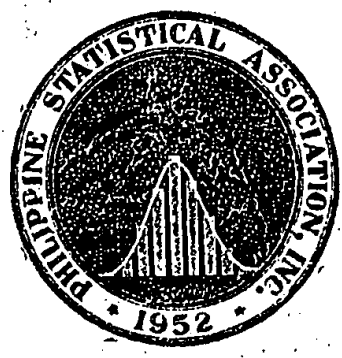
The Philippine Statistician



December 1956

VOL. V NO. 4

Entered as Second Class Mail Matter at the Manila Post Office on August 25, 1953

THE PHILIPPINE STATISTICIAN

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Published Quarterly

by the

Philippine Statistical Association
Incorporated

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Annual Subscription — Four Pesos — One Peso per issue
Philippines and Foreign Countries

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Office of Publication
378 Buencamino, San Miguel
P. O. Box 3223, Manila

THE PHILIPPINE STATISTICIAN
Official Journal of the

Philippine Statistical Association
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CONTENTS

December, 1956

THE ASSOCIATION

MARKETING AND CONSUMER ANALYSIS

By

JOHN E. MOORE *

Marketing and consumer analysis, which is a subdivision of marketing research, has to do with the measurement of the extent of the market and consuming group and the determination of its characteristics. Market research itself is a very broad term which covers a multitude of sins. It includes the gathering and interpretation of all facts relating to the transfer and sale of goods and services.

Since many of the other speakers will discuss various phases of the uses of statistics for businesses and associations and other phases of Marketing Research, I will limit myself to marketing analysis with special emphasis on how it is used by a business organization. However, I should like to point out that though I mention business, the same methods can be applied to almost any organization be it a trade association, government bureau, hospital or civic organization. All, to some extent, provide either goods or services.

A person concerned with consumers or the marketing of goods or services wants to know all the facts concerning his consumers and his marketing outlets; that is, how large the market is, where it is, who composes the market and what type of product or service is wanted by his consumers. It is also essential to know what the trend of the market is and where his position is in it.

How is this information obtained and what does one do with it?

SOURCES OF INFORMATION:

I. *Internal Records* — The first source to examine is internal information, that is, information which you have available within your own organization.

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*Manager, Market Research Dept., Philippine Manufacturing Company. Address delivered at the Conference on Business Statistics, October 16, 1956.

Now, a great deal of *cost* analysis is done by almost every accounting department in any kind of institution. Practically any type of business with a good cost accounting section can say how much it costs to pack something in various sizes; what the relative costs are in the production, packing, transportation, etc., of different lines of service. In spite of this, however, many organizations fall down in attempting to determine the exact or even approximate costs of marketing, distribution and service to consumers.

There usually is a wealth of information in the records of almost all business concerns, trade associations, or other types of institutions, private or government, which can be used to improve services, selling or general knowledge upon which to base decisions.

For example, a research director of a large U.S. advertising agency told me that the first thing he does when called in for consultation with a business firm is ask them to get out their sales records. Then he asks the company to list its customers, ranking them in order, by size, so as to determine what proportion of customers accounts for 80% of sales. Then, another list is made starting from the smallest customer and going up the list until the company can see what proportion of customers accounts for only 5% of the total sales. After they have done that, he asks the people to determine how much loss they are taking on the smallest customers and how many, if any, of them show prospects of growing into profitable accounts. He stated that most of the time company executives are really surprised by this relatively simple job of sales analysis.

Sometime ago, a friend of mine asked me to help him with a problem in determining sales quotas for the various sales units in his company. Although I am not a specialist in sales analysis or the determination of sales quotas, I suggested he make a systematic breakdown of the sales of each of his product lines in each of the sales units. After doing this item by item, he discovered that one particular line sold only 10% as much volume in one unit as it did in the next lowest unit. I then suggested he run a quick informal survey to determine

whether his competitors were unusually strong in that area or whether it was just a bad salesman for that particular product. The conclusion he finally reached was that there was practically no market for that particular product in this one area and that they had been losing a great deal of business by insisting the salesman devote quite a bit of his time trying to make a quota for an unsellable item.

Of course, examining your own statistics has its limitations. If you are in business, you may be supplying your goods and services through the wrong outlets and in the wrong places and therefore, your own statistics would be biased in this respect. If you are a trade association, you may be obtaining or supplying information which does not fit the greatest need of your members. Therefore, through outside sources you will need to obtain information in order to understand the entire marketing or consumer picture.

II. *External Sources* — There are a large number of external sources for marketing and consumer information. I will list some of these now in the order in which they are most likely to be used and then give you some examples of how they are all tied together.

A. *Government Data or Statistics* — While this information usually is of a very general nature, it is often the best place to start. In many cases you may have to find out the size of your market or potential market by looking at figures on total production or importation. Since some of the other speakers will cover where the sources of such information are, I will not go into further detail.

B. *Trade Associations* — Unfortunately, such associations are not as well developed here as they are in other parts of the world and the amount of useful information available from them is limited. In some industries such as the sugar, mining and a few others, a great deal of information is available. However, in most trades this is not so and it is rather unfortunate.

C. *Publications* — There are a number of publications pertaining to certain industries and professions. For example,

the Insurance and Finance Magazine, the Philippines Trade Review, various mining publications and various professional journals, etc., publish specific as well as general information. Sometimes, they can save you a good deal of effort because they reprint a great deal of government and trade association information.

D. A very common source of information in the United States and one that is developed here to a minor degree is that of *professional marketing research organizations.* However, some of them publish regular reports and, in addition, will do special service for clients. Advertising agencies sometimes give this service also.

E. Well down towards the end of the list of steps for obtaining marketing information are *sample surveys.* The reason that they are well down towards the end of the list is that they are very expensive. Even these are broken down into a couple of sources, generally: dealer surveys and consumer surveys.

(1) In some businesses for example, the restaurant and/or liquor trade, dealers may be more important than consumers. But in almost all cases, surveys of inventories and stock movements among dealers are very useful and sometimes essential. What is more, calls on dealers represent a great deal more volume per call than an interview among individual consumers. Of course, you must be very careful in evaluating the information because dealers tend to color their answers when talking to suppliers. Nevertheless, in some type of survey such as continuing store audits, the information is much more accurate, and much more cheaply obtained than similar surveys among consumers.

(2) Close to the last step in obtaining information, we find consumer surveys. This is a thing most people think about when they are talking about marketing research or marketing analysis. Perhaps this is true because this is the most complicated phase in consumer analysis and something which, when done improperly, can

do more harm than good. This is the best, and sometimes only, source for reliable qualitative information.

F. The final step in obtaining marketing information, and this usually applies to the introduction of a new product or changes in old products or special promotions, is the *test market.* This is the practice of selling a particular product or service on a small scale in a small confined area. After all, the proof of the pudding is in the eating and the only way you will really know whether or not you can market something is to try to market it.

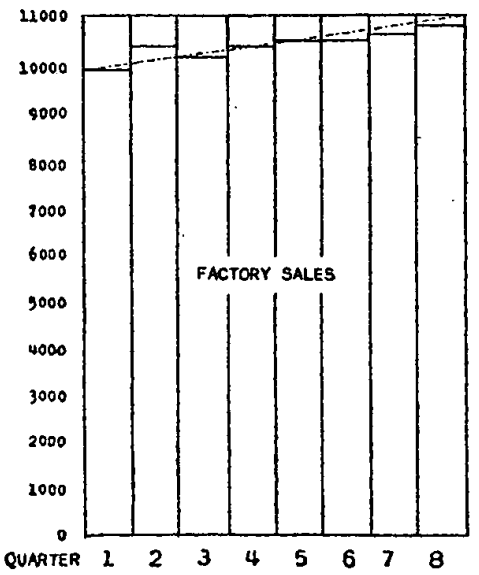
Now, how are all these sources of information applied in marketing analysis? Businessmen, especially sales executives, who have been in business for a long time, feel they can tell exactly how good or how bad business is by their sales. Often, this is true, but sometimes, it isn't. Let me take an example.

