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**The Role of the Academe in the Continuing  
Development of the Statistical Manpower of the  
Philippine Statistical System: The UP School of  
Statistics Perspective**

by

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# **The Role of the Academe in the Continuing Development of the Statistical Manpower of the Philippine Statistical System: The UP School of Statistics Perspective<sup>1</sup>**

by

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## **I. Introduction**

The Philippine Statistical System (PSS) has always included the academe in efforts to enhance its products and services. The School of Statistics was founded in 1953 as a statistical center tasked to provide the trainings and venues for government statistical manpower to hone their skills. It became a degree granting institution of the University of the Philippines when it started its first academic program in 1954. Since then, the School has contributed trained statisticians through its academic programs and through its training programs. Furthermore, it has remained a partner of PSS in research and development. The academe, therefore, contributes much through: (1) statistics degree programs that produce the future statisticians; (2) training programs that update the system's statistical manpower with new methods and technology; (3) basic and applied research that provide useful results for the system to use. Many academic institutions also currently partner with the PSS in a similar manner. This paper shall provide specific illustrations of their contributions as well as those of the School of Statistics. This paper, therefore, shall discuss the important role that the academe plays in the health and growth of the Philippine Statistical System as it meets challenges in the national and international scene.

## **II. Current Academic Programs in Statistics**

At present, eighteen (18) schools offer academic programs in statistics. The following table, Table 1, lists them and the programs they offer. It should be noted that the list does not include schools that may have programs in applied mathematics, which include statistics as a specialization but do not have formal statistics programs.

It should, thus, be noted that the presence of academic institutions offering statistics is already nationwide even if the concentration is still in Luzon. This nationwide presence augurs well for the enhancement of statistical products and services all over the country. Statistics graduates are produced nationwide and the presence of statistical expertise is available not just in Luzon.

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**Table 1. Schools Offering Programs in Statistics, 2004**

<b>Region</b>	<b>School</b>	<b>Academic Program</b>
NCR	School of Statistics U.P. Diliman, Quezon City	BS Statistics Master of Statistics MS Statistics Ph.D. in Statistics
	Polytechnic University of the Philippines, Manila	Associate in Applied Statistics Bachelor in Applied Statistics Master of Arts in Statistics
	De La Salle University, Manila	BS Statistics
	Rizal Technological University, Mandaluyong	BS Statistics
Luzon	Institute of Statistics U.P. Los Banos, Laguna	BS Statistics MS Statistics Ph. D. Statistics
	Central Luzon State University, Munoz, Nueva Ecija	BS Applied Statistics
	Benguet Sate University La Trinidad, Benguet	BS Applied Statistics MA Applied Statistics
	Batangas State University (formerly Pablo Borbon Memorial Institute of Technology), Batangas City	BS Statistics
	University of Northern Philippines Vigan, Ilocos Sur	BS Mathematics/Statistics Master of Statistics
Visayas	U.P. Visayas Miag-ao, Iloilo	BS Statistics
	Leyte State University Baybay, Leyte	BS Statistics
	Leyte Institute of Technology Tacloban City	BS Statistics
	Negros State College of Agriculture Kabankalan, Negros Occidental	Statistics*
	Samar State Polytechnic College Catbalogan, Western Samar	BS Applied Statistics
	Visayas State College of Agriculture Baybay, Leyte	BS Statistics
Mindanao	Iligan Institute of Technology, Mindanao State University Iligan	BS Statistics Master of Applied Statistics MS Statistics
	University of Southeastern Philippines Davao City	BS Statistics
	Western Mindanao State University Zamboanga City, Zamboanga del Norte	BS Statistics

\* Academic Program not specified

The table below, Table 2, shows graduation statistics.

**Table 2. Distribution of Graduates of Selected Schools by Academic Program, SY 1986 -1987 to SY 2003-2004**

School Year	UP Diliman				UP Los Banos			PUP	MSU-IIT	
	BS	MoS	MS	Ph. D.	BS	MS	Ph. D.	MAS	BS	MAS
1986-1987	43	8	5	1	54	8	a	1		
1987-1988	31	6	5	0	44	5		1	2	
1988-1989	38	5	7	3	32	4		0	4	
1989-1990	43	16	4	3	22	9		1	2	
1990-1991	27	15	7	1	26	3		0	3	
1991-1992	52	26	3	0	36	2	2	0	1	
1992-1993	61	9	8	1	43	4	1	1	2	
1993-1994	40	8	3	0	26	2	1	0	4	
1994-1995	42	4	6	1	14	1	1	1	7	b
1995-1996	39	2	5	1	25	2	1	0	4	
1996-1997	39	5	5	0	24	1	1	0	5	
1997-1998	54	5	3	0	16	2	1	0	2	
1998-1999	85	7	6	0	23	4	2	10	8	
1999-2000	63	1	2	1	15	0	0	7	6	
2000-2001	76	2	3	1	15	1	0	na	5	5
2001-2002	102	5	3	0	11	4	2	na	6	0
2002-2003	90	2	3	2	11	1	0	na	6	2
2003-2004	97	6	3	0				na	12	0

a Program started in 1985

b Program started in 1995

The School of Statistics of U.P. Diliman has produced majority of Statistics graduates to date. Since its establishment it has produced a number of graduates as shown in the above.

