



# REGIONAL CANCER CENTRE

Medical College P.O., Thiruvananthapuram-695011, India

Fax: +91 471 2442539

Phone: +91 471 2442541

Website: www.rcctvm.org

E-mail: webmaster@rcctvm.gov.in

08/08/2019

## CERTIFICATE

This is to certify that the project entitled "POPULATION ATTRIBUTABLE FRACTION FOR PHARYNGEAL AND LARYNGEAL CANCER DUE TO TOBACCO USE" is a record of original work done by DONA ANTONY under my supervision in partial fulfilment of the requirements of the degree of Master of Science in Biostatistics of Mahatma Gandhi University, Kottayam. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associateship or Fellowship or other similar title to any candidate of this or any other university.

Dr. Aleyamma Mathew

Professor & Head

Division of Cancer Epidemiology & Biostatistics

An autonomous centre sponsored for Cancer Treatment & Research by Government of India and Government of Kerala. Donations to this Centre are exempt under Section 80G of the I.T. Act, 1961.

*Life beyond cancer*



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Website: www.rcctvm.org

E-mail: webmaster@rcctvm.gov.in

08/08/2019

## CERTIFICATE

This is to certify that the project entitled "ANTHROPOMETRIC FACTORS, BODY SIZE AND BREAST CANCER RISK BY MENOPAUSAL STATUS: A CASE-CONTROL STUDY" is a record of original work done by DONA TOMS under my supervision in partial fulfilment of the requirements of the degree of Master of Science in Biostatistics of Mahatma Gandhi University, Kottayam. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associateship or Fellowship or other similar title to any candidate of this or any other university.

Dr. Preethi Sara George

Additional Professor in Biostatistics  
Division of Cancer Epidemiology & Biostatistics

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*Life beyond cancer*





# Dr. S. R. Chandrasekhar Institute of Speech and Hearing

(A Unit of Bangalore Speech & Hearing Trust)  
(Aided by Lion's Club of Bangalore East)

(Affiliated to Bangalore University, Recognized by Rehabilitation Council of India, New Delhi and NAAC Accredited)

Hennur Road, Lingarajapuram, Bengaluru 560 084

• Ph: 080-2546 0405 / 2547 0037 / 2546 8470 • Mob: 88617 87315

• Email: dr.srcish@gmail.com • Web: www.speechhear.org

## CERTIFICATE

This is to certify that this dissertation entitled “**Text mining methods and Visualization Techniques**” of the candidate **Mr. Josemon Achenkunju** for the degree of Master of Science in Biostatistics submitted to the faculty of science of Mahatma Gandhi University, Kottayam, is a record of his research work done under the guidance of **Ms. Anu Babu**, Assistant Professor and Biostatistician, Department of B. N. Gupta Research Centre, Dr. S. R. Chandrasekhar Institute of Speech and Hearing, Bengaluru, Karnataka.

Ms. Anu Babu

Assistant Professor and Biostatistician,

B N Gupta Research Centre,

Dr. S. R. Chandrasekhar Institute of Speech and Hearing,

Bengaluru, Karnataka

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• Email: dr.sroish@gmail.com • Web: www.speechear.org

## CERTIFICATE

This is to certify that this dissertation entitled “**Random Forest Vs Logistic Regression: A Classification Approach**” of the candidate **Ms. Lakshmi. S** for the degree of Master of Science in Biostatistics submitted to the faculty of science of Mahatma Gandhi University, Kottayam, is a record of her research work done under the guidance of **Ms. Anu Babu**, Assistant Professor and Biostatistician, Department of B. N. Gupta Research Centre, Dr. S. R. Chandrasekhar Institute of Speech and Hearing, Bengaluru, Karnataka.



Ms. Anu Babu

Assistant Professor and Biostatistician,

B N Gupta Research Centre,

Dr. S. R. Chandrasekhar Institute of Speech and Hearing,

Bengaluru, Karnataka

August 30, 2019





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08/08/2019

## CERTIFICATE

This is to certify that the project entitled "TOBACCO SMOKING PREVALENCE AND ITS RISK FOR CANCER IN KERALA" is a record of original work done by MERLIN MARY JOY under my supervision in partial fulfilment of the requirements of the degree of Master of Science in Biostatistics of Mahatma Gandhi University, Kottayam. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associateship or Fellowship or other similar title to any candidate of this or any other university.

