

A PROPOSAL FOR  
MEASURING THE VALUE OF  
POLICY-ORIENTED  
SOCIAL SCIENCE RESEARCH

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## Abstract

While much is known about estimating the returns to research and development investments in science and technology, little such knowledge exists for policy-oriented social science research. This paper discusses the benefits of this type of research and describes an empirical methodology for measuring them. The focus is on the beneficial effects of policy-relevant social science research on economic efficiency, in both public and private sectors.

## **A.Introduction**

This paper addresses the following question - what are the benefits of policy-oriented social science research? Our existing knowledge on this matter is rather limited. This is both unfortunate and rewarding. It is unfortunate because there is very little which can guide us toward sensible answers and it is rewarding because there is the scope for meaningful contributions. The question in question is itself policy relevant. In particular, resolving it in a reasonably satisfactory way can provide valuable assistance to those in charge of allocating scarce public research resources, especially since social science research is not a top priority in the budgets of most governments.

While there are numerous works which deal with the analysis of government policies[see, for example, Parsons(1995), Dunn(1994) and Portney(1986)] and the evaluation of social science research[see, for example, Stern(1996) and Black(1993)], the literature which directly addresses the question at hand is limited. As such, developing practical approaches to determining the scope and size of benefits from policy-oriented social science research would greatly aid decisionmakers in allocating research resources.

It is not too difficult to realize the possible benefits of policy-oriented social science research. It has long been recognized that the success and welfare of a society depends largely on the quality of government and government policies. Despite the worldwide trend towards meaner and leaner governments, the government matters. For instance, the latest catchphrase at the World Bank is “good governance.” It follows that the usefulness of policy-oriented social science research lies in promoting such socially valuable good governance by helping policymakers design and implement socially more productive policies.

It is, of course, insufficient to assert the presence of benefits. It does not necessarily mean that governments should set aside any public funds for this purpose. Government-supported social science research, like all other government endeavors, must pass the litmus test of cost-benefit analysis, especially with shrinking national budgets. Hence, what is required is an accurate estimate of the rate of return to investments in this area. Only then can the relevant authorities make educated guesses about how much resources to allocate to such investments. Without those estimates, the likely result is underinvestment since parliamentary budget subcommittees will probably not be convinced.

In this paper, I will discuss the various issues associated with measuring the benefits of policy-oriented social science research before proposing an empirical methodology for doing so.

## **B.Measuring the Value of New Knowledge**

Gauging the value of research amounts to gauging the value of new knowledge.

For example, economists regularly attempt to measure the returns to education. The empirical methodology is to compare the salary of, say, high-school graduates with that of, say, college graduates and attribute the difference to college education. In terms of conventional economic analysis, the value of knowledge a high-school graduate presumably acquires by attending college is the higher lifetime income which awaits him upon his graduation. The cost of acquiring collegiate knowledge is the sum of all opportunities foregone by going to college, including the opportunity to work. Armed with estimates of both costs and benefits, we can, for example, estimate the rate of return for a seventeen year old who invests four years of his life in acquiring new knowledge. What we want to highlight here is the existence of a well-established methodology to quantify the benefits of new knowledge in economics, a methodology which we later apply in this paper.

Knowledge, whether old or new, is not directly quantifiable. How do we put a money value or any other number, for that matter, on my knowing the capital of Botswana or your knowing an obscure physics principle? The crux of the above methodology is, in my opinion, to equate the value of new knowledge with the value of economic benefits associated with the new knowledge. For a college student, the value of college-level knowledge is thus the larger paychecks which compensate him for his four years' worth of trouble. Note that a focus on economic benefits and costs turns a multidimensional problem into a unidimensional one.

An implicit assumption of the focus on purely economic factors outlined above is the dominant role of the market mechanism. More precisely, the price of new knowledge, like everything else in a capitalist economy, is simply what the market will bear. Supply and demand in the market for college graduates and in the market for high-school graduates is what determines how much each of those groups earn and the gap between what they earn. Again, this assumption is not trivial for it suggests a specific method for quantifying the value of knowledge.

We can easily see that this kind of empirical approach can be applied to measuring the returns to science and technology research. This is particularly true for applied research and development whose goal is to produce commercially viable products or technologies.

