



Some Basic Problems Existing in Current Applied Economics Papers

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Abstract: With the rapid development of economy and the acceleration of globalization process, the research results of applied economics papers are of great significance to guide economic practice and policy making. However, in reality, some basic problems are common in applied economics papers, which involve many aspects such as data collection and processing, model setting and selection, empirical analysis methods and interpretation of conclusions. This paper will sort out and analyze these problems in detail, aiming to improve the rigor and reliability of applied economics papers.

Keywords: applied economics, applied economics papers, economics research, real economic problems

1. Introduction

The development of applied economics stems from the needs of social and economic development. In practice, economic phenomena are becoming more and more complex, and various factors are interwoven, making it difficult to fully explain economic problems by relying solely on traditional economic theories. It is this challenge that promotes the development of applied economics. Applied economics aims to apply theory to practice, providing a scientific basis for policy making and practice through in-depth research on real economic problems. However, the data used in many current applied economics papers may have quality problems, such as unclear data sources, improper data processing, missing data or outliers, some papers may have too simple assumptions, insufficient empirical analysis and fail to reflect the real economic situation.

2. Data sources and sample selection issues

2.1 The importance of data in applied economics research

Economic theories are usually based on a series of assumptions and preconditions, which can be empirically tested by collecting and organizing relevant data. If the data agrees with the predictions of the theory, it supports the theory; If not, the theory needs to be adjusted or the data revisited. Through the analysis of data, it is possible to dig deeply into the economic relations and trends hidden behind the data[1].

In applied economics research, data is important evidence to support research conclusions. The credibility and persuasiveness of the research conclusion will be questioned if the research conclusion is not supported by data or there are flaws in the data. By using high quality and reliable data, the credibility and persuasiveness of research conclusions can be increased, so that readers can trust and apply the research results more[2].

2.2 Problems of data source and sample selection

In applied economics papers, the problems of unauthoritative data sources and unrepresentative sample selection are common. The data sources used in some papers may be unreliable, such as unofficial sources, survey data released by non-authoritative organizations, etc., leading to inaccurate research results; Or fail to cite data sources when citing them, making it impossible for readers to trace the source and reliability of the data.

Some papers are too limited in the selection of data samples, choosing only some specific regions, industries or enterprises as samples, while ignoring others, and the sample size is too small to represent the overall situation; Or errors and improper handling of outliers in the process of data processing lead to deviations and limitations of research results.

2.3 Common problems in data cleaning and processing

In the process of writing applied economics papers, data cleaning and processing is an extremely important link, and its quality directly affects the conclusion and value of the paper. During the data cleaning process, outliers may be caused by data acquisition equipment failure, human input errors, abnormal events and other reasons, and outliers need to be identified and deleted to avoid interference with data analysis[3].

3. Hypothesis and model setting problems

3.1 The fundamental role of hypothesis and model in applied economics research

Assumptions in applied economics papers are usually based on certain theoretical premises. The theoretical premises are difficult to fully conform to the real situation. Researchers can conduct quantitative analysis and derivation of hypothetical economic phenomena to draw more accurate and in-depth conclusions. However, economic phenomena in the real world are often very complex, involving many factors and dynamic changes, and the degree of simplification of the model is often difficult to grasp, and an oversimplified model may lead to deviation from the real situation.

3.2 Explore the effects of endogeneity and exogeneity on model setting

In applied economics papers, if the effects of endogeneity and exogeneity are not fully considered in model setting, the rationality of model assumptions may be affected. When setting the model, this endogenous variable needs to be treated as a dependent variable rather than an independent variable to ensure the reasonableness of the model's assumptions. If an endogenous variable is present in the model, then this variable may interact with other variables, thus affecting the explanatory power of the model[4].

4. Empirical analysis of problems

4.1 The importance of empirical analysis in applied economics research

Through the collection and analysis of actual data, empirical analysis can verify and test the validity of economic theories and hypotheses by comparing the degree of coincidence between theory and reality. At the same time, empirical analysis can also supplement or amend existing economic theories, help to improve the quality and value of applied economics papers, and further promote the perfection and development of economic theories[5].

4.2 Bias in the selection of variables and samples in empirical analysis

Common bias in variable selection includes missing important variables, introducing irrelevant variables and misclassifying variables. The omission of important variables may lead to the failure of the model to fully capture the internal relations of economic phenomena, the introduction of irrelevant variables will lead to the model bias, and the wrong classification variables will lead to the reduction of the explanatory power of variables.

