year month day
2012 9 12

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Abstract

Title	**Analysis of a City Economy-Environmental Interaction Based on Environmental Kuznets Curve: A Case Study of Toyohashi City, Japan**

(800 words)

Complex and diverse relation between the economic development and the environment has put present world development in a phenomenon where searching for a better or optimum solution is becoming an endless process. Some are suggesting that the two issues go hand-in-hand and many have different ideas on how to deal with them. Many environmental problems occur in cities. City activities are becoming root for global natural energy consumption and maker of pollutions like air, land, water pollutions and environmental warming. Majority of the resources are used to produce energy like electricity, gas and water. The energy state creating diverse environmental problems like ceasing and exhausting of minerals, natural water sources, and emission of green house gas, GHG. Substantial daily output of waste by city dwellers is creating difficult situation to endorse proper processing technology and space for finding landfill in urban areas. This dissertation considers spatial and non-spatial economic variables and sources of environmental pollutants for the purpose of the research. Toyohashi city of Japan has been taken into consideration as the study area. The scope of the study has been kept in finding existing form of relationship between the economic variables of Toyohashi city. Thus, the economy-environment interaction is based on a region or a city framework. Descriptive statistical methods have been considered to find the relationship. The method involves cording, description, analysis and the presentation of the present scenarios, compositions or processes of the phenomena. The study firstly aims to assess relationship between economic growth and use of natural resources. Scope of the findings to describe future directions toward a sustainable city has been sketched. In the latter part, the study underlines environmental aspects of refuse municipal solid waste collection and disposal by linking literature between per capita income, city expenditure on waste management and pollution of Toyohashi city. Theories of Environmental Kuznets Curve or EKC have been taken as the hypothetical testing tool. The inverse U-shape EKC of manufacturing output and electricity usage confirm that technological improvement is able to reduce use of energy usage. It means that energy-output efficiency can be obtained by introducing better technology even keeping the economy growing. On the other hand, EKC of trading and electricity usage and EKC of manufacturing and gas usage show an increasing trend. In brief, the present EKC can be viewed as the hypothesis on the interaction between economic growth, use of energy and environmental sustainability. However, the shape of the relationship is not uniform across sectors of the economy and differs in shape. The outcome is importance as public investment in energy consumption tie the process of improving environmental sustainability. The inverse U-shape EKC for Toyohashi city proves that the relation between per capita EL, per capita city expenditure for municipal waste management, and municipal solid waste can be explained by changes in national and local level initiatives accompanied by economic development and quality of life. The results follow the EKC hypothesis. Interpretation of such outcome is that in Japan national level policy and legal agenda reflects in local governmental level as Toyohashi city was able to improve its citizen's quality of life by addressing environmental pollutions problems by the support of higher income and better technology.