Generally, the commercial success or failure of the final products or technologies reflects the benefits of science and technology research. Of course, there are many potential problems in measuring the output of R & D. For example, is a research program which results in ten mildly useful patents necessarily more useful than another program which results in a single superstar patent? However, it is possible to gauge the value of science and technology research because of tangible results which can be translated into dollar amounts.

The critical difference between policy-oriented social science research on one hand and science and technology research on the other is that the former does not produce for the market. By definition, it is geared instead towards the government sector rather than the marketplace. This explains why we cannot apply the empirical approach described above to estimate the value of social science research and why there is a dearth of knowledge on this subject. The absence of well-defined markets and market prices for government policies deprives us of an indispensable tool for measuring and quantifying the benefits associated with new knowledge.

### **C.Public Sector Efficiency and Social Science Research**

Although it is difficult to measure the benefits of policy-oriented social science research, there are benefits from such research. The general assumption is that the government benevolently seeks to maximize social welfare. In doing so, the government designs and implements a wide array of policies to fulfill a wide array of objectives, such as ensuring the availability of affordable medical care for the elderly, minimizing the incidence of crime on the streets or preventing the outbreak of contagious diseases. In theory, we measure the quality of a government by estimating the increase in social welfare due to government policies. In practice, public sector efficiency is difficult to measure because there is no consensus on what constitutes an appropriate social welfare function or on whether such functions are theoretically valid to begin with.

The absence of a profit motive in the public sector makes an efficient allocation of resources difficult. The ongoing worldwide trend towards privatization of state firms implies that many governments are implicitly acknowledging their own incompetence, especially in running businesses. All governments are subject to finite resources, especially today. In rich countries, the electorates and financial markets have begun to impose constraints on governments long used to spending more than they can earn. In poor countries, of course, the constraint is always greater. The government's optimization problem, therefore, becomes one of allocating limited resources so as to maximize social welfare.

So why is policy-oriented social science research socially beneficial when, unlike natural science research, it fails to yield anything tangible? The answer is that such research produces policy-relevant knowledge which can raise the productivity of policymakers and thus enable them to bring about a larger increase in social welfare with given resources or fewer resources. In either case, the society as a whole gains from the more efficient allocation of resources in the government sector made possible by social science research or the additional knowledge it creates. These kinds of benefits are as real as a useful new product or technology once we realize they mean either more goods and services or release of scarce resources for alternative uses.

A methodology known as cost-benefit analysis(CBA), which is based on welfare economics is an important social science research tool for enhancing public sector efficiency. Although CBA has been traditionally used to evaluate public expenditure projects, such as dam constuction, it is possible to extend it to policies. In the context of its applications in the public sector, CBA has three distinctive characteristics. First, it takes into account all the social costs and benefits

associated with a public program. Second, it uses global economic efficiency or net social benefits as the main criterion for assessing a program. Third, it quantifies all those costs and benefits in dollar terms, which permits a ready comparison of alternatives. The principle behind CBA is to sum up all possible losses and gains to a society resulting from a public program and determine whether the gains outweigh the losses. Only programs with positive net social benefits are judged as worthwhile, a result of CBA's normative reliance on the Kaldor-Hicks criterion of whether it is possible for the gainers to compensate the losers for their losses and still be better off. When there are limited resources, CBA recommends the selection of programs with the highest net benefits.

CBA, as a type of social science research, contributes toward greater efficiency in the government sector. CBA enables policymakers to allocate scarce resources more efficiently so as to achieve the largest possible increase in social welfare. CBA's value added is the greatest when policymakers have little information concerning the program. In this case, they are most likely to select the wrong alternatives, resulting in misallocation of resources. CBA can also be used to evaluate policy performance as well as to recommend policy actions. The use of CBA for ex-post evaluation also helps to improve the government's efficiency by identifying policies which are no longer worthwhile, thereby redirecting scarce public resources towards socially more productive uses.

Although the benefits of other types of policy-oriented social science research are more difficult to pinpoint than those of CBA, there are qualitative similarities between the two. Above all, it is quite obvious that social science research can bring about a more efficient allocation of resources within the public sector. The aim of policy-oriented social science research is to create new, additional policy-relevant knowledge, which can help policymakers to promote social welfare. For example, new knowledge about the way in which money affects real economic activity is valuable to monetary authorities, as is new information about the effects of poverty on criminal behavior to law-enforcement authorities. Even when social science research does not yield precise, quantitative knowledge, it may produce useful qualitative knowledge for policymakers. For instance, researchers may find transfer payments to the poor ineffective in the fight against poverty. This kind of qualitative information is useful because it prompts those in charge of antipoverty policies to consider other policy instruments.

