

PERSPECTIVES FOR FURTHER DEVELOPMENT OF STATISTICS IN THE PHILIPPINES AND RELATED PROBLEMS IN STATISTICAL EDUCATION

by

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Introduction

When I had the honour of being asked to address the Association, I had no difficulty in finding a subject for my talk. The topic could hardly have been any other than statistical education and training, since I am in Manila to advise the Statistical Center on its program and development and I believe that this is a serious responsibility, calling for undivided attention and singlehearted interest.

As I began to prepare myself for this occasion, it appeared to me that in order to discuss effectively before you the problems of statistical education, I should relate them to the perspectives for further development of statistics in this country. As you know, it requires a fairly considerable period of time to train a well-rounded professional statistician. The statistical education and training of the present must therefore anticipate the needs for statisticians in the future.

I need not emphasize to members of this Association the importance of the contributions that our profession is called upon to make to the development and welfare of a country. I shall be content to enumerate the four main forms that these contributions may take, as I found it convenient to distinguish them throughout this talk.

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First, it is through the statisticians' efforts that the major part of the quantitative information on the resources of a country, its people and their activities is collected and made available in the form of official statistics.

Secondly, statistical methods, simple or elaborate, are needed instruments for the utilization of these quantitative data by public authorities, entrepreneurs, businessmen, scholars and other groups of citizens. Some statistical methods are simple enough to be applied by the different users of the data, with perhaps some occasional advice from the statisticians. Other statistical methods are, as you know, quite elaborate, and can be used only by professionals.

Thirdly, statisticians contribute powerfully to the preparation of effective scientific and technological experiments, and to the analysis of their results which are important for technological progress and economic growth.

Lastly, statisticians play an important part in providing elements of decisions in many problems of an administrative, social, economic, industrial nature. As you realize, I have here in mind the applications of statistical procedures to the control of the quality of manufactured products, and to what has come to be known as operational research.

After these preliminaries, I should like to consider in more detail the perspectives for development of each of these four main forms of statistical activity in this country during the next five years or so, and the related problems of statistical education.

Production of Official Statistics

Recent Development in Statistical Organization and Operations. With respect to the production of official statistics, the last three years have been here a period of unusual importance. Legal provisions have set a framework for the administration of a co-ordinated statistical programme and for the improvement of statistical standards. I am referring to the creation of the Office of Statistical Co-ordination and Standards, and

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to the realignment of responsibilities between the Bureau of the Census and Statistics and various departments such as that of Agriculture, so as to avoid certain duplications of efforts. Within the new framework of statistical organization, several inter-departmental committees have been set up to study the best allocation of responsibilities for collecting data in fields where notorious duplications existed, for example foreign trade statistics and vital statistics. Other committees have addressed themselves to the improvements of standards and methods for various categories of data, e.g., vital statistics, national income statistics, crop and livestock statistics. Most important, three new large continuing statistical operations have been started: the Philippine Statistical Survey of Households and the Survey of Manufactures carried out by the Bureau of the Census and Statistics, and the Crop and Livestock Survey carried out by the Agricultural Economics Division. In addition, special surveys have been undertaken on some aspects of the agricultural economy of the country: costs of production and prices received by farmers.

If one remembers that these developments took place over a period of three years only, during which the resources in qualified professional staff were small, one should consider them as notable and praiseworthy. They clearly indicate that the interest of the Government, and of an enlightened section of the public, had made possible a vigorous effort for the improvement and expansion of official statistics in this country, and one feels justified in expecting the continuation and acceleration of this trend. This impression is fortified by the decisive start made during the same period of time by the Manila Statistical Center. In three years, the Center has attracted 397 participants to eight in-service training sessions and a training conference, as well as 271 University students and auditors, nearly all graduates.

Much, nevertheless, remains to be done. For example, full recognition does not yet seem to have been given to statisticians in the civil service. It may be expected that under the pressure of the needs for more and better official data, arrangements will be made, during the next few years, for pro-

viding an equitable classification and a normal professional career for statisticians in the civil service. This is essential for attracting more able and qualified people in the statistical services of the Government, and for retaining those who are in these services.

Let us also remember that at one of the recent meetings of the Association, we were sternly reminded that businessmen were more often than not unable to find the official Philippine statistical data which they needed. It should be noted, in passing, that it is a clear sign that a climate favorable to the development of official statistics prevails when the business community voices so impatiently the need for more and better data. I do hope that businessmen will keep on prodding the statistical bureaus of the Government, and that the Association will continue to bring together those who need data and those who can supply them now or will be able to do so one day.

