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Factors affecting the Incidence of Carbon Tax: A Systematic Literature Review

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Abstract
Systematic literature review (SLR) is an organized and thorough strategy of assessing, evaluating, and synthesizing previous research on a particular topic or research. It is frequently used in research to present a thorough summary of the data that is currently available on a particular topic, spot patterns and gaps in the literature, and lay out a clear plan for further study.
This research paper studies about the established literature related to the topic of factors that affects to the incidence of Carbon Tax as a Carbon Emission Reduction Policy by the Governing authorities. The study is conducted by using the database of Dimension.ai. In order to get the database keywords have been used were 'Factors' and 'Carbon Tax'.
This research paper has uncovered various factors influencing the incidence of carbon tax like cost, technology, tax structure and many more.

Keywords: Carbon Tax, Factors, Systematic Literature Review.

Introduction

A carbon tax is a monetary fee imposed on corporations, enterprises, or people according to the quantity of carbon dioxide (CO_2) emissions they generate. Its goal is to provide incentives for lowering greenhouse gas emissions, especially those caused by burning fossil fuels like coal, oil, and natural gas. Rationale behind the incidence of carbon tax is to increase the cost of polluting activities in order to promote the use of cleaner, more sustainable alternatives.
Internalizing the external costs of carbon emissions is the primary objective of a carbon price. The negative consequences of climate change, such as increasing global temperatures, harsh weather, melting ice caps, and rising sea levels, are among these external costs. Although people and businesses profit from the energy they generate or use, the price of fossil fuels does not account for the costs of the environmental harm their actions cause.
The government can provide a financial incentive for companies to lessen their carbon footprint by imposing a tax on carbon emissions. Companies should ideally be financially motivated to invest in cleaner technologies, embrace energy-efficient practices, or transition to renewable energy sources if taxes are higher.

Methodology

This study is based on the method of systematic review which involves systematic examination of selected database by the use of strategies like keywords and wordings in title of the literature. This method allows integration of all the quantitative data available from the different studies under the database.

Identification of papers- For the purpose of this study papers by searching on electronic database of dimensions.ai with use of keywords like 'Factors' AND 'Carbon Tax' in different categories. All the papers with English literature were only included.

Selection criteria- Research papers were included on the basis of the judgment by the researchers where the judgment was made on the basis of relevance to the topic of the current study.

Information extraction- Information from the literature was extracted and coded within the categories like Objectives, research design, population, sampling design, sample size, demographic characteristics, response rate, outcome of the study, and summary of results.

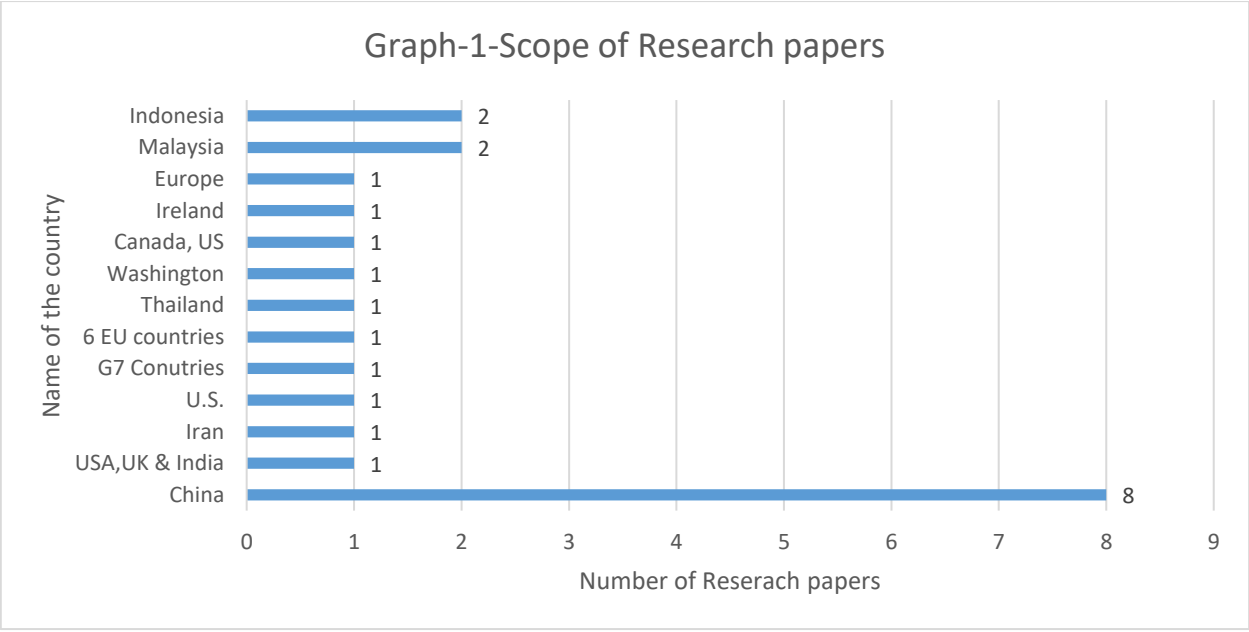
Further selection criteria- Literature having characteristics like independently designed sample, response rate of less than 60%, un-standardized measures for study, were not included for the further study.