## **D. Government Accountability, Public Sector Efficiency and Social Science Research**

If policy-relevant social science research can promote efficiency in the public sector by expanding the knowledge of policymakers, it can also do so indirectly by informing the public. Policymaking does not take place in a vacuum but rather within the political context in which policymakers find themselves. That is, government objectives, goals and actions reflect the demands of the public to which governments are accountable. In democracies, elections provide the mechanism for ensuring accountability. Even in non-democratic political systems, there are alternative mechanisms, often more violent and drastic than elections, which set a limit to the government's degree of freedom. To the extent that citizens care about whether their tax payments are being put to good use, a key criterion of accountability is how efficiently the government allocates public resources. To the extent that the public does care about how public funds are used or misused, public opinion can critically affect governments and government policies which promote efficient use of public resources.

There are, of course, considerations which limit the effectiveness of popular sentiment as a mechanism for steering the government towards efficiency-friendly policies. Even in democracies, where the responsiveness of the government to the demands of the people is supposedly the strongest, voters vote for politicians rather than policies. Politicians represent at best a bundle of policies. In non-democratic systems, the connection between the political process and public sector efficiency is even more tenuous, if it exists at all. The governments in those systems often rely on nepotism, cronyism and other resource allocation mechanisms which do not even have anything to do with efficiency. Another objection against the theoretically beneficial effect of public opinion on public sector efficiency is the inability of governments to take a long view of matters. This is particularly true in democracies but also valid to a lesser extent in other political systems. The central concern here is that governments may sacrifice the long-term well-being of the society by pursuing policies which bring about short-term political gain. It is not hard to see how buying off political support with goodies can come into conflict with efficiency considerations.

A more fundamental objection has to do with the actions and incentives of the citizens rather than the government. Public opinion might well be a poor champion of efficiency in the government sector simply because the public might not want efficiency in the government sector! In particular, citizens organize themselves politically to actively go after goodies rather than passively wait for

the government to hand them out. This line of thought is based on public choice theory. The government then degenerates into an arena where citizens fight out for redistributive spoils. The only type of efficiency which concerns the citizens is the efficiency with which they can get their hands on public resources.

All of the above arguments which cast doubt on the potential of public opinion to steer the government into making more efficient use of public sector resources are valid. However, they too give only a limited, one-sided picture. As the public revolt against Big Government in many Western countries and the turning over of state-owned companies and economic activities handled by the state to the private sector show, the public will not put up with the government's ineptitudes forever. Given the significance of the public sector in most economies, it is inconceivable that persistent misallocation of public resources can co-exist with a socially acceptable level of economic growth. In the long run, whether through the ballot box or by taking to the streets, the general public will replace inefficient policies and politicians who embody them with more efficient alternatives. This is so even in severely repressive political systems, as the demise of communism clearly illustrates. Therefore, what pushes the people to push for government efficiency is the adverse effects of government inefficiency on overall economic well-being.

Unfortunately, the long-run may be intolerably long in terms of the suffering inflicted on the governed. This is where policy-oriented social science research and the policy-relevant knowledge it creates becomes relevant. The better informed the public is about the misallocation of public resources, the more likely they are to seek recourse to remedies, eliminating policies responsible for the misallocation. In addition to directly promoting greater efficiency in government, social science research also does so indirectly by arming the public with knowledge about the consequences of government actions. Thus, policy-oriented research can nudge the government towards policies which aid social welfare by fostering the ability of the public to monitor government behavior.

Furthermore, the policy-relevant knowledge generated by social science research can also help to protect the public from itself by making the public aware of the misallocation of public resources due to special interest group lobbying and other socially wasteful political activities.