Let us now try to make a more specific outline of the perspectives for further development of official statistics in the Philippines and of related problems in statistical education. Given the continuing support of the Government and of the public, and with the availability of more professional statisticians trained at the Statistical Center, it may be anticipated that, during the next five years or so, official Philippine statistics will progress in three main directions: first, better utilization of the statistical organization, conducive to better coordination of statistical activities; secondly, improvement of the quality of the statistics and, thirdly, expansion in the number of statistical series and in their scope. Let us consider each of these three points.

First, the overall *programming of the statistical work of the Government* departments will become a completely familiar and accepted procedure, and the statistical staff of the different agencies will realize that they all are contributing to the same statistical program designed to meet the needs of the country. The progressive staffing of the principal statistical bureaus of the Government by qualified statisticians having re-

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ceived in common their professional or in-service training at the Statistical Center will contribute in no small measure to this result, as will also the activities of this Association, where members sharing in the same professional ideals can discuss their problems without any hindrance arising from administrative hierarchy and organizational barriers.

Greater experience will make it possible to prepare statistical programs extending over several years, and designed to meet the actual and anticipated needs of the country, that is, of the Government and the public. In particular, a statistical program should take very much into account any national plan for economic development and social progress, so as to provide the data necessary not only for preparing these plans but also for evaluating their results and making periodic revisions in the light of the evaluations.

I am confident also that the programs of Government statistical work will become more precise and more inclusive. For example, nearly all remains to be done to ensure a systematic and regular publication of Philippine official statistics in a manner meeting the needs of the users. Statistics are of little value when they remain scattered in poorly presented mimeographed sheets that are often produced belatedly and always have a small and haphazard circulation. It is likely that the complaints of the business community over the lack of data are due in part to the difficulty of access to certain statistical series. The example of a neighbor country may perhaps be found inspiring in that respect. The Statistical Yearbook of Vietnam and the tri-lingual Monthly Statistical Bulletin are published regularly at Saigon, in a clear printed form. These publications are available to the public by subscription and sale at some bookstores, and they are distributed throughout the central government departments and to all provincial authorities.

I think it likely that we shall also see the extension of some form of statistical organization into the provinces, and this would be a favorable development. It is in the barrios and sitios that data are collected, not in offices at Manila. To meet immediate operational necessities, the offices responsible

respectively for the survey of households and the survey of crops and livestock have already appointed regional and field agents who are active mostly during the periods of data collection. In a few years, we may have also some regional health statisticians and epidemiologists. Perhaps—but this is a conjecture only—the need will be recognized for some professionally well qualified statisticians to be given continuing supervisory and advisory responsibilities for statistical work carried out in each region or, later, in each province. These regional or provincial statisticians could contribute greatly to the improvement of the quality and quantity of official statistics in this country. The recruitment of a suitable staff for these regional posts and some provincial ones should be possible within the next five years from among the graduates of the Statistical Center.

Secondly, for the *improvement of the reliability and comparability of official statistics* during the same period, the perspectives seem to be fairly clear. The painstaking committee work, mentioned earlier has been initiated too recently to have yet born all its fruits. Its continuation and expansion to more types of statistics and to more statistical operations will result not only in the use of better defined and more useful concepts and better nomenclatures, but also in improved operational procedures from the layout of the statistical questionnaires to the final presentation of the data which, as was said before, leaves so much to be desired. The samples utilized will be still more efficient, and better frames will have become available for designing and carrying out sample surveys.

In the case of the many series of important data which are collected as a side-line of regulatory administrative operations, I like to think that great improvements will also take place. This can be done at small cost if the office in charge of statistical standards addresses itself to the problem with skill and tactful determination. It is largely a matter of arousing a sense of responsibility for the statistical by-product of their work in the regulatory offices, of suggesting many small improvements for making the forms used more convenient for

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collecting statistical data, and of streamlining the procedures through which these data are centralized.

Thirdly, we can anticipate that the recent *increase in the number of statistical series and in their scope* will continue during the next few years to come. Let us cite a few examples. Given suitable appropriations, the household survey will be well broken in, and its successive rounds will be the source of data on the characteristics of the population of the Philippines, its economic activities, its mobility, on the size of families, on their income and expenditure pattern, on private savings, etc. From the crop and livestock survey will come better rice production data. One may hope that better statistics of births and deaths will also become available, following the detailed inquiries that have been initiated recently in selected provinces by the Bureau of Health and the Bureau of the Census and Statistics.