I use this case which happened in the United States because many market research services are available there and it is clearly documented. However, many, many similar situations have happened here. In this case, a manufacturer had a continually increasing sales trend from about 10,000 cases per month in the first quarter to almost 11,000 cases per month about 2 years later. This manufacturer had decided, on this basis, he would have to expand his plant. In order to determine exactly how much he should expand, he consulted a market research organization which was making regular periodical store audits in a number of products, one of which covered his field. (See Charts I—III).

The market research organization made a study of this particular field and then pointed out to the manufacturer that, while it is true his sales to dealers had been continually increasing, dealers' inventories had been increasing also. As a matter of fact, they had been increasing at a faster rate than sales so that the manufacturer's actual sales to consumers were dropping quite significantly. They pointed out to him that his problem was *not* one of *expanding,* but rather, of finding out what he could do to reverse his *declining* share of the market. This demonstrates that isolated internal information may be misleading.

I

SHIPPING CASES PER MONTH



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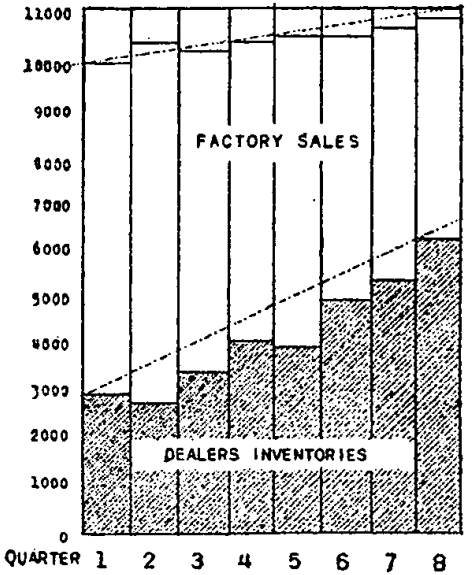
SHIPPING CASES PER MONTH



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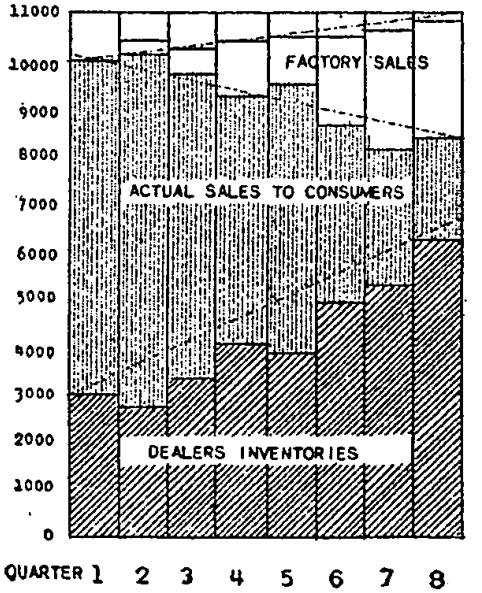
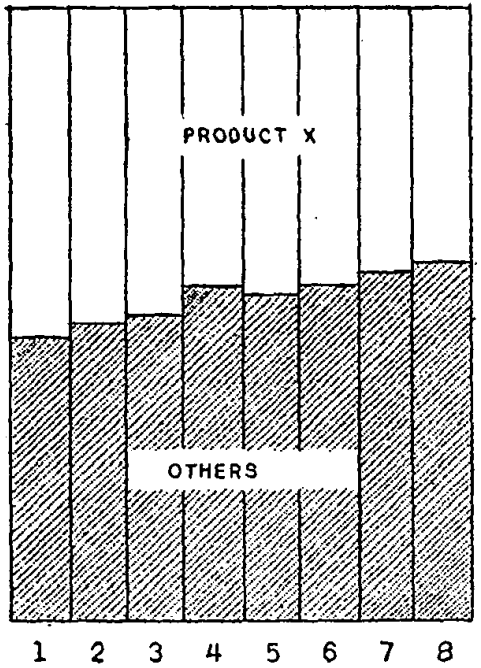


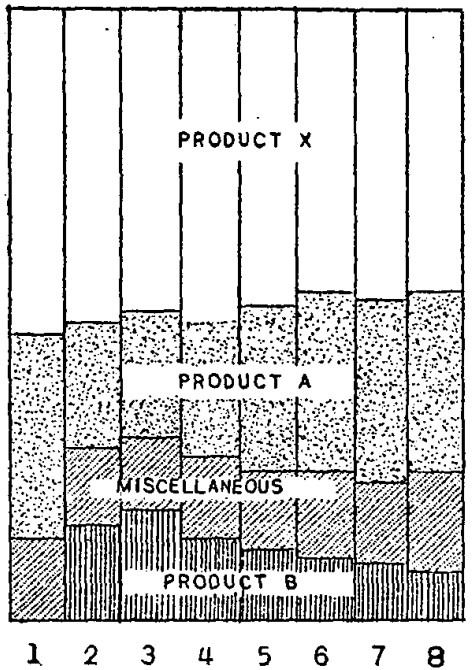
IV

SALES



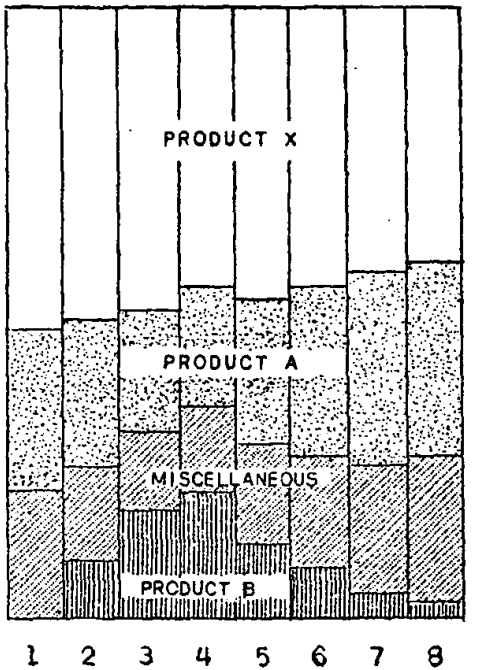
V

STOCKS



VI

SALES



Now, take a second example. This is a simplified version of a situation which happened right here to us. One of our brands, let's name it brand X, showed a slightly downward trend in sales (Chart IV). Initially, we felt that this was due to the introduction of a new brand by one of our competitors and the dealers' stock situation seemed to bear this out. (Chart V) However, by piecing together a lot of market research data that we had accumulated, we discovered that this was not true. As you can see by looking at Chart VI, the introduction of a new brand did have an adverse effect on our own brand and competing brands. However, the sales of this new brand soon fell off very rapidly. It was our old competitor, brand A, gradually increasing its share of the market, which really accounted for present decline of our sales. Once we were able to establish this, we were able to correct the situation. This latter example shows that even a combination of both internal and external sales data can be quite misleading if one of them is incomplete.

How then do we go about doing market research in order to piece together information? Of course, it is always necessary to avoid as much effort and expense as possible. Let me give you an example.

Sometime back, PMC decided to consider going into a new type of food product. I cannot tell you what it is because, if we can overcome some difficulties, it still is an eventual possibility. However, suppose I use the same case, real case, but change the product to a fictitious one, for example, sardines.

A couple of years ago, our Development people were approached by a person who had a new process for canning sardines and wanted to know whether or not we were interested. In brief, his process resulted in a much improved end-product. The sardines tasted entirely different from current products. They were similar in taste to fried, fresh smelts, a favorite delicacy at certain times of the year in the United States. The purpose was to give people a product that tasted like fresh smelts at any time of the year.

Some investigation showed that the sardines could be imported in bulk form and canned right here. Another factor

was that instead of being packed in olive oil or tomato sauce or other imported products, the sardines could be packed in coconut oil which would give us an opportunity to use a local raw material. Next and very important, the cost of the product would be somewhat lower than competing products. As a matter of fact, the whole project sounded so well suited for the Philippines that there was a strong desire to try the direct approach and simply go into production of the new product. You all have had some experience with the direct approach, sometimes it works and sometimes it doesn't.

Well, in the case of sardines, PMC avoided the direct method and went through the motions of a scientific approach to the problem. Therefore, we followed the steps I have already outlined to you.

First of all, we looked into government data and checked into the total importation of sardines and other canned fish. We found that the volume was substantial and confirmed our previous findings on the subject.