Sample selection bias refers to the systematic exclusion of certain types of individuals or data from the sample due to some reason (such as research purpose, research background, etc.). For example, researchers usually use sampling method to obtain sample data, but some researchers do not follow the random principle to extract samples, but according to some subjective judgment or convenience principle to select samples, non-random sampling may lead to bias between samples and the population; Insufficient sample size may also lead to the reduction of stability and reliability of the research results and may even lead to errors in statistical inference, which may lead to inaccurate or biased research results.

5. Appropriate approaches to endogenous and exogenous problems

5.1 Natural experiment method

The core of this method is to find an external event that affects the explained variable but does not affect the explained variable. By comparing the results of the two groups, the problem of endogeneity and exogeneity can be effectively controlled. This method is essentially an observational experiment, which is an alternative to doing experiments in the field and in the lab.

5.2 Treatment effect modeling method

It is mainly used to evaluate the effect of project or policy implementation, also known as project effect assessment or policy effect analysis. Treatment effect models contain an endogenous indicator variable and are usually divided into experimental and control groups ($D=1$ or 0) as in natural science experiments. Selection bias occurs due to differences in the initial conditions of the experimental and control group members.

6. Theoretical analysis and reasoning

6.1 The importance of theoretical analysis and reasoning in applied

economics research In the research of applied economics, theoretical analysis and reasoning can help researchers to clearly study hypotheses, build theoretical models, determine variable relations, etc., help to understand the internal

mechanism and relationship of economic phenomena, dig deep into the internal laws and characteristics of economic phenomena, discover new economic problems and development trends, and put forward new economic theories[6].

6.2 Theoretical analysis lacks depth and reasoning logic is not rigorous

In the research, in order to simplify the analysis, researchers usually oversimplify the theoretical model, which may not fully reflect the complexity of the real world, resulting in the imrigor of the reasoning logic, which leads to the neglect of some important factors and relationships, thus affecting the rigor and accuracy of the reasoning. However, empirical analysis can only verify the rationality and validity of theoretical assumptions, but can not completely prove the correctness of theories.

In papers, researchers often simply describe the models and parameter selection methods adopted, without a clear explanation of the principles and basis behind them, and simply report the empirical results, without a rigorous explanation of the economic implications and policy implications behind them, lacking in-depth exploration and analysis of the empirical results.

6.3 Methods to maintain the integrity and adaptability of the theoretical framework

Table 1. The proportion of problems existing in theoretical basis in current applied economics papers

Problems	Description	Percentage
Weak theoretical foundation	Researchers do not have a deep understanding of economic theories and lack a solid theoretical foundation	35%
The theoretical framework is incomplete	The theoretical framework fails to cover all relevant factors and lacks completeness	25%
Problems	Description	Percentage
Theoretical update lag	Researchers have failed to keep up with the latest developments in economic theory	15%

In order to ensure the integrity of the theoretical framework, researchers need to have a deep understanding and research of relevant economic theories, which includes mastering basic concepts, principles and models and understanding the internal relations between them, and keep the theoretical framework open, pay close attention to the latest research trends in the field of economics, and be able to adjust and improve according to new evidence and theoretical development (Table 1).

7. Operability and practicability of the conclusions

7.1 Reasons why the conclusion is too abstract and lacks actual data

Support Some researchers have weak theoretical foundation and insufficient understanding of economic theories, which makes it impossible for them to conduct in-depth analysis of economic phenomena and draw more abstract conclusions. When conducting empirical analysis, the actual data may not be adequately collected and processed, or there may be defects in the analysis methods, leading to the unconvincing conclusion. At the same time, the actual data support of the conclusion may also be affected by low data quality, small or under-representative data samples, non-standard research methods, and language expression problems.

7.2 How to make the conclusions more operable and practical

By collecting and processing actual data, using appropriate statistical methods for empirical analysis, and testing the predictive power and explanatory power of theoretical models, more specific and practical conclusions can be drawn, and more targeted suggestions can be provided for policy formulation and practice. In addition to providing general suggestions and programs, the paper can also propose implementable concrete solutions according to the conclusions, and provide more practical guidance for related fields by considering the feasibility and effect in actual operation, specific solutions.

8. Concluding Remarks

In general, there are some significant problems in the basic aspects of current applied economics papers, such as weak theoretical foundation, limitations of empirical analysis and non-standard research methods. They need to adopt normative and scientific research methods, strengthen the adequacy of empirical analysis, and ensure the reliability and accuracy of data quality. Through these efforts, we can push forward the progress of applied economics research and provide more valuable suggestions and programs for solving real economic problems.

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