Standing out in the perspectives for statistical progress in the next five years are the population and economic censuses envisaged for 1960, in line with the recommendation that censuses be taken all over the world around that year, addressed to all countries by the United Nations and by the Food and Agriculture Organization of the United Nations. The census operations should be completed—that is, the results published—in just about five years from now, so that they fully belong to the perspectives that I am trying to draw. Efforts towards the thorough and methodical preparation of these censuses have already begun. This is of good omen for the success of these major undertakings, provided that the necessarily very large appropriations which censuses require are voted in time. The censuses will become irreplaceable sources of benchmark data and of detailed information on the size, distribution, characteristics and activities of the population, on the structure of agriculture and of other branches of the economy. Since sampling techniques are no more a novelty here, it is well possible that these techniques will be used, for the first time, in the next censuses, perhaps for collecting certain data from a fraction only of the population, or in the course of the processing of the census. On the other hand, results from the complete

census enumeration, if it is successful, will provide sampling frames and bases for stratification, thus making it possible to carry out better sample surveys in the years following the tabulation of the census results, particularly if some attention has been paid in the planning of the censuses to the kind of data required for these purposes.

So much for the production of official statistics. What then are the perspectives for the development of the other three main forms of statistical activities that were mentioned at the beginning of this talk?

Utilization of Statistical Data

It is my impression that, in this country, the utilization of statistics has been lagging behind their production. Many administrators or businessmen declare, in the best of faith, that they would base their decisions on sound data if these were available. It is a delusion common among those not well experienced in the use of statistics that they will, some day, have at their disposal data so reliable, comparable, complete and detailed that required decisions will, as it were, emerge from these data without effort. The victims of this delusion generally conclude that they need not use at all the less perfect data that are available for the time being. As you well know, the right attitude is quite different. There are no perfect statistics, and in no country does one find answers to many problems ready-made in statistical publications. On the contrary, painstaking efforts always, and statistical skills often, are necessary in order to assemble the data relevant to a given problem, to evaluate and analyze them, to make chronological and spatial comparisons, and to draw valid conclusions.

It may be anticipated that great strides will be made here in the use of statistics during the next few years under the influence of several converging forces.

On the one hand, the number of persons feeling a need for using statistical data in their fields of activity will substantially increase, and among such persons, the proportion will be greater of those who are aware of the limitations of statistical

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procedures and of the conditions for their successful use, and who will have equipped themselves to meet these conditions. This Association can contribute much to this progress by spreading two simple but important ideas: first, users of statistics should be familiar with at least the elementary statistical methods that are sufficient in many cases; secondly, they should know that if their problems require the application of sophisticated statistical procedures, not too well-known to them, then it is essential to call on the assistance of trained statisticians. The creation of the Institute of Economic Development and Research, the five-year economic and social development program, the institution of the social security system, the program for community development, the better realization of the value of population and public health statistics, all will accelerate this evolution.

On the other hand, a greater number of professional statisticians, mostly graduate of the Statistical Center, will be available here for using statistics skillfully. They will also be able to assist several colleges and departments, in the many universities and technical schools existing in the Philippines, in training more non-statisticians in the simpler statistical methods used in various fields. In this respect, the Statistical Center will be in a good position to take a lead by offering advice for a sound expansion of elementary statistical education in the Philippines, and perhaps by developing its own activity at that level.

It is seen that in these developments, the part of the statisticians is important; but it is in no wise an exclusive one. Sociologists, demographers, social workers, economists, engineers, and other specialists with some knowledge of statistical methods would also be contributing much to the greater and better use of statistics.

The analysis of economic and demographic data of national significance are examples of promising fields of application of statistical methods that come at once to the mind. But they are by no means the only directions in which the perspectives for progress in the use of statistics in this country are bright. For instance, the introduction of social security will call for more

analyses of actuarial, demographic, social and economic data. Applications of statistical methods to hydrology and to the analysis of river floods are beginning to receive more attention here. Market research is also arousing interest in various firms, and this is only a start. Meteorology actually has had an edge on most other fields of applications: it has been a breeding ground for several of the country's statisticians, and there is no reason to anticipate that there will be less interest in the future than there was in the past in the statistical analysis of weather data.

