



IASSL

NEWSLETTER

*"Statistics is the
Grammar of Science"*

Karl Pearson



*From
President's Pen*

Prof. L D B Suriyagoda

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IASSL NEWS LETTER

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It is with great pleasure that I forward this message as the President of the Institute of Applied Statistics, Sri Lanka (IASSSL) to the current issue of the Newsletter. Quick and virtual access to information in the present world has made individuals, and in general human beings, to be more successful in their careers than before. At the same time lives of many have become unnecessarily complicated due to misuse of data, including analyses, summarization and interpretation, resulting in frustrations. Thus, the proper use of statistics and the contribution-of statisticians to the society have become an important part for the success of individuals and thereby the society, than before. In that context, the responsibilities which lie on the IASSL are immense.

Though IASSL is a very young organization in the country, it has been doing many activities at national and international level to increase awareness on statistics. Further, it has the strength to assist and guide any form of statistical problems faced by different sectors in the society. As most people have not yet understood the real value of statistics, it is a duty of the IASSL to make them aware of statistics and to create an interest for using statistics in their day to day decision making process.

The Newsletter of the Institute attempts to address the above matter and thus publishing this newsletter is one of the important activities. In addition, the newsletter makes the members and general public aware of the current and future activities of the institute. I hope the Newsletter will help the public to get to know about IASSL, make links with the IASSL to get required services, and possibly take part in IASSL activities in serving the nation. As the President of the IASSL, I kindly invite everyone who seek statistical support to contact us and follow our information sources such as; invited talks, international conferences organized by the IASSL, newsletters and the journal published by the IASSL and our institute web site. We are looking forward to guide you in settling your statistical problems!. Be with us!

EDITORIAL



**Mrs. D.A.B.N.
Amarasekera**
Editor/IASSL Newsletter

Statistics and Statisticians' role in National Development

The National statistical system in any country should be recognized, if the country is to have a definite, smooth and steady development programme (United Nations Resolution on World Statistics Day, 2010). Hence, any government at all levels should build a very viable information system to provide adequate statistical information for designing and making strong evidence based policies. Further, no country can achieve meaningful and sustainable development without empowering the national statistical system. In nation building, the aim and endeavour of a policy is to attain national goals such as steady and smooth economic growth with price stability, full employment, no inequalities and disparities of income distributions, educational development, social harmony and security, political stability etc, For success in the above mentioned goals, it is a must to construct strategic plans, set up ways for execution of the plans and observe and evaluation of the implementing process. At each of these steps, the role of statistics is vital and hence, statistics is an imperative tool for national development and economic growth. Therefore, a government should establish a proper infrastructure for information generation, dissemination and usage for proper planning, implementing, monitoring and evaluation of development

programmes and also to make the most appropriate decisions in the process of government policy formation.

In addition, the decisions need to be transparent and evidence based because those decisions should be accepted by a wider community. Therefore, such decision making requires quality statistical information (data) which must be collected, analyzed and presented using reliable, fair and repeatable approaches. This is the stage at which statisticians' role is indispensable. In general, statisticians are exponents of facts and figures to the community. For instance, statisticians could use the result of a pilot survey to advance the predictions of population census, moreover these predictions are meaningful and useful, only if statisticians present them in a way that the community is able to understand and interpret the information.

The production process of statistics begins with planning, statistical/survey designs, data collection, data processing and analysis to report writing and dissemination of final statistical products. Every one of these stages is crucial and important while at every step statisticians must play a major role. One of these stages requiring particular attention is the data collection as collected data are the raw material for statistical products. Basically, data could be obtained through a census, a sample survey or through administrative records and quality of these collected data must be very high ensuring that both sampling errors (if a sample approach has been used for data collection) and non-sampling errors are minimized.

However, data generation is a combined effort of three groups such as producers (statistical workers), the users and the suppliers of information. When there is the dearth of data or if the available data do not have a good quality, the blame for these

occurrences often goes to statisticians; but people may not realize that both the users and suppliers of data are also responsible for this undesirable situation. Suppliers of data should cooperate in statistical surveys/census by providing correct information which is vital to produce quality data to be used in socio-economic growth of any country.

It is very common that almost all countries face various economic and social issues such as public debt, exports and imports, unemployment, poverty, education and health facilities, shortage of skilled professionals etc. Statistical information is required to identify the most appropriate measures that should be taken to solve these issues. On the other hand, with the limited resources available especially in Under Developed Countries, policy makers should make proper priority settings. However priority setting is mainly based on decisions which depend on the inputs obtained through statistical data. Hence, it must be emphasized that statistical information is an input for the efficient operation of economic and social development programmes in any country.