Results- After filtering the database of larger population which consist of 1091 research papers, 500 were filtered. After that further papers were filtered using scanning of title of the papers. As a result of which 81 papers were short listed. Further these papers were filtered by the study of abstract and full papers and as a final scan 22 papers were selected for the detailed review.

Discussion

The systematic Literature Review covers the large number of studies and tries to summarize those studies that use effective methods. The present study tries to throw the light to all those factors which plays the role towards the incidence of Carbon Tax.

The study tries to cover all the regional scope which are relevant to the topic selected. This geographical scope of research is shown in the following Chart-1.



From the above table, it can be seen that total 22 research works have various geographical scope for their research. Maximum research work is established in the region of china with the count of 8. After china, Europe and USA have taken that lead.
The summary of the findings has been presented in the following Table-1.

Research Study	Authors	Publication year	Country	Factors-outcome
Impact of urban land use tax on carbon emission efficiency of urban construction land—— Analysis based on panel data of 30 provinces in China	Ren, Sibo	2024	China	Population Urbanization, Industrial Structure, and Energy-Saving Technology Level
Factors Influencing Intergovernmental Cooperation on Emission Reduction in Chengdu-Chongqing Urban Agglomeration: An Evolutionary Game Theory Perspective	Liu, Jingyu; Meng, Weidong; Huang, Bo; Li, Yuyu	2022	China	Government Strategy and Willingness and Size of Carbon Tax
Limiting support for environmental policies: Unfairness is a more critical barrier than cost and ineffectiveness	Bergquist, Magnus	2024	USA, UK & India	Costs, Effectiveness, and Fairness
Closed-loop supply network of electrical and electronic equipment under carbon tax policy	Harijani, Ali Mirdar; Mansour, Saeed; Fatemi, Shirin	2023	Iran	Cost
Choosing the right policy: Factors influencing the preferences of consumption-side personal carbon reduction policies	Lin, Boqiang; Yang, Mengqi	2022	China	Individual Levels of Affluence, Self-Motivation, and Social Norms, Access to Low-Carbon Information, and Social Equity
Spatiotemporal distribution of green-certified buildings and the influencing factors: A study of U.S.	Chen, Siwei; Gou, Zhonghua	2023	U.S.	Total Population, Income Inequality, Regional Price Parity, and Average Annual Temperature

Green growth and low carbon emission in G7 countries: How critical the network of environmental taxes, renewable energy and human capital is?	Hao, Lin-Na; Umar, Muhammad; Khan, Zeeshan; Ali, Wajid	2020	G7 Conutry	Human Capital Index, Environment-related Taxes and Development of Environment-related Technologies
The impact of government's carbon tax policy on enterprise's carbon emission	Zhan, Guoxing; Zhou, Jianpeng; Liu, Peng; Zhang, Hua	2011	China	Substitution Effect, Income Effect and Interaction Effect of Carbon Tax Programs, Cost of Carbon Taxation, Carbon Tax Rates and Tax Subsidies
How to improve the performance of carbon tax in China?	Zhang, Zhe; Zhang, Aizhen; Wang, Daoping; Li, Aijun; Song, Huixuan	2017	China	Cost
The many faces of carbon tax regressivity—Why carbon taxes are not always regressive for the same reason	Linden, Jules; O'Donoghue, Cathal; Sologon, Denisa M.	2024	6 EU countries	Income Households Spend, Carbon Intensity of Consumption, Technology
Carbon tax incidence on household consumption: Heterogeneity across socio-economic factors in Thailand	Saelim, Supawan	2019	Thailand	Income, Socio-economic Factors, such as Geographic Region, Labor Market Status, Household Structure and Education
Efforts to tax carbon in Washington State	Karceski, Steven M.	2022	Washington	Citizen Demand, Energy Interests, and Tax Structure
Exploring the Attitudes of CFOs Towards Carbon Tax Policy	Okafor, Oliver Nnamdi; Opara, Michael; Maier, Cynthia; Kalu, Kenneth	2022	Canada, US	Four Value Factors (Altruism, Egoism, Traditionalism and Self-transcendence) and Two Belief Factors (Environmentalism and Anti-regulation) as the attitudinal orientations