We could find no association of sardine importers. However, we informally checked with some food importers.

From an organized research company, we asked for any additional data they may have had on the importation of canned sardines and local production of canned fish.

We then did a quick survey among dealers and discovered that sardines sold as fast as many of our current products and in the same type of outlets. This made PMC ideally suited to handle this type of operation.

The only remaining step then was to find out whether or not the product was acceptable to Filipino consumers. Feeling quite enthusiastic about new products, we felt we were simply going through the motions when we tasted our product against an established leader in the sardine field. We did this by making a blind test among several hundred consumers. A blind test is a survey in which you give unlabelled products to consumers and ask the people to use them. Later you call back to get their opinions on the products.

To our great surprise and disappointment, we found out that consumers overwhelmingly preferred regular sardines. They had little or no interest in our wonderful new discovery.

Why not? First of all, they did not like the taste. While the fresh smelt consumers in the United States liked the new product, Filipino consumers, who were used to canned sardines, didn't like it at all.

Secondly, they didn't like the oil in which it was packed. It seemed this oil was thinner in consistency and did not seem as wholesome as regular olive oil.

Thirdly, they didn't like the color of the whole affair because it simply didn't look as substantial to them.

Well then, before building our new plant, we decided to experiment further. We found out that we could overcome the consistency and color problem of the new product fairly well. However, if we changed the taste of the new product to the same as that of imported sardines, we would have a product that was just like any other kind of sardines. What's more, by changing the consistency of the coconut oil and the color, and adding flavor, we found it increased our cost to a point where it would be the same or a little more than that of existing sardines. Therefore, we decided to postpone the whole project until a great deal more development work could be done by our Manufacturing people. Our market research in this case saved the company one and a half million dollars.

I hope that the above cases have demonstrated to you how a business concern can use consumer market research and internal marketing analysis. I believe that any business, government institutions or trade association can do the same type of thing. It is not always necessary or even desirable to go to the expense of having a market research department of your own or even hire other companies to do a great deal of research for you. Use of internal information and the study of secondary data from government, trade associations and publications can help a great deal.

I believe that present marketing and consumer analysis can be improved without a great deal of expense to the individual organization concerned in several ways.

First of all, all types of government statistics should be improved. There are some very good plans and programs under way to do this now, and I think that within a relatively short time, there will be much better statistical data available from the various government organizations.

Secondly, and this is part of the first, surveys such as "The Philippine Statistical Survey of Households" conducted by the National Economic Council earlier this year should be encouraged. As a matter of fact, the Statistical Training Center probably would be happy to entertain any suggestions for questions of a general nature to be included in their future surveys which may help your particular problems.

Thirdly, I believe that trade associations should be made stronger and should participate more directly in obtaining and supplying marketing information. I know this is difficult because of the lack of cooperation among people in highly competitive industries. However, it is surprising what can be accomplished when some one takes the lead in such ventures. For example, there are perhaps few industries as competitive as those represented by the radio broadcasting companies and advertising agencies in the Philippines. However, in 1950 a group of advertisers, agencies and radio broadcasting stations joined together in a cooperative survey. This resulted, about a year later, in the formation of a non-profit corporation composed of these business firms for the specific purpose of running surveys. This has not worked perfectly, of course. Some companies have dropped out, others have joined and there has been some friction. However, some 6 years later, the organization is stronger than ever. It now has an annual budget for running surveys and each subscribing member is able to obtain information worth from 5 to 10 times his annual assessment. I believe that with a little effort and cooperation, service of this kind could become the rule rather than the exception.

STATISTICS COVERING THE MANUFACTURING INDUSTRIES

By

FAUSTINO R. LOZADA *

The importance of statistics to industry has been succinctly expressed by Malcolm C. Rorty, onetime Vice-President of International Telephone and Telegraph Corporation with this statement: "Integrated large-scale production becomes hopelessly tangled when statistical controls fail to function. In fact, practically any large-scale production, trade, financial or other business operation, though it may fail for technical and economic reasons, will almost surely fail if its statistics are unreliable."

People in business and industry are increasingly becoming aware of a new concept which has been termed the most important (although least publicized) intellectual achievement of the twentieth century — *the statistical decision.* The process of arriving at a *statistical decision* is called *operational research.* An article in a recent issue of the Harvard Business Review stated that, "for the first time in history, as a result of the development of *statistical decision,* we can provide something like a comprehensive and practical answer to the question: Which one of the possible courses open to me should I take in order to achieve a specified goal?" This article defines *statistical decision* as "an integrated body of methodology which covers all phases from the collection of raw data to the final choice of a course of action." It is predicted that most managerial decisions will be made with the aid of this instrument.

The Industrial Development Center, in its principal function of promoting and assisting private industries, is constantly in need of statistics. In its implementation of the NEC-ICA program of financial assistance for the establishment or expansion of private industrial projects, IDC's evaluation of the economic feasibility of the proposals hinges principally on statis-

*Director, Industrial Development Center. Address delivered at the Conference on Business Statistics, October 15, 1956.

tical information. Two considerations which are immediately apparent are (1) whether there is present or prospective market for such products or services, and (2) whether such products or services could be made available at competitive prices.

Markets

The magnitude of the first problem may be gleaned from the fact that many books about market analysis have been written. From one of these it was stated that "a skillful analysis of data on population, purchasing power, customs of people, competition, transportation costs, etc., should precede any attempt to establish a new market."

In extending its assistance to both the dollar-earning and dollar-saving industries, the IDC perforce has to consider both the foreign and the local market. Of the two industries which have been given the biggest share of IDC aid, the plywood industry is directed towards the export market and is thus a dollar-producing industry, while the cotton textile industry which will produce for home consumption is a dollar-saving industry.

The markets for these two industries have up to this point been quite obvious and there has been no need for painstaking market analyses. Nevertheless, it should be pointed out that the principal bases for extending aid to these industries are the statistical facts that cotton and manufactures constituted the biggest item in our imports, averaging approximately ₱189.0 million pesos annually in 1953-1955, while plywood made from Philippine logs comprised 95 per cent of the plywood export of Japan to the United States. The Japanese exportation made up more than 50 percent of total U.S. imports.

During the present stage of our industrial growth, the principal direction has been toward replacing imported commodities with goods produced locally. This is distinct from the progress in the industrially-advanced countries which attention is mainly centered on new products. This distinction is pointed out to show that market analysis for the industries that are being established here is a relatively simple matter of determining the

consumption requirement, based largely on the importation pattern. Where some local production has been going on, this is taken into consideration in determining the local demand.

The use of the importation pattern, however, has its limitations and difficulties. One of these is the fact that with import and exchange controls, which in effect had limited the supply and raised prices of many commodities, the consumption of these commodities has been constricted. To use it blindly as the basis for forecasting the probable market, therefore, would be erroneous. Another handicap is the fact that for many commodities the available statistics are in aggregates which do not show the volume of distinct classes or sizes. The manufacture of these distinct classes or sizes may require the use of different processes or different sizes or types of machineries, all of which a manufacturing plant could not possibly include economically. A case in point is galvanized steel pipes, the manufacture of which appears prospective from the aggregate statistics available. For the period 1953-1955 the importation of this commodity average 12,984.2 tons, valued at approximately ₱5.954 million. This item includes the whole range of galvanized steel pipes from 1/2 inch to 14 inches or even bigger in diameter; all the types such as ordinary water pipes, steam or high pressure; and welded or seamless pipes. Another example is the case of insulated copper wire of which the imports of all kinds and sizes averaged 2,120.9 tons valued at ₱3.684 million for the year 1953-1955. This item includes all insulated copper wire imported, whether rubber coated or otherwise, whether stranded or solid, and all sizes from the copper wire used in armature windings to wires used in power distribution lines. These statistics do not show which of the types of insulated copper wire and which range of sizes are the most in demand on which a prospective manufacturer could concentrate his attention in studying the feasibility of a manufacturing plant.

A market survey would of course be helpful in the situation pictured. The Industrial Development Center has conducted a few limited market surveys. It has also enlisted the assistance of the U.P. College of Business Administration, which conducted a market survey for a private industrialist as a project of one of the undergraduate classes.