As already seen above, statistical information is needed for making evidence based national decisions. Planning a nation's economic and social development involves the process of constructing, executing and checking interrelated sets of decisions and has become a permanent part of major government decision making which needs a highly organized and well-developed statistical system, without which a planned economy is impossible. Such a statistical system must make available (for planning and other purposes of government, industry and business) a well integrated mass of accurate data at different degrees of aggregation, which can be used at each stage of the planning process (Adamu, 1978). However, planned decisions rely very heavily on high quality statistical data.

National development requires a well organized statistical system allowing planners to work on the broad set of statistical indicators that are indispensable for the development and improvement of planning.

In addition, monitoring is a continuous process that requires data which is generated to assist in establishing whether planned targets are likely to be achieved or not. This is another area where Statistics plays a vital role. In monitoring and evaluation of ongoing development programmes of the governments, statistical data will provide the necessary information on performance indicators which serve to measure the effect, productivity and efficiency of policies and programmes implemented to achieve the social and economic development of a country.

The role of statistics in national development becomes increasingly more complex. Timely, complete, accurate and reliable statistics is critical to creating a strong, equitable development while is an essential raw material for formulation of correct economic development policies.

The national economic policies and complex interactions among various sectors of the economy make it imperative for building up macroeconomic planning models. This kind of model build-up is only possible with statistical information (which is also used in estimating the parameters of the model) with the contribution of statisticians and other professionals relevant to such fields. Thus, statistical information enables us to monitor the performance of the economy and the social well-being of the people.

May I conclude with what Ward (2004) stated ***“Statistics is a pathfinder for solution as well as a veritable tool in assessing the extent or level of economic development of a country in a given period”***.

ONE ACT PLAY

A matter of Significance



***Emeritus Prof. R.O. Thattil
(Founder - Association of the Applied
Statistics Sri Lanka)***

Setting – Senior Common room of a faculty

A group of academics are having a chat. The group comprises of Niluka [N] (an animal scientist) Asoka [A] (a crop scientist) James [J] (a statistician) Silva [S] (a biologist) and a few others.

A: Niluka is complaining that his paper has been rejected twice due to problems of replication in the design.

N: Yes. The first time I had 25 chicks in the experiment receiving a feed treatment with a additive while another 25 received the same feed without the additive. When it was rejected, I repeated the experiment with 50 chicks per treatment and it was rejected again with the referee stating that there were no replicates. Can you believe it! I had 50 replicates and he rejects on the basis that there were no replicates!

S: I think it all depends on how the experiment was conducted. Perhaps there was no randomization involved.

N: Of course there was randomization. I randomly selected 25 chicks for each treatment at the first time and housed them in 2 separate pens. The feed with the additive was given to the chicks in one randomly selected pen while the chicks in the other pen were given the feed without the additive. The second time I repeated the experiment with 50 chicks in each pen.

A: In a simple experiment like this you don't need sophisticated designs.

What do you say James?

J: What was the response variable?

N The body weight gain of the chicks.

J: In your experiment there is no way to know whether the effect on the body weight is due to the feed or the effect of the pen.

N: How can you say that?

J: That is the problem. No one can say for sure. You had 2 pens which were randomly allocated to the treatments. Therefore, the pen becomes the experimental unit. Thus, each treatment has only 1 replicate.

N: But I had 50 chicks per pen.

J: True, but only 1 pen per treatment. What you randomized were the pens!

A: I can see a similar situation in crop experiments. If you had a piece of land having 1 treatment and another piece of land with another treatment. You cannot consider each plant in the

piece of land as a replicate. You have only 1 replicate for each treatment!

J: Absolutely correct. In the field experiment you stated, you must have several pieces of land (replicates) for each treatment. The treatments are then randomly allocated to these pieces of land, which will now form the replicates for the treatments.

A: I can now understand, why the reviewer stated there were no replicates. Even if you used 100 chicks per pen, when there were only 2 pens there would still be only 1 replicate per treatment.

J: You got it. The problem is to identify what is an experiment unit. In the case of Niluka's Experiment, the pen is the experimental unit. The solution is to have several pens randomly allocated to each treatment. The number of chicks per pen can be around 10. The body weight gain is then taken for all the chicks in a given pen.

Everyone together: We got it.
---- End of act ----

Members' Achievements

Congratulation for all members for your great achievements and being respected persons.

'Your honor is the consequence of your diligent work, devotion and endeavours. I compliment all of you for your accomplishments. Continuously advance throughout everyday life.'

