# Chapter 2 Application of Factor Analysis in Policy Decision

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### ABSTRACT

Public policy is a major focus in the government agenda. To identify the factors that govern the implementation of different policy in public or private sectors, researchers may use certain advanced multivariate statistical techniques. One such tool is the factor analysis, which can be implemented to resolve varieties of policyrelated research issues to an extent. Factor Analysis may provide useful inputs to decision makers to focus on a limited number of factors rather than a large number of parameters while making practically implementable policy. The factor analysis is a multivariate technique that is used to reduce the large number of variables into few underlying factors to explain the variability of the group characteristics. The factor analysis can also be used to develop a test battery for assessing group characteristics. This chapter deals with explaining factor analysis in detail along with explaining different situations where it can be used in the policy framework. Further, to clarify the functionality involved in factor analysis, a solved example related to policy issue is discussed by using the SPSS software.

DOI: 10.4018/978-1-4666-5146-3.ch002

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### INTRODUCTION

The success of different Government schemes administered for the welfare of people depends upon correct conclusions drawn from the feedback data of its implementation. Success of any scheme is largely associated with the opinion of the people on which it is implemented. Response of people on a particular scheme depends upon different parameters. It is quite likely that on certain issue the scheme gets a positive feedback whereas on others it shows negative response. Thus, the need is to identify those parameters which form the basis of the correct evaluation in implementing a scheme. There may be large number of variables through which these parameters can be assessed. It is practically not possible to obtain the feedback from the beneficiaries on such a large number of variables. Therefore it is important to identify the relevant parameters that can be measured by using some handful number of variables to give the maximum feedback covering the entire facet about the implementation of a particular scheme. For instance the services provided by a private agency about making the AADHAAR card for unique identification number in a city can be assessed by asking several questions to the identified people in the random sample obtained from the population in the city. The feedback may be obtained by asking many questions to the people like; how far you have to go from your home for making the AADHAAR card? How much time it took to reach to the centre? Did you get the public transport to reach to the centre? Whether reaching to destination was easy? How much time you had to wait to get your turn in the centre? Did office people give you proper guidance about the documents to attach? How was the behavior of the staff? Whether there was proper sitting arrangement in the office while waiting for your turn. Did you get water in the office? Whether the facility of photocopy was available in the centre? Was it easy to come to know about the location of AADHAAR card centre? Are you aware of the purpose of the card? Do you think that linking your bank account to the AADHAAR card will facilitate you to manage your fund nicely? Like this so many questions can be asked to the beneficiaries to get the feedback. Getting feedback from the people on such a large number of variables is not advisable due to two reasons. Firstly, if the number of questions is so large then the respondents would not take interest to provide their feedback and if at all they agree to cooperate they may not take it seriously resulting inaccurate feedback. Secondly, if the feedback is obtained on very large set of questions then it would not be possible to draw the concrete conclusion for any policy decision. To solve this dilemma the Factor analysis technique can come to the rescue, which can be used to reduce a large number of variables into few identified parameters covering all aspects of the scheme? For instance in this example all these questions can be answered by studying the parameters like "Approachable Distance", "Quality of Service", Facility in the Centre" and Knowledge

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