## **E.Private Sector Efficiency, Overall Economic Welfare and Social Science Research**

Government policies not only affect the efficiency of the government in using public resources but also the allocation of resources within the private sector. This is particularly true for economic policies such as monetary policy, fiscal policy, trade policy or industrial policy. Their effects on the composition and overall performance of the private sector are self-evident. For example, a high level of protectionist barriers against imports will result in the allocation of more resources toward the protected industries and an increase in the tax rate against savings will produce a lower savings rate. Less obvious but sometimes equally significant are the effects of non-economic policies on private sector efficiency. For example, ineffective law enforcement and the consequent breakdown of law and order can increase the cost of doing business while tougher environmental policies will not only affect the allocation of resources within existing industries but also spur the emergence and growth of new, environmentally industries. Thus, the efficiency of both public and private sectors and the general economic welfare depend critically on the quality of policies and policymakers.

Thus, one can see that government and government policies do make a great deal of difference in how well the economy does. Accepting the arguments of non-Keynesian economists against active government intervention in the economy (most economists today would at least partially agree with this point of view) does not in any way reduce the potential effect of government policies on the private sector and economy. Above all, economic policymaking in a capitalist society is about laying down and enforcing the rules of the game in the private sector and those rules matter very much in the performance of the private sector.

The benefit of policy-oriented social science research and the policy-relevant knowledge it creates for the private sector is more efficient allocation of resources. More precisely, this kind of research provides policymakers with knowledge about the consequences of their actions on the efficiency of the private sector. Better-informed policymakers are more likely to pursue efficiency-friendly policies than ill-informed ones. However, the value of additional policy-relevant knowledge depends on the policymakers' initial knowledge. For example, the policy advice of economists is likely to create much more value added in transition economies where economic policymakers have very little experience with market economy systems than in mature, industrialized countries. Furthermore, social science research can indirectly promote concern for private sector efficiency among policymakers by enlightening the public about the effects of

government actions on private sector efficiency and overall economic performance, thus galvanizing public opinion in favor of pro-efficiency politicians and policies. The relevant comparison is between the level of efficiency in a world with and without social science research and the difference between the two is what such research adds to social welfare.

While social science research can make significant contributions toward the rectification of government failure, they can do the same for market failures. Markets do not always produce the most efficient allocation of resources or in some cases, even exist. The most commonly cited sources of market failures include externalities, public goods and natural monopolies. For example, roads are likely to be underproduced and pollution overproduced relative to their socially optimal level in the absence of government intervention. The role of social science research in these instances lies in producing and disseminating information on the nature and extent of market failures so as to give policymakers and the public a clearer picture of the most appropriate government actions. That is, how many miles of roads the government should build and how much clean air it should protect.

In the long run, dynamic efficiency matters more for economic performance than static efficiency; the Schumpeterian competition of new products, services and industries uprooting and replacing existing ones takes precedence over the competitive market structure of many price-taking firms. The invention of automobiles sooner or later dwarfs the issue of whether the market for horses is "competitive" or not. In general, what ultimately propels economies and societies forward is innovation, or the creation of new knowledge. Policy-makers can and do play a vital role in the knowledge-creation business by providing the appropriate environment for this critical business. More precisely, policymakers must pursue policies which create and maintain an environment in which creators of useful new knowledge can gain sufficient rewards for their efforts. The relevant policies here are those concerning the protection of intellectual property rights such as patents and copyrights. To the extent that these rights entail monopolistic markets and static efficiency losses, the policymakers have to strike the right balance between dynamic benefits and static costs so as to maximize social welfare over time. Intellectual property right protection illustrates the importance of the government's role, of laying down and enforcing the rules of the game in the private sector as well as the corresponding scope of the gains from policy-oriented social science research in this area. This kind of research provides the kind of knowledge policymakers need to protect and encourage knowledge-producing activities and those who engage in it.

## **F. Empirical Considerations**

Before proposing specific empirical methodologies for measuring the benefits of policy-oriented social science research, we need to consider the conceptual issues associated with this type of measurement. Above all, it is important to keep in mind that the output of such research is policy-relevant knowledge and the value of this knowledge lies in its usefulness to policymakers and the public, especially in promoting social welfare. In this paper, we define that objective to be economic efficiency, although in reality there are many other objectives, such as distributive equity, which the government and the governed pursue. Therefore, the central purpose of this paper is to suggest a practical approach to measure the effect of policy-oriented social science research on efficiency in the public sector. Improvements in efficiency are the conceptual outputs and the amount of research investments, the inputs.