• **Establishment of the Prestigious CR and Bhargavi Rao Gold Medal for Statistics**



Ms. D. S. Wickramarachchi

The above Gold Medal was established in 2018 in the University of Colombo by the Eminent Scientist and Mathematical Statistician Prof. Calyampudi Radhakrishna Rao, popularly known as C R Rao. Prof. Rao has been honored with honorary doctorates by 38 universities in 19 countries around the world including University of Colombo in 2011, for his fundamental contributions to mathematical statistics. Further, he has been awarded with the highest medals for a scientist, by USA, UK, and India. The donation was made through the kind courtesy of Prof. Shelton Peiris, a Visiting Research Fellow of the Department of Statistics who is a close associate of Prof. Rao.

The Gold Medal is awarded to the best First Class (Honors) student satisfying a special criterion, among all students specializing from the Department of Statistics. In 2018, the recipient was Ms. D. S. Wickramarachchi.

• **“The State of Literacy Award”**

Prof. K.A.P. Siddhisena,

Presently a Council Member, and a former Chairman of Research and Development Committee of the IASSL.

Introduction to Data Analysis' authored by **Prof. K. A. P. Siddhisna** was recommended as a prominent book published in the field of Social Sciences in 2017 by the Ministries of Cultural Affairs and Higher Education at "The State of Literacy Award" and it was announced and offered a certificate in the presence of HE President at the "State Literacy Award Ceremony" held in "Nelum Pokuna" on 11th September, 2018.



Books published by the members

- **Child Poverty in Sri Lanka: Issues Related to their Education and access to Safe Water and Sanitation**

Mr. Wimal Nanayakkara, - a past Vice President of the IASSL, Retired Director General of Census and Statistics, and Senior Visiting Fellow of the Institute of Policy Studies.

Year of Publication: 2018
ISBN: 78-955-7397- 08- 5
Price US\$ 25

<http://www.ips.lk/child-poverty-sri-lanka-issues-related-education-access-safe-water-sanitation/>

<http://www.ips.lk/talkingeconomics/author/wimaln/>

- **Introduction to Data Analysis**

Prof. K.A.P. Siddhisena –Emeritus Professor of Demography, University of Colombo

Year of Publication: 30th November, 2017
ISBN: 978-955-38548-0-3

Price: SLRs 500.00- Author Publication

Available at: IASSL Office and Department of Demography, University of Colombo

"Errors using inadequate data are much less than those using no data at all."

Charles Babbage



"Be a proud member of IASSL"

Membership application can be downloaded

www.iappstat.lk

News in Brief

National Statistics Olympiad

IASSL is happy to inform that its 7th National Statistics Olympiad Competition-2018 had been conducted all over the island for school students and the best winners were awarded at the last Annual General Meeting held on October. 2018.

Winners (Meddlers) of the 7th National Statistics Olympiad 2018

Senior Category

- 1st Place** – C.U. Amarasigha
(Ladies College, Colombo 07)
- 2nd Place** – J.M. Dhanushka Madhura -
(Nalanda College, Colombo 10)
- 2rd Place** – P.J.M. Perera,
(Vishaka College, Colombo 05)
- 3rd Place** – B.A.A.D. Bandara -
(Dharmaraja College, Kandy)

Junior Category

- 1st Place** - G.A. Mahabaduge-
(Ananda College, Colombo)
- 2nd Place** - K.J.Y.N. Jayasekara-
(Richmond College, Galle)
- 3rd place** - A. Varunja- (J/ Thondaimanaru
Veeragaththipillai M.V.)

Further, The Best 10 Students, based on marks obtained from the local competition were trained to participate in the Indian Statistics Olympiad, 2018 competition organized by C R Rao Advanced Institute of Mathematics, Statistics and Computer Science (AIMSCS), University of Hyderabad.

Winners of the Best Research Project 2018

Postgraduates

Winner:

Ms. N.A.D.N. Napagoda- Central China Normal University

Runner-ups :

Ms. G.H.S. Karunarathna- University of Colombo

Ms. M.P. Dhanushika - University of Sri Jayewardenepura

Undergraduates

Winner:

Mr. N.M. Udumulla- University of Kelaniya

Runner-ups:

Mr. M.S.M.S. Kumara- University of Kelaniya

Ms. U.B.N. Pushpakanthi- University of Kelaniya

Corpus

A corpus is a body of documents to be used in a text mining task. Some corpuses are standard public collections of documents that are commonly used to benchmark and tune new text mining algorithms. Very simply, the corpus is a body of documents for a specific text mining task - e.g. a set of data collected from sub-forums of a statistics conference, or a group of discovery documents in a legal case, for which a classification model is needed.