Dr. Preethi Sara George

Additional Professor in Biostatistics

Division of Cancer Epidemiology & Biostatistics



**icmr** | **NIRT**  
INDIAN COUNCIL OF MEDICAL RESEARCH | NATIONAL INSTITUTE FOR RESEARCH IN TUBERCULOSIS

150  
YEARS OF  
CELEBRATING  
THE MAHATMA

आई सी एम आर - राष्ट्रीय यक्ष्मा अनुसंधान संस्थान  
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार  
कल्याण मंत्रालय, भारत सरकार

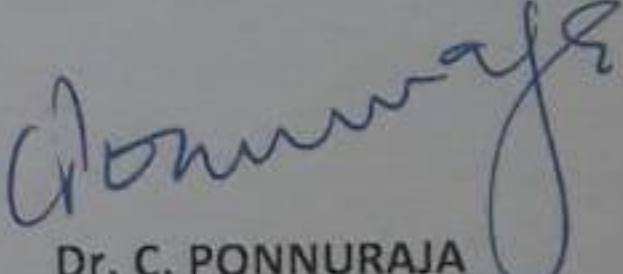
ICMR - National Institute for Research in Tuberculosis  
Department of Health Research, Ministry of Health  
and Family Welfare, Government of India

Dr. C. Ponnuraja, Ph.D.,  
Scientist – E & Head  
Dept. of Statistics

July 31, 2019

## CERTIFICATE

This is to certify that the project entitled "A Comparison of Survival Models for the Analysis of Tuberculosis Data" is a record of original work done by Ms. Ansu Baby in partial fulfilment of the requirements for the Degree of Master of Science in Biostatistics of Mahatma Gandhi University, Kottayam, Kerala. She has done the work in the Department of Statistics, National Institute for Research in Tuberculosis (NIRT), ICMR, Chennai from 31<sup>st</sup> May to 31<sup>st</sup> July, 2019 under my guidance. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associateship or Fellowship or other similar title to any candidate of this or any other University.

  
Dr. C. PONNURAJA

DEPT OF STATISTICS  
NATIONAL INSTITUTE FOR RESEARCH IN TUBERCULOSIS  
INDIAN COUNCIL OF MEDICAL RESEARCH  
CHENNAI-600 031.



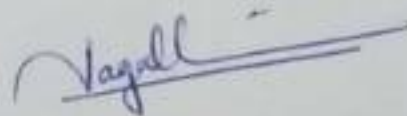
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08/08/2019

## CERTIFICATE

This is to certify that the project entitled "RISK ESTIMATION IN CANCER SURVIVAL USING MULTI-STATE MODELS" is a record of original work done by AMALANDHU AJI under my supervision in partial fulfilment of the requirements of the degree of Master of Science in Biostatistics of Mahatma Gandhi University, Kottayam. I further certify that the project work has not been previously formed the basis for the award of any other Degree or Diploma or other similar title to any candidate of this or any other university.



Dr. Jagathnath Krishna K M

Assistant Professor in Biostatistics

Division of Cancer Epidemiology & Biostatistics



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08/08/2019

## CERTIFICATE

This is to certify that the project entitled "POPULATION ATTRIBUTABLE FRACTION FOR LUNG CANCER DUE TO TOBACCO USE" is a record of original work done by ANN ELIZABETH THOMAS under my supervision in partial fulfilment of the requirements of the degree of Master of Science in Biostatistics of Mahatma Gandhi University, Kottayam. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associateship or Fellowship or other similar title to any candidate of this or any other university.

Dr. Aleyamma Mathew

Professor & Head  
Division of Cancer Epidemiology & Biostatistics





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08/08/2019

## CERTIFICATE

This is to certify that the project entitled "**JOINT FRAILTY MODEL FOR RECURRENT AND TERMINAL EVENTS IN CANCER SURVIVAL**" is a record of original work done by **ANTU MARIA ANTO** under my supervision in partial fulfilment of the requirements of the degree of Master of Science in Biostatistics of Mahatma Gandhi University, Kottayam. I further certify that the project work has not been previously formed the basis for the award of any other Degree or Diploma or other similar title to any candidate of this or any other university.