It is to be expected that these trends towards a wider and better use of statistics will cause many calls to be made on the advisory and research facilities of the Statistical Center. These facilities themselves may well have to be expanded so as to meet requests from Government departments and corporations and from private parties for advice in methodology, demonstrations, setting up of pilot operations, and possibly the undertaking of wider statistical projects under contract.

Use of Statistical Methods in Experiments

The preceding section concerned mostly the use of statistics gathered through observation. Most official statistics on the social, cultural, economic and other aspects of human life belong to that category, as well as most statistics collected by business firms on their own activities or on the markets in which they are interested. Also included among observational data are those pertaining to natural phenomena which cannot be the subject of experiments.

The utilization of statistical methods for designing scientific and technological experiments, and analyzing their results, is only in its beginnings here, although it probably presents less difficulty than does work with observational data. In all parts of the world, agricultural experiments have been traditionally a proving ground for statistical methods. There are here, as you know, several experimental stations of the Bureau of Plant Industry and the Bureau of Animal Industry, and a Central Station at the College of Agriculture. Statistical me-

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thods have so far hardly been used in the design and analysis of the experiments carried out at these stations, except at the Central Station and at the Malagayan rice breeding station. The scarcity of trained statisticians may explain that situation. It is therefore reasonable to expect that the next few years will see profound changes in that respect, and that statisticians trained at the Statistical Center will participate more and more fully in the work of agricultural stations. They will also concern themselves with experimentations carried out in various fields of science or technology other than agronomy and plant or animal genetics, for example, in testing materials, including the fibers of which the Philippines are an important producer in the world. In these developments, the Statistical Center could be of assistance not only through its teaching, but also as an advisory, research and service institution.

Use of Statistical Methods in Quality Control and Operational Research

Statistical methods have begun to be used for the *control of the quality of production* in some Philippine industries, and their utilization has been so successful that it is expanding. As the industrialization of this country progresses, it can safely be anticipated that applications of statistical methods of quality control will become more widespread, calling for a close collaboration of engineering minded statisticians with statistically minded engineers such as are several graduates and students of the Statistical Center.

The field of *operational research*, in which statistical methods are so important an element, is practically untouched in the Philippines. Some may believe that the problems of a largely rural and agricultural country are never so complex as to call for the applications of such methods. I believe that this is a fallacy. Certain resources are relatively scarcer in a country that is little industrialized than in countries with a more balanced economy, and it is of great importance that these scarce resources be utilized with the greatest possible efficiency.

An incidental reference has already been made to the need for improving procedures in statistical surveys and censuses.

Research on the behavior of respondents to questionnaires and of interviewers, and on related problems, will be required in this connection. Reliable and systematized information on these subjects is scarce anywhere, and whatever small amount exists is often of not much use outside the country or the region of the world where it was obtained, because its validity depends so much on background social traditions and usages. These fields of research seem to present the statisticians of the Philippines with an opportunity for making notable contributions to knowledge which will be of service not only here but in many other Asian countries. The Statistical Center, as a research institution, could take a useful part in such work. This is an example of operational research concerning, as it were, the domestic problems of the statisticians. Several other examples can be given that are of immediate interest in this country.

Efficient fertilizer utilization (I am not referring to the experimental selection of fertilizers), rural irrigation schemes and their influence on soils, transportation problems, city traffic, relation between food production and population growth, all are problems of importance here. Statisticians can help in the solution of these problems, and they will undoubtedly be called upon to do so in the years to come, as they become available in greater number.

I might also mention in concluding this review that *electronic computers* are expected to be installed in this country. Wherever such equipment has to be imported and therefore calls for the utilization of scarce foreign exchange resources, and where labor is relatively cheap and abundant, it seems to me that it would be rational to plan for a joint utilization of those powerful machines by as many Government agencies as possible with two or three shifts of staff per machine. Statisticians are well prepared to equip themselves with a knowledge of the theory of *automatic computation*, including computation programming and also the wider problems of *cybernetics* which is the theory of commands and communications formulated in terms of probabilities and of statistical mechanics. I hope that some graduates of the Statistical Center will be tempted by these

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fields of scientific and technical endeavors, which are definitely related to the perspectives for development of statistics in this country. Though I do not know whether they enter the perspectives for the next five years or for a longer range of time, I believe that the first possibility is the more likely.