It is also encouraging to note that majority of the Ph.D. graduates of the School have remained in the country and are occupying influential positions in

the academe. This ensures that the academic programs in statistics continue to grow and develop; and consequently, continue to produce the needed statisticians for the country (Table 3).

**Table 3. Distribution of Graduates of U.P. School of Statistics by Academic Program, as of Summer 2004**

<b>Academic Program</b>	<b>Number of Graduates (As of Summer 2004)</b>
Bachelor of Statistics*	92
Certificate in Statistics*	8
Diploma in Statistics*	50
B.S. Statistics	2,198
MOS	183
MS	127
Ph. D.	17

\* Not offered anymore.

An encouraging but challenging development in the School these past two years is the significant increase in its graduate enrolment as shown by Table 4 below:

**Table 4. Distribution of Enrolled Graduate Students in UP School of Statistics, SY 1998-1999 to SY 2004-2005**

<b>School Year</b>	<b>Mean Enrolment per Semester in Graduate Programs</b>		
	<b>MS</b>	<b>MoS</b>	<b>Ph. D.</b>
1998-1999	19	36	11
1999-2000	30	47	13
2000-2001	29	63	16
2001-2002	35	77	14
2002-2003	38	75	15
2003-2004	57*	88*	16*
2004-2005	70*	109*	20*

\* First semester only.

Many of these graduate students are part-time and working in the private sector. A number are from the academe and are expected to go back to their respective academic institutions after graduation. Another important profile of these graduate students is that many of them are B.S. Statistics graduates.

### **III. Extension Services**

Academic institutions do not just produce statistical manpower, they are also involved in trainings. These trainings provide appreciation and

advocacy of statistics as well updates of current statistical methods and practices. The School of Statistics, for example, provides trainings on Basic Statistics, Regression Analysis, Time Series Analysis, Multivariate Statistical Methods, Exploratory Data Analysis, Statistics for the Social Sciences during summer and semestral breaks. Furthermore, faculty are invited to serve as resource persons, training directors, and writers of training manuals by other institutions of the Philippine Statistical System.

Statistical consulting is another important area in which academic institutions are noted for. The School, for example, provides consulting services within the U.P. Diliman campus and to those from outside the campus through its consulting classes. Graduate students' consulting skills are developed and honed in these classes. Faculty members are also given opportunity to serve as statistics consultants.

The University allows these extension activities as long as these do not hamper the faculty's primary responsibility to the School. Such involvements also benefit the School since the teaching and research of the faculty are enhanced and become more relevant since they reflect current issues within the Philippine context.

Some of the extension activities of the School in 2003 are shown in the next table.

<b>Title of Extension Program/ Activity</b>  (Please indicate in the 2 <sup>nd</sup> column whether extension is Pahinungod by marking with P)	<b>Type of Activity</b>	<b>Area of concentration</b>  (e.g. upgrading of quality of education, advocacy, capability-building, continuing education, environmental management, etc.)	<b>Sector Served</b>  (e.g. teachers, labor unions, LGUs, etc)  <b>No. of Beneficiaries</b>	<b>Nature of your involvement</b>	<b>Output/ Outcome</b>
Special Training for AGB Inc.	Training	Continuing education	Private (3)	Trainer	Training
Feasibility Study - APO Estates Property	Advisory	Capability Building	Private	Consultant	Reports

Statistical Training	Training	Statistics, Basic, Inference	Government/ Private	Trainer	Training
Introductory Course for Design of Experiments	Training	Capability Building of Engineers	Private (15)	Trainer	Training
Introduction to some Statistical Technique Useful in Inspection and Production	Training	Capability Building of Engineers	Private	Trainer	Manual/ Training
Descriptive Statistics	Training	Statistics	Government (20)	Trainer	Training
Monitoring and Evaluation	Training	Statistics	Government (18)	Trainer	Training
Basic Statistics	Training	Statistics	Government (28)	Trainer	Training
Workshop on Research	Training	Capability building	Government (12)	Trainer	Training
Training Program on Quantitative Methods of Analyzing Data	Training	Capability building	Bank Examiner of BSP (54)	Trainer	Training
Technical Working Group and Technical Committee on Seasonal Adjustment of Philippine Time Series	Advisory	Maintaining quality of official statistics	Government	Chairman of TWG and Technical Committee	Official statistics
Leading Economic Indicators	Training	Continuing education	Private sector/ Government	Trainer	Handouts
Microeconomic Models and Forecasts	Training	Continuing education	Private sector/ Government	Trainer	Handout