**Dr. Jagathnath Krishna K M**

Assistant Professor in Biostatistics

Division of Cancer Epidemiology & Biostatistics



राष्ट्रीय जानपदिक रोग विज्ञान संस्थान

**ICMR - NATIONAL INSTITUTE OF EPIDEMIOLOGY**

Dept. of Health Research, Ministry of Health & Family Welfare,  
Govt. of India



WHO COLLABORATING  
CENTRE FOR  
LEPROSY RESEARCH  
AND EPIDEMIOLOGY

No.R-127, 3rd Avenue, Second Main Road, Tamil Nadu Housing Board  
Ayapakkam, Chennai - 600 077, India.

**CERTIFICATE**

This is to certify that the project entitled "*Multilevel Analysis of Determinants Associated with Stunting, Wasting and Underweight among Children Under-Five Years in India*" is a record of original work done by Ms. Greeshma Maria Jose in partial fulfillment of the requirements for the Degree of Master of Science in Biostatistics of Mahatma Gandhi University, Kottayam, Kerala. She has done work in National Institute of Epidemiology - ICMR, Chennai from May 27 to August 9, 2019 under my guidance. I further certify that the project work has not previously formed the basis of award of any other Degree or Diploma or Associateship or Fellowship or other similar title to any candidate of this or any other university.

*V. Saravan*

**Dr. Saravana Kumar**

**Scientist - B**

**ICMR - National Institute of Epidemiology**

**Chennai.**

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Estt : 044 - 2613 6260

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Transport : 044 - 2613 6268  
Director's office : 044 - 2613 6204





Dr. Adhin Bhaskar, Ph.D.,  
Scientist - B  
Dept. of Statistics

July 31, 2019

## CERTIFICATE

This is to certify that the project entitled "A Count Regression Approach to Predict the Spousal Harms on their Wife in Tamil Nadu" is a record of original work done by Ms. Elizabeth Varghese in partial fulfilment of the requirements for the Degree of Master of Science in Biostatistics of Mahatma Gandhi University, Kottayam, Kerala. She has done the work in the Department of Statistics, National Institute for Research in Tuberculosis (NIRT), ICMR, Chennai from 31<sup>st</sup> May to 31<sup>st</sup> July, 2019 under my guidance. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associateship or Fellowship or other similar title to any candidate of this or any other University.

Dr. ADHIN BHASKAR

DEPT OF STATISTICS  
NATIONAL INSTITUTE FOR RESEARCH IN TUBERCULOSIS  
INDIAN COUNCIL OF MEDICAL RESEARCH  
CHENNAI-600 031.



# PSG Institute of Medical Sciences & Research

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Phone : 91 422 - 2598822, 2570170 • Fax: 91 422 - 2594400

E-mail : psgmedschool@gmail.com Website : www.psgimsr.ac.in

## CERTIFICATE

This is to certify that the project work entitled "Socio Demographic and Clinical Correlates of Erectile Dysfunction (ED) Among Type 2 Diabetic Mellitus Patients- A Cross Sectional Study" is a record of original work done by Arjun V Sajeev under my guidance in partial fulfillment of the requirements for the degree of Master Science in Biostatistics of Mahatma Gandhi University, Kottayam. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associate ship or Fellowship or other similar title to any other candidate of this or any other university.

*Anil Mathew*  
Dr. Anil C Mathew

Professor of Biostatistics  
Department of Community Medicine  
PSG Institute of Medical Science & Research  
Coimbatore, Tamil Nadu

**Dr. Anil C. Mathew Ph.D**  
Professor of Biostatistics  
Department of Community Medicine  
PSG Institute of Medical  
Sciences and Research  
Coimbatore - 641 004

Forwarded by

**Dr. K.K. Jose**

Head of the department of Biostatistics

St. Thomas College, Palai, Kerala





# MALANKARA ORTHODOX SYRIAN CHURCH MEDICAL COLLEGE HOSPITAL

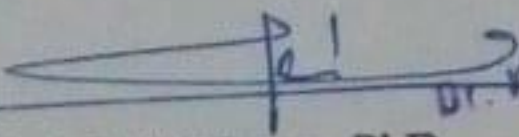
(AN INSTITUTE UNDER THE MALANKARA ORTHODOX SYRIAN CHURCH MEDICAL MISSION)

KOLENCHERY, ERNAKULAM DISTRICT, KERALA, INDIA. PIN-682311. Telephone: 0484-2760251, 3055555  
3055666, Fax: 2760409, Gram: "MISSIONHOS", E-mail: mmmhn@moscmm.org, www.moscmm.org

## CERTIFICATE

This is to certify that the project entitled "**Outcomes of Neonates Born to Mothers with Premature Rupture of the Membrane: A Meta-Analysis**" is a record of original work done by **Ms. Ivy Mathew**, Department of Biostatistics, **St Thomas College, Pala** during the year 2017-2019 towards the partial fulfillment of requirements for the award of the Degree of Master of Science in Biostatistics from **Mahatma Gandhi University, Kottayam, Kerala**. She has done the work in the **Division of Biostatistics, MOSC Medical College, Kolenchery** from 25<sup>th</sup> May 2019 to 8<sup>th</sup> August 2019, under my guidance. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associateship or Fellowship or other similar title to any candidate of this or any other university.