The most serious potential source of underestimation of the social benefits of policy-oriented social science research is that policymakers might not make full use of the knowledge produced by this kind of research. As discussed earlier, political considerations could prevent or obstruct their pursuit of efficiency and thus their ability to adopt new knowledge which promotes efficiency.

Furthermore, bureaucratic incompetence or inertia or self-interest may make policymakers both unwilling and unable to take advantage of useful knowledge generated by social scientists. Suppose, for example, that economists recommend the termination of a certain government agency on the basis of a cost-benefit analysis. In all likelihood, that agency and its allies will lobby for survival, rendering the implementation of the recommendation uncertain. The point is that even when policy-oriented social science research produces large amounts of socially useful knowledge, such knowledge does not translate into correspondingly large amounts of tangible social benefits, whether in achieving greater government efficiency or in fulfilling some other social objectives, if policymakers cannot or will not use it. In other words, whether social science research and the policy-relevant knowledge it creates can improve social welfare depends on the ability and willingness of policymakers. Since what matters empirically is actual rather than potential improvement or efficiency gains, the inability or unwillingness of policymakers to utilize useful knowledge generated by policy-oriented social science research will result in underestimating the social value of such research.

On the other hand, there are also factors which may lead to overestimating the effects of research and knowledge. For example, omitting variables which have a significant, positive impact on both social science research and the social objective it promotes can lead to spurious correlation. Thus, although it may appear that policy-oriented social science research has a strong, beneficial effect on government efficiency, this could be an illusion if the variables of interest are independent of each other but another underlying variable not included in the empirical analysis is driving both of them. For example, we can expect a higher level of social science research as well as public sector efficiency in more developed economies. This positive effect of the level of development on both research and efficiency could cause a spurious positive empirical relationship between the two.

### **G.A Proposal for Measuring the Benefits of Policy-Oriented Social Science Research**

In determining practical approaches to estimating the value of policy-oriented social science research, we must bear in mind what is and is not practical for empirical purposes depends largely on the availability of data. We would normally compare the actual, observed level of social welfare with what the level of social welfare would have been had there been no social science research at all. Then, ignoring the various empirical complications noted previously, we can estimate the rate of return on social science research by dividing the increase (presumably) in welfare by the amount invested in research. In this paper, as we are concerned with efficient allocation of resources, GNP or some other index of economic output would capture social welfare. However, since we may not have the required information, we will need an alternative methodology which requires less information.

Data limitations affect an empirical approach based on analyzing individual policies. To begin with, it is extremely difficult to define and sort out policies in a clear, precise manner. Does government behavior regarding possible trade sanctions against a particular country constitute part of foreign policy or trade policy? Do more stringent environmental regulations reflect industrial policy or environmental policy? Are laws against child labor elements of labor policy or education policy? Almost as serious is the problem of classifying social science research by policy affiliation. Quite often, a research project produces implications for different policies. At other times, the problem the social scientists set out to investigate in the first place may be hard to classify in terms of policy. Therefore, estimating the benefits of social science research on a policy-by-policy basis is although theoretically feasible, difficult in practice.

Likewise, an empirical methodology based on individual public sector projects, such as the construction of an airport or a dam, suffers from a similar lack of practicality. Unlike policies, however, projects are generally well-defined. In fact, the aim of cost-benefit analysis is to evaluate the net benefits of government projects from the viewpoint of the society, a task which the evaluators would find intractable unless they had clear ideas of what those projects are to begin with. If there were data on the amount of social science research for individual projects, estimating the benefits of social science research on a project-by-project basis would be a straightforward exercise; we simply regress the net social benefits of projects on the amount of research. Unfortunately, data on project-specific social science research are difficult to obtain because the bulk of policy-oriented research deals with policies rather than projects.

The above suggests that our empirical research must rely on highly aggregated data. In particular, theoretical as well as data considerations favor an analysis of international differences in public sector efficiency and the role policy-oriented social science research plays in explaining those differences. Our methodology involves the following three-step procedure. First, define and measure government sector efficiency across different countries. Second, do the same for policy-oriented social science research across countries. Third, identify all other variables which may affect the chosen index of efficiency and regress this index on those variables as well as the chosen index of research in order to isolate and estimate the size and significance of the effect of research on efficiency. The underlying idea is that countries which produce a lot of policy-relevant knowledge would have better-informed and more knowledgeable policy-makers and public, thereby directly and indirectly better policies and better government. In this paper, we have defined "better" somewhat narrowly in terms of economic efficiency alone but it is equally valid to use alternative criteria - for example, distributive equity - or a combination of several criteria for measuring the quality of policies and government. For our methodology to be workable, we need to find the indices of both government efficiency and policy-oriented social science research.

