Do you have awareness about carbon credit and its accounting?	0	1	3	1	9	24
2.	Do you have any knowledge about accounting standards issued by ICAI for carbon credit?	1	0	2	3	8	25
3.	Do you have any awareness about CDM mechanism that reduces emissions?	2	2	3	1	6	35
4.	Do you have any idea about issuing authority of CER (Certified Emission Reduction)?	0	0	0	4	10	18
5.	Are you aware of accounting and taxation treatment of CER (Certified Emission Reduction)?	1	2	3	3	5	33
6.	Do you have any information about Indian companies who are taking initiatives to reduce their emissions?	0	0	1	1	12	17
7.	Do you have any awareness about importance of carbon accounting with regard to profitability and brand value?	0	0	0	0	14	14
8	Do you have knowledge about compliance requirement for carbon credit accounting to	1	1	0	1	11	22

	fight climate changes?						
9.	Do you have any information about usage of carbon credit accounting by companies without any constraints?	1	0	1	5	7	25
10.	Are you aware that a carbon credit account plays an important role in reducing environment pollution?	1	1	0	2	10	23
11.	Do you have any perception that carbon credit accounting can play an important role in growth of the company?	0	0	0	5	9	19

Source- Primary Data , Note- FA- Fully aware, A- Aware, PA- Partially aware, N- Neutral, NA- Not aware

Annexure-3: Perception of male post graduates- (97)

Serial No	Attributes	FA	A	PA	N	NA	Total Score
		5	4	3	2	1	
1.	Do you have awareness about carbon credit and its accounting?	0	0	6	30	61	139
2.	Do you have any knowledge about accounting standards issued by ICAI for carbon credit?	8	4	4	31	50	180
3.	Do you have any awareness about CDM mechanism that reduces emissions?	2	10	10	30	45	185
4.	Do you have any idea about issuing authority of CER (Certified Emission Reduction)?	5	2	10	10	70	153
5.	Are you aware of accounting and taxation treatment of CER (Certified Emission Reduction)?	7	5	5	15	65	165
6.	Do you have any information about Indian companies who are taking initiatives to reduce their emissions?	0	0	0	7	90	104
7.	Do you have any awareness about importance of carbon accounting with regard to profitability and brand value?	0	0	7	10	80	121
8.	Do you have knowledge about compliance requirement for carbon credit accounting to fight climate changes?	1	6	10	30	50	169
9.	Do you have any information about usage of carbon credit accounting by companies without any constraints?	12	15	10	20	40	230
10.	Are you aware that a carbon credit account plays an important role in reducing	0	1	1	10	85	112

	environment pollution?						
11.	Do you have any perception that carbon credit accounting can play an important role in growth of the company?	0	5	5	10	77	132

Source- Primary Data , Note- FA- Fully aware, A- Aware, PA- Partially aware, N- Neutral, NA- Not aware

Annexure-4: Perception of female post graduates- (68)

Serial No	Attributes	FA	A	PA	N	NA	Total Score
		5	4	3	2	1	
1.	Do you have awareness about carbon credit and its accounting?	1	2	7	18	40	110
2.	Do you have any knowledge about accounting standards issued by ICAI for carbon credit?	6	10	12	10	30	156
3.	Do you have any awareness about CDM mechanism that reduces emissions?	0	0	2	6	60	78
4.	Do you have any idea about issuing authority of CER (Certified Emission Reduction)?	0	2	6	10	50	96
5.	Are you aware of accounting and taxation treatment of CER (Certified Emission Reduction)?	3	0	5	5	55	95
6.	Do you have any information about Indian companies who are taking initiatives to reduce their emissions?	1	2	10	10	45	108
7.	Do you have any awareness about importance of carbon accounting with regard to profitability and brand value?	8	10	10	15	25	165
8.	Do you have knowledge about compliance requirement for carbon credit accounting to fight climate changes?	2	0	8	9	49	101
9.	Do you have any information about usage of carbon credit accounting by companies without any constraints?	0	3	3	0	62	83
10.	Are you aware that a carbon credit account plays an important role in reducing environment pollution?	3	9	7	10	39	131
11.	Do you have any perception that carbon credit accounting can play an important role in growth of the company?	1	3	2	6	56	91

Source- Primary Data , Note- FA- Fully aware, A- Aware, PA- Partially aware, N- Neutral, NA- Not aware

Annexure-5: Perception of male professional- (71)

Serial No	Attributes	FA	A	PA	N	NA	Total Score
		5	4	3	2	1	
1.	Do you have awareness about carbon credit and its accounting?	8	8	10	15	30	162
2.	Do you have any knowledge about accounting standards issued by ICAI for carbon credit?	0	0	1	30	40	103
3.	Do you have any awareness about CDM mechanism that reduces emissions?	0	1	10	10	50	104
4.	Do you have any idea about issuing authority of CER (Certified Emission Reduction)?	3	0	3	10	55	99
5.	Are you aware of accounting and taxation treatment of CER (Certified Emission Reduction)?	0	1	0	25	45	99
6.	Do you have any information about Indian companies who are taking initiatives to reduce their emissions?	2	1	2	1	65	87
7.	Do you have any awareness about importance of carbon accounting with regard to profitability and brand value?	11	15	10	15	20	195
8.	Do you have knowledge about compliance requirement for carbon credit accounting to fight climate changes?	0	1	1	9	60	85
9.	Do you have any information about usage of carbon credit accounting by companies without any constraints?	0	0	0	0	71	71
10.	Are you aware that a carbon credit account plays an important role in reducing environment pollution?	0	0	3	3	65	80
11.	Do you have any perception that carbon credit accounting can play an important role in growth of the company?	4	3	7	16	41	126

Source- Primary Data Note- FA- Fully aware, A- Aware, PA- Partially aware, N- Neutral, NA- Not aware

Annexure-6: Perception of female professionals- (28)

Serial No	Attributes	FA	A	PA	N	NA	Total Score
		5	4	3	2	1	
1.	Do you have awareness about carbon credit and its accounting?	0	0	0	10	18	38
2.	Do you have any knowledge about accounting standards issued by ICAI for carbon credit?	0	8	0	0	20	52
3.	Do you have any awareness about CDM mechanism that reduces emissions?	3	1	3	6	15	55
4.	Do you have any idea about issuing authority of CER (Certified Emission Reduction)?	1	0	9	8	10	58
5.	Are you aware of accounting and taxation treatment of CER (Certified Emission Reduction)?	4	6	5	4	9	76
6.	Do you have any information about Indian companies who are taking initiatives to reduce their emissions?	3	0	0	9	16	49
7.	Do you have any awareness about importance of carbon accounting with regard to profitability and brand value?	0	0	0	3	25	31
8.	Do you have knowledge about compliance requirement for have carbon credit accounting to fight climate changes?	5	4	3	2	14	68
9.	Do you have any information about usage of carbon credit accounting by companies without any constraints?	3	2	1	0	22	48
10.	Are you aware that a carbon credit account plays an important role in reducing environment pollution?	1	0	0	0	27	32
11.	Do you have any perception that carbon credit can accounting play an important role in growth of the company?	4	5	6	3	10	7

Source- Primary Data , **Note-** FA- Fully aware, A- Aware, PA- Partially aware, N- Neutral, NA- Not aware