Guide

  
Dr. Kalesh M Karun, PhD

Assistant Professor

Division of Biostatistics

MOSC Medical College, Kolenchery

Dr. KALESH M KARUN, PhD  
Assistant Professor  
In Charge Division of Biostatistics  
M O S C Medical College  
Kochi 682 311 Kerala, India





**ST. JOHN'S NATIONAL ACADEMY OF HEALTH SCIENCES**

**ST. JOHN'S RESEARCH INSTITUTE**

*(A Unit of CBCI Society for Medical Education)*

Sarjapur Road  
Bangalore - 560 034, INDIA.  
Tel : +91-80-4946 7000  
E-mail: deansoffice@sjri.res.in

02/08/2019

## **CERTIFICATE**

This is to certify that the project entitled "*Association of household air pollution and related health outcomes in National Family Health Survey-4: an exploratory data analysis*" is a record of original work done by Ms. Josna Jose in partial fulfillment of the requirements for the Degree of **Master of Science in Biostatistics** of Mahatma Gandhi University, Kottayam, Kerala. She has done the work in the Division of Epidemiology and Biostatistics, St. John's Research Institute, Bangalore from May 27 to August 2, 2019 under my guidance. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associateship or Fellowship or other similar title to any candidate of this or any other university.

Dr. TINKU THOMAS

Professor & Head

Dept. of Biostatistics

St. John's Medical College

**Dr. TINKU THOMAS**  
**Professor & Head**  
**Department of Biostatistics**  
**St. John's Medical College**  
**Bengaluru - 560 034**





## PSG Institute of Medical Sciences & Research

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E-mail : [psgmedschool@gmail.com](mailto:psgmedschool@gmail.com) Website : [www.psgimr.ac.in](http://www.psgimr.ac.in)

### CERTIFICATE

This is to certify that the project work entitled "Internet Addiction Among Medical And Health Science Students and its Association With Usage Patterns - A Cross Sectional Study in South India" is a record of original work done by Jithin Thomas under my guidance in partial fulfillment of the requirements for the degree of Master Science in Biostatistics of Mahatma Gandhi University, Kottayam. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associate ship or Fellowship or other similar title to any other candidate of this or any other university.

**Dr. Anil C Mathew**  
Professor of Biostatistics  
Department of Community Medicine  
PSG Institute of Medical Science & Research  
Coimbatore, Tamil Nadu

Forwarded by  
**Dr. K.K. Jose**  
Head of the department of Biostatistics  
St. Thomas College, Palai, Kerala

**Dr. Anil C. Mathew Ph D**  
Professor of Biostatistics  
Department of Community Medicine  
PSG Institute of Medical  
Sciences and Research  
Coimbatore - 641 004





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E-mail: [webmaster@rccvtm.gov.in](mailto:webmaster@rccvtm.gov.in)

08/08/2019

## CERTIFICATE

This is to certify that the project entitled "ALCOHOL PREVALENCE AND ITS RISK FOR CANCER IN KERALA" is a record of original work done by LEONY TOM under my supervision in partial fulfilment of the requirements of the degree of Master of Science in Biostatistics of Mahatma Gandhi University, Kottayam. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associateship or Fellowship or other similar title to any candidate of this or any other university.