Unfortunately, there are no well-developed, widely used measures of public sector efficiency. As discussed previously, cost-benefit analysis (CBA) is the standard tool for evaluating the efficiency of government programs and may be applied for evaluating entire policies as well. However, there are practical constraints which work against such applications. We have already noted the problem of identifying separate policies and policy-specific social science research. At a deeper level, CBA is essentially a partial equilibrium analysis and therefore more suitable for evaluating programs rather than policies because distributional consequences are more significant for the

latter than the former. That is, the larger the scope of government action, the greater will be the impact on allocation of resources, relative prices and income distribution. Hence, the use of CBA makes more sense for government programs than policies, and for policies than the entire government sector.

Nevertheless, CBA does provide us with a limited empirical index for public sector efficiency - the average social rate of return on public investments. For each country, we can use available CBA data to estimate this rate. To be more exact, we can derive the rate of return for each project by dividing its net social benefit by the amount of government investment and find the average rate by simply calculating the average of the project-specific rates. This index suffers from several major shortcomings as it captures only a part of all government expenditures. Also, CBAs carried out by policymakers or social scientists under their instruction are likely to exaggerate the social benefits to the advantage of the policymakers. Even the more objective CBAs cannot reveal the actual or realized rate of return. Additionally, the social rate of return on public investment projects may vary greatly from country to country for reasons other than public sector efficiency - for example, the initial level of infrastructure. Finally, and most significantly, the impact of government policies on the economy is limited to not only the government sector but also the private sector and the whole economy.

In view of the above considerations and the absence of a well-established measure of public sector efficiency, I propose an index of social welfare rather than public sector efficiency as our dependent variable. In other words, I believe that the yardstick by which we can best gauge the benefits of policy-oriented social science research is some measure of social welfare. Our underlying assumption is that the objective of policymakers and governments is to bring about the greatest possible increase in social welfare. This is not an not unreasonable assumption despite evidence to the contrary. With this assumption, government efficiency becomes a means to an ultimate end rather than an end in itself, the ultimate end being the well-being of the members of the society served by the policymakers and the government.

In this paper, we have focused on economic well-being. It is widely agreed that a basic goal of governments is to improve the standard of living of their citizens. At the same time, we have already discussed in detail the tremendous importance of sound policies and good governance, not just for allocative efficiency in the public sector but also in the private sector and the overall performance of the economy. So governments seek to promote social welfare and one index of

social welfare is the standard of living of the members of the society they serve. Hence, we propose the following as a measure of the government's relative success - indices of living standards such as per capita income or per capita consumption. That is, we propose those indices as yardsticks with which to gauge the effectiveness of policymakers and the government in promoting social welfare. Of course, there are many other elements of social welfare, such as distributive equity, unemployment level and crime rate. We have omitted those elements not because they are insignificant but because what we need is a practical methodology rather than the best or most comprehensive one for measuring the value of social science research.

Having broadly defined our dependent variable, we can now do the same for the primary independent variable, policy-oriented social science research. For this, recall that this kind of research produces policy-relevant knowledge for policymakers and the public. Other things being equal, the greater the amount of investments in such research, the greater will be the amount of knowledge produced. In this connection, we assume that for empirical purposes research reflects the output of knowledge although it is, more accurately, an input in the production of knowledge. Other things being equal, we can expect more knowledgeable policymakers and public, in particular policymakers, to result in more effective policies and governments. What is relevant is not the total amount of knowledge but the amount of knowledge each government official has. For example, consider a country which invests twice as much in social science research as another but at the same time has a public sector with ten times as many employees. Then it is likely that, on average, the government officials of the country with the smaller total amount of social science research possess more knowledge. With this in mind, we would like to propose as our key regressor a variable which captures the research or knowledge content of the government sector. Some specific possibilities include the ratio of aggregate social science research expenditures to total government expenditures, the ratio of number of social science researchers to the number of government workers, the ratio of aggregate social science research expenditures to the number of government workers or any other variable which reflects the relative or average knowledgeability of the government sector.