The assistance that the state university or other educational institutions can render for this purpose will be further investigated, and, wherever feasible, some working relationship established.

Another source of aid in this field now emerging in the business community is provided by private agencies which offer market survey or other statistical services. The IDC has been observing the activities of these agencies with the view not only of utilizing their services for IDC proper but also of recommending them to private enterprises for such statistical services as they are deemed competent to render.

As regards foreign markets, the foreign trade statistics of the countries or regions being considered are helpful. In such countries, it may be that there are studies which give forecasts of the future demand for particular commodities. One such study is that conducted by the Stanford Research Institute entitled "America's Demand for Wood 1929-1975." This study gives some idea of the future market for plywood in the United States. However, it does not furnish much information about what are the prospects of Philippine hardwood plywood in the United States market. The IDC expects to request the services of a competent market consultant firm to conduct a survey for this purpose.

Among the products that hold prospects of being manufactured in the Philippines for export are wallboard, charcoal, veneer, cassava starch, and salt, not to mention finished products from the raw materials that comprise the present major exports.

In additon to the use of foreign trade statistics and market consultants for the examination of the export prospects of these products, the assistance of our consular representatives in the prospective export markets is helpful, and resort to this source of information has already been initiated.

The analysis of the market for the products of a manufacturing plant necessarily includes the examination of the capacity of existing facilities for manufacturing these products. The information on the capacity of existing manufacturing facilities

is quite meager at present. The PHILCUSA publication entitled "Industrial Philippines: A Cross-Section," covering the results of a survey of ten essential industries, contains a more or less accurate estimate of the production capacity up to 1952 in the following industries: textile, pulp and paper, clay and ceramics, including cement, canning, rubber products, glass, chemicals, and leather tanning. It will be seen that there are many important industries that were not covered in this survey. Moreover, with the rapid growth of manufacturing industries during the past few years, the data in this report, in general, no longer hold.

The IDC is now at work to up-date the abovementioned report with a new industry survey, and is extending the coverage to other industries, particularly those that have shown growing vigor during recent years. Questionnaires are being sent out to particular groups of industries from time to time. It is intended that, from the results obtained in this survey, separate reports on the status of individual industries will be published. A sample of these industry reports is the mimeographed pamphlet on the plywood industry, a few copies of which are here for those who might be interested.

The Central Bank, in exercising control of the importation of production equipment and raw materials and supplies, is greatly interested in obtaining information about existing industries. The form that they require producers applying for dollar allocations to fill provides, among many other questions, for data on capacity and production. The IDC makes use of the Central Bank statistics on these important points.

Cost of Production

In analyzing the probable cost of production that is presented by the applicant for financial assistance, the IDC needs to check on a great number of factors. Among these are capital investment costs, cost of raw materials, labor, fuel, power, and other physical facilities, interest rates, taxes, transportation costs, sales and distribution costs.

The competitive position of the locally manufactured product is shown by a comparison of the price at which the local

product could be sold with the price of the similar imported product.

The interested investor would obviously make his own analysis of the market and probable cost of the product he wishes to manufacture similar to the one followed by the IDC in examining projects applying for financial aid.

Examination of Desirable Industries

A very important phase of the IDC program is the determination of the industries that hold promise of successful operation. Various approaches to this problem have been suggested. One of these is to start with the examination of the commodities that are being imported in large quantities. Having singled these out, it is next in order to determine whether a plant could be economically set up to produce the quantity of the commodity for which a market is expected. As no local experience as to the size of the minimum economical plant most likely would be available, statistical information from producing countries have to be found. The availability and costs of the factors for production are then analyzed and, from all the information gathered, the economic feasibility of the possible manufacturing project is determined.

The other approach is to start with the examination of local resources and determine what use may be developed for them. The defect of this method lies in the fact that the information about the local resources are oftentimes meager or lacking. In many cases, no detailed investigation has been made of the location, quantity and nature of these resources. It is likely also that little or no research has been done on the potential use of local raw materials. Therefore, no inventory of these resources could be made which would be immediately usable in determining the industries that could make economical use of them. Other important facts that are difficult to obtain are at what cost the local raw material could be made available to the manufacturer and whether a steady supply to assure continuous operation could be assured.

In comparing the applicability of the two approaches briefly described, it is observed that the industrial development in

the Philippines during the past few years has been markedly towards producing the previously imported commodity in the shortest possible time, irrespective of the source of raw material. It is also observed that the manufacturing usually starts with the production of the final product, using imported semi-finished goods or processed raw materials. Gradually, the industry is evolved down to the local manufacture of the processed raw material and still further carried down to making use of the basic raw material locally available.

One striking exmple of this evolution is the case of the cotton textile industry. It started with the production of knitted goods using imported yarn. Then the yarn was produced here from imported raw cotton. Now projects, including private ones, have been established to produce the raw cotton locally. The industries producing steel bars and other simple iron products are also gradually working towards the smelting of pig iron from local ore.

That this process of industrial growth has taken place may be explained by the fact that generally the production of the final product is more simple and less costly and that the market for it is already there. To start with the raw material it is necessary that all the successive stages in its processing into the form it is ultimately used be established. This very often means separate production lines and, more likely than not, the minimum economical size of operation of each of these is bigger than the immediate requirement for the product by the next production line.

Lest the analysis of the industrial evolution in the Philippines which was briefly described be taken for a digression from the subject of statistics for manufacturing industries, it will be quickly noted that underlying this evolution are statistical facts which, when painstakingly assembled, would serve to explain the phenomenon.

Factors Affecting Climate for Investment

Brief mention has been made of the general economic factors, such as costs of labor, power, fuel, interest rates, taxes, etc., that affect the cost of production. The prospective in-

vestor with no particular project in mind, but with some financial resources at his command, wants to study the local climate for investment, particularly, as it compares with other countries. This includes such questions as: How high are wages? How skilled or adaptable is labor and what is its temper? What is the cost of power and fuel? What are the transportation facilities and what do they cost? What are the prevailing distribution costs? What is the tax policy and what is the tax rate?

The answers to the above questions and those on other important basic considerations are needed by the investor in deciding whether or not to invest.

The sources of information on these points are many. A comprehensive single volume is the pamphlet issued by the U.S. Department of Commerce entitled "Investment in the Philippines." There is a lengthy report prepared by the Philippine Association entitled "Facts and Figures about the Philippines." The annual Reports of the Central Bank and its periodical publications are also helpful. In addition, the leading daily newspapers publish yearbooks in which much useful information is included. There are also a number of publications of useful information and facts about the Philippines such as the annual "Statistics Handbook of the Philippines" of the Bureau of the Census and Statistics and the booklet about the Philippines released by the National City Bank of New York.

The Industrial Development Center gathered in its library all of these publications for ready reference by industrialists. It is also preparing handy, readable pamphlets containing new data and information of interest to investors.

Statistics for Day-to-Day Operations

The manufacturer needs statistical information for his day-to-day operations. Briefly stated, his task consists in determining the factors that are beyond his control and those that he can control. He then manipulates the factors under his command so as to take advantage of whatever is the measurable behaviour of those factors over which he has no power. This process holds true from the business point of view as well as from the production point of view.

From the business point of view the usual goal is to be able to produce a marketable commodity or service cheaply and be able to sell this at a profit. From the production point of view the manufacturer generally aims at getting the desired return from the factors of production and being able to deliver the product in the form that it is needed within a certain period of and at a certain point in time. It should be said that, actually, the means of achieving these two goals are not entirely separate and they even fuse into each other.

The usual business management tools like budgeting, scheduling, cost control, inventory control, and what have you, are likewise essential to the manufacturing enterprise. Indeed, to the manufacturer these present more difficult problems not only because of the fact that the items he has to consider are more numerous but also because they are more complex.

Here again, and emphatically so, statistics are necessary tools. To be able to know how much materials, supplies or services he should buy or keep at a certain time; the price he should pay for these and from these or vice-versa; to be able to tell how much product he should put out, when, and at what price; all these questions can be resolved only, through the use of statistics, whether their use be conscious or unconscious. The IDC is promoting the use of modern concepts and methods of business control as they are applied to manufacturing establishments. This activity comprises one of its major functions.