#### **IV. Research**

Academic institutions also provide the statistical system with expertise in answering some of the problems of the Philippine Statistical System. These are done through research. Technical working groups and technical committees being coordinated by the National Statistical Coordination Board have members of the academe. Such committees are excellent venues for academe and government statisticians to come together and enhance each other's knowledge and skills on dealing with data, methods, and analysis needed to generate good quality statistical products.

The School of Statistics, for example, has been involved in committees such as the Technical Committee on Seasonal Adjustment of Philippine Time Series, Technical Committee on Poverty Statistics, Technical Committee on Survey Designs, Technical Committee on Prices and many others.

Some of the recent research outputs of the School's faculty and students are:

Development of Quality Criteria Process Standards for Fresh Chilled and Frozen Fish

Dev. Of Quality Criteria for Canned and Bottled Fish

Young Adult Fertility and Sexuality Survey 3

Cambodia National Health Survey

Capacity Building for Operationalizing a Rural Development Plan Performance Monitoring Indicators System

Salinity Induced Primary Productivity Dynamics in Laguna de Bay

Classification of Irrigator's Association

Integrated Agricultural Surveys

Strengthening the Leading Economic Indicator System of the Philippines

Improvement of Statistical Literacy Program and Development of Census Advocacy Modules

The Equivalence of Analysis Based on ANOVA Models and Analysis Based on Regression Models with Dummy Variables

From Random Variables to Random Sets

Why Do Naïve Exponential Smoothing Procedures Forecasts Well?

A Factor Analysis on Cellular Phone Usage and Attitude

Structural Characterization of Quality of Life of Metro Manila's Poor

A Study on the Effectiveness of Tai Chai Chuan as a Supplementary Exercise Regimen for Physical Therapy Management of Care

A Critique on the Effects of Presenting oral and Written Communication in Filipino or English on Comprehension

Linear Regression Analysis on Abortion

An Econometric Model for the Choice of Housing Service: An Application of the Theory of Economic Choice to the Purchase of Club Shares

Perceptions on Human Resource Needs of the Private Sector

Testing Exponentiality of Censored Samples

The Ito Integral and its Applications to Finance

A Study on Anti-Inflammatory Effect of Topical Anti-Fungal Creams

A Survey of Choquet Capacities in Statistics

Forecasting Non-Performing Loans Using Volatility Models

Markov-Switching Models with Constant and Varying Transition Probabilities

Developing A Portfolio Selection Process Which Optimizes Expected Return with an Application to the SSS Portfolio

Estimation of Repeated Binary Data Models with Nonignorable Missingness Using Markov Chain Monte Carlo Methods

AHP-and PCA-Ranking of Preferred Hosts for the World's Foreign Direct Investment

An Application of Path Analysis of Categorical Variables Using Log-Linear Approach to Working Children's Decision to Work or to Study

Generalized Mixture Autoregressive Conditional Heteroscedastic Model

Forecasting Rice Production in the Philippines Using Stochastic Models

A Study on Malaria Risk Factors in Jayapura, Indonesia Using Poisson Regression Analysis

Measuring the Capability of Selected Countries in the Information Society

Fitting Logistic and Autologistic with Autocorrelated Errors using Backfitting

Analysis of Risk Factors on Survival Time Among Student of Aquinas University Science Oriented High School

Forecasting Rubber Production in Cotabato

Process Capability index Cpk for a Mixed Bivariate Data as Applied to Stratified Product Groups

Some Alternative Approaches in the Analysis of ARFIMA (p,d,q)

Fire Risk Analysis in the National Capital Region (NCR): A Geostatistical Approach

An Investigation of SPM Behavior Using Symmetric Stable Distribution

#### **IV. Conclusion**

The academe plays a very important role in the continuing development of the statistical manpower of the PSS. It produces the statistics graduates, it provides continuing education for them through graduate programs and trainings, it also contributes to the enhancement of statistical products and services through consulting and research on how to address special problems encountered by the System. Thus, the linkage it currently enjoys with the other members of the Philippine Statistical System is greatly appreciated. It is vital that this linkage be nurtured and further enhanced. Doing so will surely be beneficial to all.

#### References:

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