Therefore, our basic estimating equation would be cross-sectional for a year or several years. It should have an index of living standard on the lefthand side and variables which affect the standard of living, including an index of the knowledge content of the public sector, on the righthand side. The data we use will be limited to the countries for which data is available, particularly for social science research. We expect the estimated coefficient of the knowledge

content variable to be significantly positive. We can interpret the size of the estimated coefficient to be the increase in the standard of living due to an increase in the knowledgeability of the public sector. That is, it provides an estimate of the social benefit of a higher knowledge content of the government sector. The straightforward interpretation of empirical results supporting our conjectures would be that, ceteris paribus, countries with more knowledgeable governments generally enjoy a higher standards of living.

Furthermore, it is possible to replace the standard of living with the growth rate of the standard of living over a given period of time as our regressand and, at the same time, take the average of whatever ratio we are using to represent the knowledge content of the government over the same period of time and replace year-specific ratios with this average on the righthand side. A positive, significant coefficient here indicates that nations with more knowledgeable governments enjoy faster growth rates of living standards.

## **I. Conclusions**

In this paper, we considered the issue of how to measure the benefits of policy-oriented social science research. If the basic objective of policymakers and government is to maximize social welfare, then the qualitative benefits of policy-relevant research are clear enough. This kind of research produces knowledge and information for policymakers and the public about policies, which are the tools policymakers and governments use for pursuing their goal of improving the well-being of the societies they serve and in so doing, provides valuable guidance and assistance concerning the construction, improvement and operation of those tools. Qualitatively, the benefits of policy-oriented social science research are firstly, to provide policy-relevant knowledge and secondly, to promote social welfare.

Consequently, a rigorous empirical methodology would be a two-step procedure. In the first, we would estimate the effect of social science research on the knowledgeability of policymakers and the public, particularly the former. In the second, we would estimate the effect of knowledgeability on social welfare. Unfortunately, in practice, data limitations rule out the implementation of this approach. In particular, it would be difficult to define and measure knowledgeability. So we propose a second-best methodology based on a knowledge content variable which, in turn, is based on the ad hoc assumption that the amount of research reflects the output rather than input of knowledge

Another assumption we make is to equate social welfare with economic efficiency. More precisely, we define the main objective of the government as raising the standard of living of its citizens. At the same time, governments and policymakers can and do exercise an enormous influence over the allocation of resources in both public and private sectors and, in the process, play a key role in the economic well-being of a society. The yardstick for measuring the value of policy-oriented social science research then becomes the extent to which the knowledge produced by such research contributes to improvements in living standards. To repeat, the rationale for our assumption is not that the other objectives of the government are any less important and also note that a more complete methodology would take into consideration objectives other than economic efficiency. One advantage of our approach though is that it enables us to derive concrete monetary estimates of benefits. In spite of the serious shortcomings, this proposal is a beginning towards a workable means to gauge the social worth of social science research.

Finally, no matter how we define social welfare, the production of useful policyrelevant knowledge will not yield tangible social benefits if policymakers are unable or unwilling to make use of the knowledge, for the same reason that knowledge which can cure cancer is socially unproductive until it is translated into an actual drug or treatment technique. Thus, in the final analysis, the value of policy-oriented social science research depends critically on the policymakers and the various constraints and incentives they face. For it is they, not social scientists, who must build and run the tools called policies.

### References

- Black, Thomas R., 1993. *Evaluating Social Science Research:An Introduction*. London; Thousand Oaks:Sage.
- Dunn, William N., 1994. *Public Policy Analysis:An Introduction*. 2nd ed., Englewood Cliffs, New Jersey:Prentice-Hall.
- Parsons, D.W., 1995. *Public Policy:An Introduction to the Theory and Practice of Policy Analysis*. Aldershot, UK;Brookfield, Vermont, US:Edward Elgar.
- Portney, Kent E., 1986. *Approaching Public Policy Analysis:An Introduction into Policy and Program Research*. Englewood Cliffs, New Jersey:Prentice-Hall.
- Stern, Paul C., 1996. *Evaluating Social Science Research*. 2nd ed., New York:Oxford University Press.