From the production point of view, the ultimate aim is to be able to achieve the desired degree of production efficiency. There is a term for it that has recently gained worldwide usage. This is *productivity*. It is said that in the non-English speaking countries of Europe where the concept of *productivity* is new, they have actually coined a new word using the appropriate phonetic translation of the word, productivity.

With the acceptance of the productivity concept there has developed a field of statistical study called *productivity measurements*. Although this field is barely a decade old, there is already a great amount of creative thought that has been devoted to it and the mass of literature on the subject is accumulating.

There is varied opinion on what should be the basis and terms on which productivity should be measured. It seems, however, that the most convenient unit of measure that is generally used at present is output per man-hour, although the worker may play only a minor role in the production.

Productivity measurement is intended to be the statistical means of production control. In its application, it would include the detailed analysis of the factors of production, and the use of this analysis in production control.

Without delving too deeply into the theory or methods of productivity measurement, the IDC has been actively promoting productivity in Philippine industry.

In closing, it should be said that there is a lamentable lack of statistics here upon which everybody concerned in the country's industrial development effort can make statistical decisions, be it the interested investor or manufacturer who wants to establish a factory or expand his operation, the bank which has to decide on whether to give a loan, or the government agency which is called upon to extend assistance or exercise authority of some form or another. While there are many difficulties that hinder the rapid development of statistics for business or industry, eventually they must be made available. The series of sessions (of which this is the first) on business statistics sponsored by the U.P. Statistical Training Center, the Philippine Statistical Association, the U.P. College of Business Administration and the Philippine Chamber of Commerce is a happy step forward.

PRODUCTION STATISTICS OF BASE METALS

By

JOSE ROBLES*

The Philippine Mining Industry in its various phases, represents one of the country's basic and important industries. However, it finds more expression and significance as a nationalistic enterprise when it is treated in relation to its contribution to the up-building of sound national economy and to the amelioration of the country's various acute and pressing problems.

One aspect of the Philippine Mining Industry which needs to be looked into with more serious understanding and consideration, is the Base Metal Mining which, through the past years, has maintained its importance in terms of mineral production and exportation of the Philippines. Base Metal Mining, which is engaged in the exploitation, development, production and exportation of basic minerals such as copper, iron, manganese, chromite, lead, zinc and other minerals, has two aspects to be considered: One, in which the management and control are in the hands of foreign investors, and the other, wherein Filipino producers have complete management and control. Although base metals have lower commercial value than gold and silver, they have maintained their role in the contribution to the national income and in the preservation of the country's dollar income and reserves. Time and again, the base metal mining industry as a 100% dollar-producing enterprise, has preserved its position as an important balancing factor in the cycle of trade and commerce and in the uncertainties of international reserves. From the Mineral Production Statistics as compiled by the Philippine Bureau of Mines, it can be gathered that the base metal production of the country has enjoyed a marked yearly increase. In this regard, it is interesting to note that for several years, the base metal production outranked the gold and silver in yearly production to nearly double. Total production of base

*President, Filipino Mineral Producers' Association. Address delivered at the Conference on Business Statistics, October 15, 1956.

metals in terms of pesos, for the period from 1946 to 1955 is ₱356,663,804.00 whereas, for gold and silver for the same period is ₱311,964,162.00. For 1955 alone, base metal production reached ₱75,599,021.00, while gold and silver production totalled only ₱44,713,774.00. Comparative yearly production of base metals since 1946 to 1955 show a steady increase, with the exception of 1953 and 1954 in which period, there was a slight decline from the production of the preceding year, 1952. This slight decline can be attributed to the lull in the market for base metals and of the low prices in the world market during the said period. However, the present demand in the market and the noticeable upsurge of prices for base metals, are clear indications that production and exportation for these ores will reach an all time high for this and the following years.

Another present-day indication of the bright prospect for the Base Metal Mining Industry is the growing world demand for base metals as strategic materials needed in the vast defense outlays of nations.

IMPORTANCE OF THE BASE METAL INDUSTRY FOR THE PHILIPPINES AND FOR ALL COUNTRIES HAVING THE SAME STATUS

The importance of the base metal industry in relation to its direct and indirect effects on the progress of the country may be enumerated and considered:

1) —*in its contribution to the earnings and preservation of the dollar reserves of the country.* — As a 100% dollar-producing and dollar-saving enterprise, the increase in production and exportation of base metals will mean dollars earned and conserved for the Philippines.

2) —*in the solution of the acute unemployment problem.* —The base metal industry counts with the employment of numerous laborers and consequently benefits a big number of dependents. Presently, there are still many mining properties which are not in actual exploration and development but, if these non-producing mineral properties are given adequate attention and assistance in order to start and carry on their development and production work, it will undoubtedly redound

to the benefit of a bigger number of unemployed persons and their dependents.

3 — *in the implementation of the Road Building and Social Amelioration Program of the Administration.* — The growth of more base metal mining enterprises will bring about the building of more roads, bridges and piers in remote places of the country which otherwise, would not invite attention and concern. According to statistics of the Bureau of Mines, the total area of developed mineral lands of the Philippines is 12,333.33 Hectares or .0414% of the total land area, whereas, the total area of mineral lands located and applied for but not yet developed is 1,444,725.93 hectares or 4.86% of said total land area. The existence of more roads and bridges in the remote places of the said undeveloped areas, will result in the promotion and enhancement of closer trade and social contacts among the people. At the same time, it will save the government the effort, trouble and funds for these projects.

4 — *in its relation to the industrialization of the country.* —If the Philippines really embarks on its industrialization program, the necessity for the establishment of smelting plants to absorb our production of raw ores will arise. Production of ores will then be bolstered because, besides exporting, we can utilize the raw ores for processing and conversion into pig iron, ferro-manganese, and ferro-chrome. Then, industrial factories to utilize these processed materials for the manufacture of finished products will have to be established. In this way, more dollars will be saved for importation, there would be numerous openings for unemployment, prices for our mineral exports will be higher, more revenue for the government will be earned and the importance of the Philippines in the mineral world will be enhanced.

THE GROWTH OF AN ASSOCIATION OF SMALL FILIPINO MINERAL PRODUCERS TO PRESENT A UNITED FRONT IN THE BASE METAL MINING INDUSTRY OF THE PHILIPPINES

Guided by the good effects just enumerated and, above all, by that desire to work with freedom, the few who have

chosen to exploit the Mineral Industry as their part to play in the development of their country have felt the sting of hard times and depression. Conditions among the small Filipino base metal producers had assumed such dismal proportions that, in order to survive, a group of independent Filipino producers who owned and operated base metal mines throughout the country conceived the idea of banding together into one organization in order to present a united front in their struggle for self-assertion, and in their desire to remain independent and free enterprisers and furthermore, in order to gain a permanent foothold in the Mining Industry of the Philippines. This group of small Filipino mineral producers is now known as: "THE FILIPINO MINERAL PRODUCERS' ASSOCIATION" (FIMPRA). The growth of this Association may consequently result:

1) To help the Government in the solution of the problems of unemployment;
2) To create potential sources for dollar earnings, conservation and its increment;
3) To implement the barrio-to-barrio road building program of the Government;
4) To foment other phases of industrial enterprises;
5) To ameliorate the economic situation of the people living in the remote towns and barrios;
6) To achieve a foothold of stability for Filipinos in the Philippine Mining Industry;
7) To contribute in the up-building of a sound and stable national economy.

As a composite group of small Filipino mineral producers, the FIMPRA has asserted itself with tenacious determination in seeing that the big portion of the country's mineral resources remain in the hands of Filipinos. This can be easily carried out if the government would give them a hand in financing the operation of their mining properties. The path towards their aim of self-assertion is rough, but despite tremendous odds and gigantic obstacles confronting them, they are working and contributing their modest share in making the industrial and economic revolution of the country a reality. With

the fatherly assistance given by our Government to all industries (except the Base Metal Mining Industry) and because of the growing odds and obstacles confronting them due to the march of time, the members of the FIMPRA could no longer go on without asking for assistance from our Government in order to attain their objectives.