7th AGM of the IASSL - December 2018



Welcome event of the Hon. Chief Guest Mr. Nguyenduc HOANG (Acting Director, World Food Programme), Keynote Speaker Mrs. I. R. Bandara (Director General, Department of Census & Statistics)



Lightning oil lamp (Left to right): Hon. Chief Guest Mr. Nguyenduc HOANG, Keynote Speaker Mrs. I. R. Bandara & Dr. A.P.G.S. De Silva(President of IASSL)



Head Table (Left to right) –

Prof. N.R Abeynayake (Past president, IASSL), Mr. Nguyenduc HOANG (Hon. Chief Guest), Mrs. I.R. Bandara (Keynote Speaker), Dr. A.P.G.S. De Silva (President, IASSL) and Prof. L.D.B. Suriyagoda (Secretary, IASSL)



Address by Chief guest, Mr. Nguyenduc HOANG



Address by Keynote speaker Mrs. I. R. Bandara



Address by Dr. A.P.G.S. De Silva
President of the IASSL



Awarding IASSL fellow to first lady
President / IASSL 2018



Participants of the AGM



Natioanl Statistics Olympiad winners for the year
2018

New Executive Council - 2019

President -	Prof. L. D. B. Suriyagoda
Immediate Past president-	Dr. A.P.G.S. De Silva
Vice President, Chairperson/ House & Finance Committee	Dr. Chithraka Wickramarachchi
Secretary -	Dr. M. A. C. S. S. Fernando
Asst. Secretary -	Mr. Rukshan Abeygunawardana
Treasurer -	Mrs. Padma Yatapana
Asst. Treasurer -	Mr. Priyath De Silva
Editor -	Mrs. D. A. B. N. Amarasekera
Chairperson/ Academic Training Committee -	Prof. (Mrs.) N. R. Abeynayake
Chairperson/ Research & Development Committee -	Mr. M. D. N. Gunaratne
Chairperson/ Statistics Popularization Committee-	Dr. Niroshan Vithanage
Executive Council Members-	Prof. S. Samita
	Prof. T. Sivananthawerl
	Dr. (Mrs.) C.W.C. Silva
	Dr. K. T. Rathnayaka
	Dr. (Ms) L. S. Nawarathna
	Mr. R.B.M. Korale

New Members of the IASSL- 2018 (July - December)

1. Mr. Ranga Tudugala
2. Mr. Vajira Sudath Karunaratne
3. Ms. Deshanee Senevirathne
Wickramarachchi
4. Mr. Kasun Bandara Dissanayake
5. Mrs. Madduma Wellalage Achini Erandi
6. Mr. G.M.L.M. Aponsu
7. Mr. B. Sinthushan
8. Mrs. V.R.A.Siriwardana
9. Mrs. Piyumi Lankeshwara
10. Mr. Jayantha De. Silva

Future Events

National

- International Statistics Olympiad competition will be held in January 2019.
- Prersident's Induction Ceromony of the IASSL will be held in March 2019

International

- INTERNATIONAL CONFERENCE ON ENVIRONMENTAL STATISTICS: AIR POLLUTION, CLIMATE CHANGE AND BEYOND-26 - 27 August
Website: ties-kunming2019.net
- APPLIED STATISTICS AND POLICY ANALYSIS CONFERENCE 2019-5 - 6 September
Website: csusap.csu.edu.au
- THE 3RD INTERNATIONAL CONFERENCE ON STATISTICAL DISTRIBUTIONS AND THEIR APPLICATIONS- 10 – 12 October
Website: istkon2019.giresun.edu.tr
- 5TH IRSYS CONGRESS- 18 – 20 October
Website: www.irsysc2019.com
- 2ND CONFERENCE ON STATISTICS AND DATA SCIENCE- 18-20 NOEMBER
Website: www.csds2019.ime.ufba.br
- THE 11TH CONFERENCE OF THE IASC-ARS (IASC-ARS2019) -2-5 DECEMBER
Website: saasweb.hku.hk/conference/iasc-ars20
- INTERNATIONAL CONFERENCE ON APPLIED STATISTICS (ICAS) 2019 - 27 - 29 DECEMBER
Website: www.isrt.ac.bd/icas2019
- 6TH INTERNATIONAL CONFERENCE ON ESTABLISHMENT STATISTICS
Website: amstat.org

Contributions

If you have any submissions, comments, suggestions & feedback, Please send them to appstatsl@gmail.com. To receive notification of online newsletter, subscribe the newsletter icon of [www. iappstat.lk](http://www.iappstat.lk).

"People are realizing that
STATISTICAL LITERACY
is an important component of being a
WELL-EDUCATED PERSON
and is relevant to daily life."
Jessica Utts, 2016 ASA President

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Mr. Janaka Wijerathna - Assistanat Commissioner, Sri Lanka Tea Board

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We are profusely thankful to whoever contributed to this issue and participated in its' production.

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