Problems in Statistical Education Related to the Development of Statistics

Survey of the Needs. Throughout the first part of this talk, frequent references have been made to the dependance of the future progress of statistics in this country on the availability of professional statisticians on the one hand, and on the diffusion of some statistical knowledge among non-statisticians on the other hand. Findings in those respects will be brought together, and made more specific in the next few paragraphs.

There are extensive needs, in the Government service particularly, for professional statisticians broken to the problems of statistical programming, organization, standards, operational procedures, and of statistical theory as applied to the design of sample surveys and estimation from their results.

No less important are the needs, in the Government service and in private organizations, for professional statisticians with a knowledge of statistical theory and its applications to the analysis of statistical data generally collected through observation.

In most cases, the statisticians considered in the last two paragraphs will specialize in a particular field such as population statistics, economic data and national income estimates, health statistics, crop statistics, etc. They will need a thorough knowledge of the data with which they are concerned, the peculiarities of their collection, the causes of unreliability to be watched, the nomenclatures used in their classification, the problems arising in their comparisons with data from other countries, the principal uses to which they are put. At the higher levels at least, these statisticians ought to have a knowledge of the discipline related to their statistical specialty, for

example demography in the case of population statistics, economics in the case of economic data or national accounts estimates.

There are needs for some professional statisticians especially competent in statistical theory and its applications to the design of scientific and technological experiments and the analysis of their results. It is very desirable for the experimental statistician to be well acquainted with the discipline concerned with the subject-matter of the experiments on which he works, for example agronomy, genetics, medicine, psychology, physics, engineering, etc. Familiarity with this discipline enables the experimental statistician to make more valuable contributions to the preparation of the work programmes of his research laboratory or experimental station, and places him in a better position to help his non-statistician colleagues in solving many quantitative or mathematical problems often concerned with the joint utilization of results from more than one series of experiments and of data obtained through observation. Furthermore, experimental results often have an economic utilization. A sense of economic questions will, therefore, often be useful to the experimental statistician by enabling him to understand the problems of the economists and how better service can be given to them. A well-rounded statistician is generally better prepared for establishing fruitful collaboration with economists and economic planners than are most other scientists such as biologists, psychologists, physicists, etc.

Some professional statisticians are required for the application of statistical theory to problems arising in quality control, operational research in its various aspects, market research. It is clear also that statisticians are well placed to take an interest in several disciplines where quantitative data are important (for example, demography, economics) or which are largely applications of probability theory, such as actuarial science and cybernetics, to cite very different examples.

Last, but certainly not least, professional statisticians are needed to teach statistical theory and the principles of statistical administration, to give at least the more advanced instruc-

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tion in the use of statistical methods and data in particular subjects, and to develop research in statistical theory and in methods of statistical operations.

The words 'professional statistician', as they have been used in this paper and particularly in the immediately preceding paragraphs, refer to persons having received, at University or equivalent level, a thorough and broad fundamental preparation to different aspects of statistical work, although they may be more specialized, or interested, in some of these aspects. Obviously, various levels of professional statistical qualifications may be attained by an individual. According to these levels, to experience, age and ability, different persons qualify for different grades of posts in the Government service or in private employment or practice, although they may all be professional statisticians.

While the training of professional statisticians is an essential purpose of statistical education, it is not, as we have seen, the only one. It is most important to dispense to many persons outside the statistical profession some elementary statistical education, so as to familiarize them with the principal sources of statistical data that are of interest to them and with simpler methods for using these data correctly, and also to give them a better appreciation of the need for consulting well trained statisticians when their problems require the use of more difficult methods.

These are the principal needs for which statistical education should provide in the Philippines. As you know, on the side of statistical education so conceived, there is room also for useful forms of on-the-job instruction, in statistical skills required for specific and immediate applications, for the benefit of those performing statistical work, whether they have or not received more fundamental education in statistics.

Some Problems in Statistical Education. In all countries, statistical education raises unsolved problems, not only because the demand for statisticians tend to outgrow the supply, but also because it is not possible to draw on a long experience in this field.

Not many years ago, in the few places of the world where statistics were taught, it was in almost every case as ancillary methods of research in some field. This led to very particularized, and generally incomplete, forms of training. The Institute of Statistics created in 1922 at the University of Paris represented one of the first endeavours to provide systematized statistical education in a form suited to the requirements of several disciplines.