MOST URGENT AND PRESSING PROBLEM CONFRONTING SMALL FILIPINO MINERS PARTICULARLY, THE FIMPRA

Now, the problems of the small Filipino mineral producers are varied and numerous, but FINANCING is still the most urgent and pressing. The Mining Industry, being engaged in the extensive exploration and exploitation work in the extraction of minerals from the earth, its phases of activities are so varied and complicated. The investment required, in order to make the operation a going concern, is considerable. The small producers, therefore, limited as they are in their capitalization, are forced to resort to the odds and ends of securing additional funds to carry on the exploration and development work, even before they can produce. What usually happens is that, after starting exploration work, the small producer has to stop operation or make negotiation with the big established producers for the operation of the mineral property or the sale of the ores even at a disadvantageous position, in order that he can save what little investment he has made and in order to continue producing. The other small producers who are fortunate to have some collaterals, mortgage their properties for loans, even with exhorbitant interests, or sell their properties in order to carry on their mining ventures. It is therefore, sad to say that the small producers, despite their desire and efforts to make a headway in this vital industry, are being left alone to carry out the gigantic task of tapping and exploiting the country's rich mineral deposits without the backing from sources that ought to extend, not only moral encouragement, but also material support.

Time and again, these small Filipino producers have approached banks and other financing institutions and the government, for financing aid. However, due to the strict and

rigid regulations embodied in the charters of these institutions in the procedure for granting loans on mining ventures which usually, involves the putting up of real estate collaterals as security for said loans, the assistance being sought could not be given constructive implementation.

It is noteworthy to mention here the gigantic job that the United States Government is doing to protect and support the small miners. About 6 years ago, the U.S. Government started its mineral exploration program under the Defense Minerals Exploitation Administration (DMEA), a government project devoted to the assistance of small miners in their mining ventures. Under this project, a small miner, from the time of discovery of a mineral deposit, is extended financial aid by the Government. That is, upon location and after a government mining engineer or geologist examines the property or mineral location and finds the same worthy of further discovery and exploration work, government financing is made available which is payable in royalty. In this way, the small miner, from the very start of his venture, is already given the necessary incentive and encouragement to pursue his project to further development. After a successful exploration activity, the DMEA still continues their assistance to the small miners in the form of aid in the cost of production of the operation, if after the appraisal of the work done, further aid is warranted. The Government, in turn gets paid by percentage royalties when the project is already in its productive stage. The July, 1953 issue of the "Engineering and Mining Journal" (page 150A) mentions and explains such operation.

Now, a question may be asked — Can this project or a similar one be undertaken by the Government here in the Philippines? The speaker is of the honest opinion that a similar project, with the same objectives and principles, can be easily undertaken by the Government if only it realizes that, for a highly mineralized country, like the Philippines, economic growth and industrial development largely depend on the exploitation and development of its metal and mineral wealth. It would surely be a great relief to see that the small miners are given a break in this vital industry of the country. And

such assistance would undoubtedly help restore the faith lost in the mining ventures and finally encourage local investors.

LACK OF INTEREST OR SHYNESS OF PRIVATE INVESTORS

In view of the amount of money involved in undertaking a mining operation and in bringing it into production stage, the usual practice is to secure adequate capitalization by creating a company or corporation, so that funds could be raised by the sale of shares of stocks. But, at the moment, this is a hard thing to do because the public is rather shy and would not dare invest their money in mining ventures due to the sad experience the investors had with the mining crash and speculative ventures before the war. The speaker believes that at the moment, if we would want to develop a mining property, we have to resort to private means and facilities to take the initiative. Therefore, in order that a mining property can be made a good producer, we have to resort to personal sacrifice, individual efforts and ultimately to the procurement of funds by borrowing, mortgaging or selling of private properties. These are the reasons why we have come to the Government for assistance in the form of LIBERAL CREDIT FACILITIES. In this way, the small producer hurdles what is probably, the barrier to investment in mining — of a shy-investing public. As a result of the sad experiences in mining speculation and the financial crashes in the stockmarket before the war, private investment in mining ventures has gradually bogged down to a low level because from that time on, the word "mining" has been closely associated and connected with the word "speculation," and therefore dubbed as a "risky game of investment." It is regrettable to say that this erroneous philosophy and false impression of the public about the mining industry has retarded the growth of this basic industry and has caused the non-acceleration of the country's progress and stability. As what a manager of one mining venture says, "We have to sell the basic importance of mining to the community." There is truth in this statement. The confidence of private investors must be won again, and this can be achieved through honest individual efforts in

developing and creating sound mining enterprises, worthy of public trust. This noble objective is the guidepost of small Filipino mineral producers, like the members of the FIMPRA, in their struggle for self-assertion. But, with their limited means and funds, these small mineral producers see no other alternative but to turn to the Government for assistance, not in the form of subsidy nor free assistance, but which is mainly in the form of liberalized credit facilities.

At the present, the following can be pointed out as possible sources of financial assistance to small mineral producers:

1) *THE PHILCUSA-GUARANTY LOAN FUND*: — Indirect assistance is made available within the scope of the Philcusa Guaranty Loan Fund in the sense that, it only serves to guarantee a certain percentage of the loan granted by financing institutions. Under the set-up, the applicant for loan has still to reckon with the strict requirements on collateral securities in order for him to be able to obtain the benefits of long-term loans within the scope of the Philcusa Guaranty Loan Fund. For the small mineral producers, said requirements for collateral securities are indeed difficult of compliance for the simple reason that, they either have no collaterals to be offered as security or have already exhausted all their available properties during the early stages of the mining operations. In order therefore, to remedy this seeming fallacy in the Philcusa Guaranty Loan Fund set-up, the following are suggested in order to bring about the constructive and effective implementation of said Fund in pursuance to the real purpose for which it has been created:

a) The valuation of potential mineral deposits duly determined by competent authority, for this matter, the Bureau of Mines, should be accepted as collateral security or at least a part thereof, in the consideration and approval of loans applied for, or

b) Make the Philcusa Guaranty Loan Fund directly available for loan assistance instead of just being a guaranty for a loan secured from financing institutions. In this way, it

will be converted into a direct source of assistance to well-deserving enterprises as is the case, with the Base Metal Industry.

2. *REPARATION PAYMENTS FROM JAPAN* — Small base metal producers can share in the fruits of the reparations payments if they are given by the Government priority in the procurement and allocation of mining tools, equipments and machineries necessary in their mining operations.

3. *LOAN AGREEMENT WITH JAPAN* — This could be a very good source of financial assistance to small mineral producers in that, adequate financing for mining operations could be secured under long-term loan contracts and with more liberal requirements.

4. *PORTS-WORK FUND* — This fund is available for the construction of piers in strategic places which can be near mineralized areas. This will also give a big boost to the small producers because with the limited capital that they have, they simply cannot afford to construct such piers to facilitate the loading and exporting of their ores. Under the present situation, the small mineral producers, in order to be able to load their ores, have to agree to sometimes unreasonable pier charges and fees of some private pier owners. With the construction of more piers in strategic mineral places, the small producers will be unburdened with so many problems connected with the loading and exporting of their mineral products.

5. *INDUSTRIAL DEVELOPMENT CENTER (IDC) FUNDS* — This can also be a source of operating funds for small base metal producers.

6. *BARTER PRIVILEGES* — Barter privileges can be a source of facility, but since barter procedure requires actual exportation first before the corresponding import privileges are allowed, it cannot be considered as a direct source of assistance.

NATIONALIZATION OF THE BASE METAL MINING INDUSTRY

In the issue of Nationalization of Industries, the Mining Industry, Gold and Base Metal Mining, must above all, be taken into consideration. The nationalization of an industry can be achieved in several ways. There is either the complete exclusion of foreign investors from engaging in a particular trade or business, or alien vested interests in established business are respected and the ban is applied prospectively. During the past few years, the Government has undertaken steps toward the nationalization of our vital industries for the purpose of giving protection to Filipino Investments and in order to dispel the possibility that eventually, the Filipinos will be left out in the management and control of industries which are rightfully and exclusively for our own beneficence. For the Base Metal Mining Industry, neither of the cited ways of nationalization would be feasible, if the progress of the country in terms of economic and industrial development is considered. Nationalization of this vital industry can likewise be achieved by the growing national consciousness of our people and of their awakening to the truth that the exploitation and development of our country's abundant natural and mineral resources MUST be in their hands. The Government, on its part, must provide the strong weapon towards this aim by extending the necessary help and assistance to the small Filipino mineral producers in their pioneering crusade for self-assertion. The Mining Industry, being a depleting industry in the sense that, once the ore reserves are exhausted, they do not grow any more for future exploitation, every Filipino should share in the benefits of the God-given wealth which our beautiful and bountiful country is blessed to have, before our opportunity to share in this wealth is no longer possible.