				of CFOs (Chief Financial Officers)
What Factors Drive Inequalities in Carbon Tax Incidence? Decomposing Socioeconomic Inequalities in Carbon Tax Incidence in Ireland	Farrell, Niall	2017	Ireland	Income
Why hate carbon taxes? Machine learning evidence on the roles of personal responsibility, trust, revenue recycling, and other factors across 23 European countries	Levi, Sebastian	2021	Europe	Climate Change Belief and Political Trust
Rethinking the equity and efficiency of carbon tax: A novel perspective	Jia, Zhijie; Lin, Boqiang; Liu, Xiying	2023	China	revenue, Carbon footprint
Game Analysis Between Government and Enterprises Considering Consumers' Low Carbon Awareness Under the Carbon Tax Regulation	Wu, Mengjiao; Hua, Guowei; Xia, Liangjie	2018	China	Consumer's Carbon Awareness, Entreprise Competition, Government Decisions, Corporate Profit and Social Welfare
Trust in Government and Its Determinants: An Empirical Study of Public Acceptability for Carbon Tax in Malaysia	Muhammad, Izlawanie; Hasnu, Norfakhirah Nazihah Mohd; Ibrahim, Mohd Adha; Hamid, Suhaila Abdul; Hanefah, Mustafa Mohd	2022	Malaysia	Trust in Government-Three main features of good governance—accountability, integrity, and competence—were examined as the predictors of Trust in Government
Residents' Willingness to Pay for a Carbon Tax	Goh, Ie Zheng; Matthew, Nitanan Koshy	2021	Malaysia	Willingness to pay Tax influnced by Gender, Age, Income, Education, Number of Households, and Marital Status

Influencing factors and paths of public support for carbon emission reduction policies—An integration model	Yu, Jialu	2024	China	Personal Perception Factors like -Self-Efficacy, Personal Norms, Bio-Value; Policy Characteristics factors like-Policy Fairness & Effectiveness; Social Norm Perception
The Urgency Of Carbon Accounting Based on Willingness to Pay Carbon Tax	Mangoting, Yenni; Louisa, Patricia; Yonatan, Vanessa Audrey	2023	Indonesia	Psychological Factors, that cover Self-Esteem, Mortality Salience, and Health Consciousness along with Demographic Factors including Income Level, Knowledge, etc.
Enabling Low-Carbon Tourism Through Technology Transfer in Indonesia: A PESTEL Analysis	Fasa, Angga Wijaya Holman; Berliandaldo, Mahardhika; Raditya, Raditya; Rosyidi, Muhammad Iqbal	2023	Indonesia	Technology

The above table shows the brief summary of factors which influence to the incidence of carbon tax in the relevant geographical region. China has the highest number of studies conducted and included in this study. As a quick glance, Cost of tax incidence can be considered to be the most influencing factor for the incidence of Carbon Tax. After that, Level of Technology can be considered to be most influencing factor for the Incidence of Carbon Tax. Over and above that factors like Structural, Socio-economic and psychological seem to pay vital contribution to the incidence of Carbon Tax.

As a result of finding we can summarize that if all the factors affecting the incidence of carbon tax is categorized, they may fall under the categories like Political factors, Economic factors, Social factors, technological factors, Environmental factors, Structural factors, Demographic factors, Socio-economic factors and psychological factors.

1. Political factors

The design, execution, and efficacy of carbon taxes—a policy measure intended to lower greenhouse gas emissions by placing a price on carbon-based fuels—are heavily influenced by political considerations.

Both the specific characteristics of carbon tax programs and their political viability can be influenced by these political factors.

Political factors that play role in the incidence of carbon tax are Government strategy and Decision, and the trust of citizens in the Government i.e. political trust.

2. Economic factors

Economic considerations are a major influence on the design, efficacy, and political viability of carbon taxes. The purpose of these tariffs is to make carbon emissions more expensive, which will encourage people and companies to lessen their carbon footprint. Economic factors, both macro and micro, have a significant impact on its adoption and performance, though.