Mostly during the last twenty years, several occurrences have taken place which must be taken into account in the consideration of problems of statistical education.

There has been an extremely rapid growth in the amount of official statistics collected and published in most countries. In many instances, the quality of the data has been much improved also. These developments have increased the needs for statisticians in the offices collecting statistical data. They have also provided much more abundant materials for statistical analysis. It is therefore not surprising that systematic research should have been undertaken into the principles of efficient Government statistical organization and operations; this was largely a result of comparative analyses carried out by international organizations. At the same time, successful applications of statistical methods have become common in an almost undescrivable variety of fields of knowledge, of which we have mentioned some examples. The theory itself has developed from rudiments elaborated by a few scientists, generally for particular purposes, to an impressive body of knowledge of wide applicability, which is constantly being improved further by teams of researchers. Statistical journals have expanded, some large textbooks and scientific dictionaries have been published, and manuals of various levels of profundity are now available in numbers.

Correlatively with these developments, trained statisticians have gradually come to make a career as such, more and more frequently, though not necessarily always in the same form of statistical activity.

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As a consequence of this evolution, the need has been felt for systematizing statistical education. It has been recognized first that, to make a career as a statistician, it was necessary to be capable of applying statistical methods in different fields and therefore to possess a knowledge of the fundamental of statistical theory. Experience has also shown, in several countries, that prospective professional statisticians, or most of them, should be taught the principles of statistical administration, although this is a point on which the statistical education provided by the Universities of some countries, including the United States, is incomplete. Lastly, it has been realized that a competent statistician needs a really intimate knowledge of the detailed problems met in gathering data and utilizing them in one or more particular fields.

Integrated facilities for giving this comprehensive and balanced statistical education are available in very few places. The Statistical Center which you have created in Manila is one of them. It is operating at a higher intermediate University level, preparing graduates for Masters degrees in two years of full-time studies or their equivalent.

I believe that the several members of this Association who were promoters of the Center have solid reasons to be proud of it. The value of the University training given at the Center is now recognized in the country. I am sure that gradually, as it is befitting in such matter, the Center will also establish its reputation abroad, particularly in the region surrounding the Philippines. As you know, the offering of professional University education in statistics is not the only activity of the Statistical Center. In-service training sessions are held with the more modest but useful aim of improving the immediate effectiveness of government staff performing statistical work or for giving a statistical initiation to administrators. Conferences in business statistics are designed to meet the needs of businessmen and their employees who have to use statistical data. The services of the Center also are available to Government departments and private parties for consultations in statistical matters, and it has begun to develop its research activities.

But even with the Center, all the problems of statistical education in this country are not solved.

For example, there is need for more and better ancillary courses in statistics, for non-statisticians, in the various departments of the University of the Philippines and of the several other Universities and colleges of the country. The Center alone cannot meet this need; but, as indicated earlier, it could take a lead by assisting other institutions to give sound ancillary courses in statistics or in improving courses which they may already be offering.

At the other extreme of the scale, as it were, it is necessary to provide a statistical education at the highest possible level available in the world to some at least of the Philippine statisticians, particularly those who will make a career as University professors of statistics, lead research or occupy foremost positions in the statistical profession, either as members of the Government service or in private employment or practice. In view of the small number of persons at present equipped to benefit from such very high-level statistical education, and interested in receiving it, it would not be economical to provide it here for the time being. It is however important that opportunities be available, in the form of fellowships, for acquiring such education abroad in Universities or schools in America, Australia or Europe. The time required for these studies may vary in each individual case, but it would normally extend over a period of two to four years. Sometime in the future, there may be a need for providing statistical education at the doctorate level in Manila, and the Statistical Center may then be in a position to offer the necessary preparation. This possibility may well not concern the next five years. Nevertheless, it seems not inappropriate to mention it in concluding a paper on the perspectives for the further development of statistics and statistical education in this country.

If I may ask your indulgence for a few more seconds, I should like to anticipate a question. Perhaps, some of you may have found that my perspectives for the development of statistics in this country were somewhat optimistic. In answer to

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such question, I should reply that I have endeavored to be realistic. My hopefulness derives from the devotion to hard work, industry and resourcefulness, that I have observed in so many of those associated with the Statistical Center and with the statistical services of the Philippines. These women and men will make the perspectives come true.

On this thought, I wish to end and renew the expression of my appreciation for the honor you have done me by your invitation to give this address.