THE PHILIPPINE STATISTICAL SURVEY OF HOUSEHOLDS

A SUMMARY REPORT AND EVALUATION

By

BERNARDINO G. BANTEGUI*

What the PSSH is

The Philippine Statistical Survey of Households (PSSH), a joint project of the NEC and the ICA was organized for the purpose of obtaining up-to-date statistical data on the size, composition and distribution of the population, labor force, economic activities of the people, income and expenditures, toilet and water facilities and other related information. Supervision and control of the survey was effected through the cooperation of the Bureau of the Census and Statistics under whose authority the data were collected. This survey is one of the most recent surveys in which a sound basis of sampling design has been developed to provide current information far more rapidly and economically than a complete enumeration.

The preparation for the survey started as early as October, 1955. This included the preparation of the budget, the design of the survey, the design of the schedules and the preparation of the following manuals: (1) Interviewer's Manual, containing the instructions to interviewers on techniques of interviewing and filling up items in the schedule; (2) Field Administrative Manual on the organization and maintenance of field offices; and (3) Training Guide for the use of regional supervisors and other instructors regarding procedures and techniques of training interviewers in various regional training centers. To ensure the full cooperation of government and private agencies, a committee on the PSSH was created to develop the schedule and discuss the various aspects of the survey. This inter-agency committee worked in two groups;

* Director of the Office of Statistical Coordination and Standards, NEC. Address delivered before the Philippine Statistical Association, October 20, 1956.

one on labor force and employment status and the other on the income and consumption expenditures. The household schedule as finally drafted contained eight blocks or divisions, as follows: Block I — Identification, Block II — Demographic data, migration and fertility, Block III — Economic Activity, Block IV — Household Industries, Block V — Housing, Block VI — Size, tenure and production of farm households, Block VII — Income and Block VIII — Expenditures. Pretests of schedules were made on February 13 and 14, 1956 by two groups; one group in Manila and the other group in Bulacan and Rizal. Further pretests on specific items in the schedule were also made by regional supervisors. Actual field enumeration lasted about two weeks, from May 28 to June 10 of this year. To check the accuracy of the field enumeration, a post enumeration survey (PES) in selected areas covered by the survey was conducted between June 11 and June 24. As soon as the survey schedules arrived from the field, these were edited, coded, verified and punched in IBM cards. Tabulation of the data was started immediately after punching was completed. All of these operations were conducted under the strictest standards.

The Survey staff

The staff of the survey as of June 30, 1956 at the height of the survey operations reached 372. Of this number, 52 were central office personnel and 320 were field personnel. The breakdown by category of the survey staff is shown below:

Manila Office

Total	52
Professional	12
Technical (IBM)	14
Statistical clerks	15
Clerks and other related administrative personnel	11

Field Offices

Total	320
Regional supervisors	10
Chief Interviewers	23
Interviewers	276
Administrative clerks	11

This list does not include the 114 municipal agriculturists of the Department of Agriculture and Natural Resources who assisted the field personnel in connection with the interview, particularly on the blocks pertaining to income and expenditures. All personnel of the PSSH were selected on the basis of competitive examinations and the results of personal interviews conducted by a Screening Committee. Qualification standards required of each position were set in order to guide the Screening Committee in the selection of personnel.

The Sampling design and estimation procedure

The survey was aimed originally at reaching a representative cross-section of the Philippine households numbering 6,500 scattered over 290 barrios, 145 poblaciones and 58 provincial capitals and cities. These households were selected through scientific sampling methods. The method used in the national survey is called multistage sampling. In this method a number of representative municipalities from an updated list of municipalities in the country were selected at random. Two barrios were selected at random and the poblacion were automatically selected from the selected municipalities. All the households within the selected poblaciones and barrios were listed and a random sample of these households was selected for interview. In the case of provincial capitals and chartered cities, a number of representative precincts was selected at random. All these households in the selected precincts were listed and a random sample was selected for interview.

Regional subdivisions

For purposes of the survey, the Philippines was divided into 10 regional divisions taking into consideration such fac-

tors as economic activities, climate, crops grown, dialects spoken, ethnic origin and others. The regional divisions of the country as agreed upon by the inter-agency committee are as follows: Region I — Metropolitan Manila, Region II — Ilocos-Mountain Province, Region III — Cagayan Valley-Batanes region, Region IV — Central Luzon, Region V — Southern Luzon and Islands, Region VI — Bicol region, Region VII — Western Visayas, Region VIII — Eastern Visayas, Region IX — Western and Southern Mindanao, Region X — Eastern and Northern Mindanao.

The following table which shows the sampling scheme, stratification, selection of municipalities and selection of poblaciones and households, procedures employed in the survey conducted in May, 1956, is based on a paper entitled, "The National Sample Survey of Households" by Mr. Domingo C. Alonzo, of the Office of Statistical Coordination and Standards, NEC, who with Mr. Satya B. Sen originally worked on the survey design.

Rural areas

"The rural areas in the Philippines were classified in two sectors, the barrios representing the true rural conditions, and the poblaciones representing the intermediate conditions of the rural and urban areas. All the barrios and poblaciones were grouped into their respective municipalities while the municipalities were arranged into regions."

Urban areas

"The urban areas in the Philippines were classified into two sectors: the chartered cities including provincial capitals, and Metropolitan Manila. Metropolitan Manila includes the four congressional districts of Manila and its suburbs; namely, Quezon City, Pasay City, Caloocan, Makati, San Juan, Parañaque and Mandaluyong".

The Sampling Design

Rural areas

Sampling Scheme	*Stratification*	*Selection of Municipalities*	*Selection of Poblaciones & Households*
1. Three stage sampling: a. First stage: Municipalities b. Second stage: Barrios and poblaciones c. Third stage: Households 2. No. of Households selected: a. Barrios: 3,000 b. Poblaciones: 1,500	1. Municipalities were arranged into 10 regions. 2. Municipalities were stratified according to their densities of population in ascending order. 3. Strata were formed by counting off their approximate specified population starting from the municipality with the lowest density. 4. The strata were adjusted so that their population are approximately equal & in no case was a municipality divided. 5. 30 strata were formed.	1. Five municipalities were randomly selected with probability proportional to size of population and with replacement in each stratum. 2. Lahiri's method was used. 3. 150 municipalities were selected from all the 30 strata.	1. Two barrios & the poblacion of selected municipality were selected for complete listing of households. 2. 150 sample poblaciones & 300 sample barrios were selected from 150 sample municipalities. 3. Sample barrios were selected with equal probability and without replacement. 4. Poblaciones of selected municipalities were automatically made sample poblaciones. 5. All households in each selected barrio or poblacion were completely listed. 6. The number of sample households to be enumerated was determined by the product of a specified proportion & the total number of households in the selected barrios or poblaciones. 7. Sample households were selected systematically.

Urban areas

Sampling Scheme	*Stratification*	*Selection of Precincts*	*Selection of Households*
1. Two stage sampling: a. First stage: precincts b. Second stage: households 2. No. of households selected: a. Chartered cities & provincial capitals — 1,200 b. Metropolitan Manila — 800	1. The chartered cities & provincial capitals were grouped into ten regions after the three big cities; namely, Cebu, Iloilo and Davao were separated. 2. These were stratified according to degree of urbanization; i.e. percentage of urban precincts in the descending order. 3. Strata were formed by counting off their approximate specified number of precincts, starting from the highly urbanized city or provincial capital. 4. The strata were adjusted so that the number of precincts in each strata is approximately equal and in no case was a city or provincial capital divided. 5. 30 strata were formed in cities and provincial capitals including the three big cities; 32 in Metropolitan Manila.	1. Five precincts were selected at random from each stratum with equal probability and with replacement. 2. 150 precincts were selected from all chartered cities & provincial capitals; 660 precincts in Manila.	1. All the households in selected cities & provincial capitals were listed. 2. The number of sample households to be enumerated was determined by the product of a specified proportion & the total number of households in selected precincts. 3. Systematic selection of households to be enumerated was made.