As per literature, economic factors like Cost of incidence of tax, Income, Price parity in the different region, Competition among the organization affects the incidence of Carbon Tax.

3. Social factors

Social variables have a big impact on how well carbon tax plans are received, created, and work. The success of carbon taxes, which put a price on carbon in an effort to reduce greenhouse gas emissions, depends on how different social dynamics interact with environmental objectives. Political will, public opinion, and the wider societal effects of carbon prices can all be influenced by these variables.

Finding of the study indicates that Level of self-motivation and social norms among the individuals affects the incidence of Carbon Tax. Additionally, usage of corporate profit for the social welfare affects the incidence of carbon tax. Reason behind this saying is that ultimately organization in the form of corporates are contributing in the carbon emission on a large scale so that their usage of profit for social welfare will have social impact on society and sense of responsibility towards environment among the citizens of the country.

4. Technological factors

Technology has a significant influence on how effective and significant carbon tax programs are. Along with influencing the wider economic, environmental, and social effects of such policies, these considerations also dictate how governments, corporations, and consumers can react to the incentives provided by carbon taxes. In other words, technology can either facilitate the shift to a low-carbon economy or, in the absence of it, impede the intended decreases in greenhouse gas emissions.

Level of Technology under the overall infrastructure of carbon emission reduction regime plays a vital role in the incidence of carbon tax.

5. Environmental factors

The design, efficacy, and results of carbon taxes are significantly influenced by environmental considerations. In addition to how various ecosystems and environmental systems react to shifts in carbon pricing, these elements are intimately related to the natural world and climate conditions, which impact the gravity and urgency of enacting carbon taxes.

Carbon Emission is having its everlasting impact on environment and global state of the earth. Therefore, incidence of carbon tax will definitely have influence on the incidence of carbon tax. These factors include average temperature of the region, State of climate change, intensity of carbon emission, etc.

6. Structural factors

The underlying frameworks, processes, and systems with distinctive features of a society, economy, or political system are referred to as structural factors. These elements can have an impact on the implementation, structure, and efficacy of carbon taxes. The implementation of carbon taxes and their

overall effects are greatly influenced by these elements, which include a wide range of aspects pertaining to the political institutions, economic structure, legal frameworks, and existing infrastructure.

There are factors which are pertaining to the structure which means it may pertain to the structure of tax, government of industry. Tax subsidy and Tax Rate is also considered to be vital factor influencing the Carbon Tax. These structural factors may be considered to be more rigid from the other factors. It may have very foundational contribution towards the incidence of carbon tax.

7. Demographic factors

Carbon tax design, implementation, and efficacy can be greatly impacted by demographic considerations. These variables affect how various segments of a population are affected by or see the tax, which can affect public support, acceptance of the policy, and general compliance.

Demographic factors can be considered to be inevitable factors as any regime which pertains to any country or region will have various demographics that play the role for the policy adopted. Same way as a carbon emission reduction regime, carbon tax will also get influenced by demographic factors like Population, Human Capital Index, Gender, Age, Income, Education, Number of Households, and Marital Status, etc.

8. Socio-economic factors

These elements influence how various societal groups are impacted by the tax, how they view it, and how well they are able to adjust or lessen its effects.

As per earlier studies conducted, there are various socio-economic factors that will impact the incidence of carbon tax, which includes such as geographic region, labor market status, household structure and education, Consumer's carbon awareness and their willingness to pay tax.

9. Psychological factors

Psychological factors can significantly impact how people view, respond to, and support—or oppose—a carbon tax. These elements influence people's beliefs, actions, and perceptions of the advantages and disadvantages of carbon taxes.

Carbon tax is the regime which intends for corrective actions towards the environment but through human indeed. When human efforts are involved in the regime it will get influenced by psychological factors. Various psychological factors which impact on the incidence of carbon tax includes Personal perception factors like-Self-efficacy, personal norms, bio-value; policy characteristics factors like-policy fairness & effectiveness; social norm perception, on the other hand studies show the psychological factors like self-esteem, mortality salience, and health consciousness, etc.

Conclusion

To conclude the present study, we can say that Carbon Tax can be one of the very effective policy regimes in order to reduce the carbon emission.

Cost of Tax Incidence is the most influencing factor for the incidence of Carbon Tax. Next most influencing factor can be considered is Level of Technology. Over and above that factors like Structural, Socio-economic and psychological seem to pay vital contribution to the incidence of Carbon Tax. Although, all these factor together can create the synergic effect on the incidence of tax and will vary as per the static of geographical region.

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