Reliability of the Survey

The design of the recently conducted survey was referred to and favorably recommended upon by such international statistical experts, as Dr. William Cochran, Statistical Consultant of the U.S. Salk (Polio) Vaccine Survey; Dr. Philip Hauser, former Acting Director of the U.S. Bureau of the Census; and Dr. K.C.S. Pillai, U.N. Statistical Advisor in the Philippines.

As compared with the sampling fraction used in the United States for similar types of surveys which average one household out of every 2,000 households, the recently conducted survey which has a sampling fraction ranging from one out of 400 to one out of 850 households is relatively more intensive insofar as household coverage is concerned. The data from current sample surveys in the United States on the status of labor force and similar information are completely accepted insofar as the reliability and authoritativeness are concerned even though only one out of every 2,000 households are enumerated. The coefficient of variation of the PSSH survey on population which is a measure of reliability was estimated at 3.46%. This is far better than a majority of the results obtained in similar surveys conducted in the 31 other countries as published in the U. N. publication entitled, "Sample Survey of Current Interest", July, 1955.

Problems of the Survey

The last survey was handicapped by the inadequacy of maps for use in the design and for the use of interviewers in actual field enumeration. In addition to this, such problems of field operations, like inaccessibility of places chosen as samples, lack of adequate transportation facilities, and, to some extent, the uncooperative attitude on the part of the respondents have been faced by the survey staff. Problems that arose in the field were evaluated and remedied on the spot by regional supervisors dispatched from the central office. A number of serious problems was prevented through proper training and briefing of field personnel and by equipping them with manual of instructions covering practically every aspect of the survey. Other serious problems were avoided. The peace and order

situation in certain areas did not adversely affect the activities of field men.

The Survey as a medium for development of Concepts and Definitions for the standardization of Classifications, Techniques and Methodology

The PSSH project served as a medium for developing and applying standard definitions, classifications and techniques and procedures ordinarily used in statistical operations.

A case in point is the development of the conceptual components of the labor force. By asking the correct questions, the status of employment of each respondent is established. Terms used in the survey including techniques of interviewing and other methods employed in collecting and processing data are explained in the manual of instructions for interviewers and technical reports of the survey.

Results of the Survey

As of May, 1956, the total population of Philippine households excluding inmates of hospitals, penal, charitable and related institutions was estimated at 21,590,700 with a coefficient of variation of 3.46%. Of this total population of Philippine households, 14,586,700 are 10 years old and over. The labor force as defined at present reached a total of 9,497,350 persons or 65.1% of the total population 10 years old and over. Of the total number of persons in the labor force, 8,314,900 are employed and 1,182,450 are unemployed, or 57.0% and 8.1%, respectively, of the total population 10 years old and over. Of the total number of persons employed, 5,047,000 persons are engaged in non-agricultural pursuits or 60.7% and 39.3%, respectively, of the total number of employed persons. Among the unemployed which total 1,182,450 persons, the number of experienced workers or workers who have worked before total 459,100 while the new workers number 723,350 or 38.8% and 61.2%, respectively, of the total number of unemployed. The number of persons not in the labor force is 5,062,150 or 34.7% of the total population 10 years old and over. Of this 19.4% are engaged in keeping house; 1.9% are students and 13.4% are retired, disabled, etc.

The survey did not indicate the employment status of 27,200 persons or two-tenths of one percent of the total population 10 years old and over, for a number of reasons including non-response.

The following table shows the total population 10 years old and over of Philippine households, classified according to the various indicated categories.

LABOR FORCE STATUS AND OTHER CHARACTERISTICS OF THE POPULATION 10 YEARS OLD AND OVER PHILIPPINES, MAY, 1956.

	Number	*Percent distribution*
TOTAL POPULATION (10 years old and over)	14,586,700	100.0
Labor Force —	9,497,350	65.1
Employed —	8,314,900	57.0
Agricultural	5,047,000	34.6
Non-Agricultural	3,267,900	22.4
Unemployed —	1,182,450	8.1
Worked before	459,100	3.2
New workers	723,350	4.9
Not in Labor Force —	5,062,150	34.7
Keeping House (19.4%)		
Students (1.9%)		
Retired, disabled, etc. (13.4%)		
Employment Status Unknown —	27,200	0.2

For the purposes of comparison, the following table showing the distribution of the 1948 population 10 years old and over classified as to their labor force status, employment and unemployment is appended. However, caution should be exercised in making comparisons, since the classification categories in the 1948 census data and in the 1956 survey data are at best roughly equivalent.

LABOR FORCE STATUS OF THE POPULATION 10 YEARS OLD AND OVER—PHILIPPINES, OCTOBER, 1948*

			Number	*Percent distribution*
TOTAL POPULATION (10 years old and over)			13,300,961	100.0
In labor force			7,415,800	55.8
Employed [1]		6,311,900		47.5
Agricultural	N.A.[2]			
Non-Agricultural	N.A.[2]			
Unemployed		1,103,900		8.3
Worked before	529,300			4.0
New workers	574,600			4.3
Not in Labor Force			5,885,200	44.2
Houseworkers, Dependents	2,698,800			
Students	3,108,500			
Retired, Inmates of Institutions, etc.	77,800			

* Based on data published by the Bureau of Census & Statistics, in "Summary and General Report on the 1948 Census of Population and Agriculture, Vol. III, pp. 398-399, 2197 and furnished to the Senate Committee on Labor and Social Justice in its public hearings held in August, 1954.

[1] Including 1,638,600 farm housewives assumed to be part of the employed Agricultural population.

[2] N.A. — Distribution not available.

Occupational Structure

Of the total number of persons employed of 8.3 million, about 7.9 million, or almost 95 percent were with jobs and at work, while approximately 430 thousand or 5 percent were reported as having jobs but were not at work.

Other interesting observations can be had if we look at the occupational structure of the total number of persons employed and reported at work at the time of the survey. It revealed that farm occupations (Farmers, farm laborers, fishermen and related workers) took the lead, accounting for 4.9 million or 62.0 percent of the total number of persons with jobs and at work, while craftsmen, factory operatives and related manual workers and laborers occupied the second place, aggregating about 1.23 million or 15.6 percent. Other major occu-

pation groups were service and related workers, 505 thousand, or 6.4 percent; salesmen and related workers, 421 thousand, or 5.3 percent; managers, administrators and officials, 326 thousand, or 4.1 percent; clerical office and related workers, 164 thousand, or 2.1 percent; workers in operating transport occupations, 147 thousand, or 1.9 percent; and professional, technical, and related workers, 131 thousand, or 1.7 percent.

Unemployment

Of the total unemployment of about 1.2 million, 459 thousand persons have worked before; the remainder or 723 thousand never worked before.

A close study of the unemployed persons who worked before indicates that the incidence of unemployment are mainly in the agricultural and manufacturing sectors, the former having recorded 87 thousand, or 19 percent of the total number unemployed who worked before and the latter 66 thousand or 14.4 percent. Other sectors in which unemployment are also heavy are commerce, 44 thousand or 9.7 percent; other services, 54 thousand or 11.7 percent; and construction, 42 thousand or 9.1 percent.

It is also surprising to note that of the 459 thousand unemployed persons who worked before, only 87 thousand or 19 percent were in agriculture and 372 thousand or 81 percent were in non-agricultural sector.

The data further reveal that, of the total unemployed persons of 459 thousand who worked before, about 156 thousand, or 34.0 percent have been unemployed for more than 50 weeks (approximately one year); about 87 thousand, or 19.0 percent have been unemployed from 20 to 49 weeks; and about 153 thousand or 33.4 percent have been unemployed for only less than 20 weeks; and about 63 thousand or 13.7 percent did not report the duration of their unemployment.

These figures present a clear picture of the state of unemployment by duration and by industrial sector and undoubtedly provide vital information which can be useful guide for economic and social policy.

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