Dr. Aleyamma Mathew

Professor & Head

Division of Cancer Epidemiology & Biostatistics





# National Institute of Mental Health & Neuro Sciences

(Institute of National Importance), Bangalore -560 029

राष्ट्रीय मानसिक स्वास्थ्य एवं तंत्रिका विज्ञान संस्थान, (राष्ट्रीय महत्व का संस्थान), बेंगलूर -560029

ರಾಷ್ಟ್ರೀಯ ಮಾನಸಿಕ ಆರೋಗ್ಯ ಮತ್ತು ನರ ವಿಜ್ಞಾನ ಸಂಸ್ಥೆ, (ರಾಷ್ಟ್ರೀಯ ಪ್ರಾಮುಖ್ಯತಾ ಸಂಸ್ಥೆ), ಬೆಂಗಳೂರು -560029

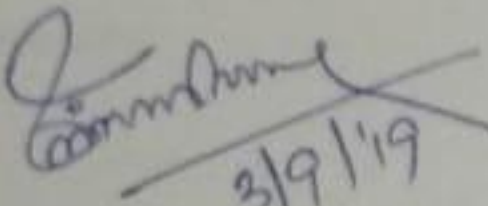
Ref:

Date:

## CERTIFICATE

This is to certify that the project work entitled 'STATISTICAL METHODS FOR EVIDENCE SYNTHESIS IN BEHAVIOURAL RESEARCH' is a record of original work done by **Mr. Jophil Jacob Joy** in partial fulfillment of the requirements for the Degree of **Master of Science in Biostatistics** of Mahatma Gandhi University, Kottayam, Kerala. He has completed the work at the Department of Biostatistics, National Institute of Mental Health and Neuro Sciences (NIMHANS), Bengaluru, during June to August 2019 under my guidance. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associateship or Fellowship or other similar title to any candidate of this any other university.

Bengaluru

  
3/9/19

**Dr. B. Binukumar**  
(GUIDE)

**Dr. B. BINUKUMAR, PhD.**  
Associate Professor  
Department of Biostatistics  
NIMHANS, Bengaluru - 560 029





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• Email: dr.srctish@gmail.com • Web: www.speechear.org

## CERTIFICATE

This is to certify that this dissertation entitled "**Performance evaluation of Decision tree, Random forest and AdaBoost**" of the candidate **Ms. Maya P. G.** for the degree of Master of Science in Biostatistics submitted to the faculty of science of Mahatma Gandhi University, Kottayam, is a record of her research work done under the guidance of **Ms. Anu Babu**, Assistant Professor and Biostatistician, Department of B. N. Gupta Research Centre, Dr. S. R. Chandrasekhar Institute of Speech and Hearing, Bengaluru, Karnataka.

Ms. Anu Babu

Assistant Professor and Biostatistician,

B N Gupta Research Centre,

Dr. S. R. Chandrasekhar Institute of Speech and Hearing,

Bengaluru, Karnataka

August 30, 2019





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E-mail : psgmedschool@gmail.com Website : www.psgimsr.ac.in

## CERTIFICATE

This is to certify that the project work entitled "**socio-demographic and lifestyle factors associated with internet addiction among medical and health sciences students**" is a record of original work done by **Sanoop Thomas** under my guidance in partial fulfillment of the requirements for the degree of **Master Science in Biostatistics** of Mahatma Gandhi University, Kottayam. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associate ship or Fellowship or other similar title to any other candidate of this or any other university.

*Anil Mathew*

**Dr. Anil C Mathew**  
Professor of Biostatistics  
Department of Community Medicine  
PSG Institute of Medical Science & Research  
Coimbatore, Tamil Nadu

**Dr. Anil C. Mathew Ph.D**  
Professor of Biostatistics  
Department of Community Medicine  
PSG Institute of Medical  
Sciences and Research  
Coimbatore - 641 004

Forwarded by  
**Dr. K.K. Jose**  
Head of the department of Biostatistics  
St. Thomas College, Palai, Kerala





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E-mail : psgmedschool@gmail.com Website : www.psgimsr.ac.in

## CERTIFICATE

This is to certify that the project work entitled "The Association of Duration of Diabetes with Erectile Dysfunction among Type 2 Diabetes Patients- A Cross Sectional Study in South India" is a record of original work done by **Sarath Mohan** under my guidance in partial fulfilment of the requirements for the degree of **Master Science in Biostatistics** of Mahatma Gandhi University, Kottayam. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associateship or Fellowship or other similar title to any other candidate of this or any other university.

*Anilmathew*  
**Dr. Anil C Mathew**  
Professor of Biostatistics  
Department of Community Medicine  
PSG Institute of Medical Science & Research  
Coimbatore, Tamil Nadu

**Dr. Anil C. Mathew Ph.D**  
Professor of Biostatistics  
Department of Community Medicine  
PSG Institute of Medical  
Sciences and Research  
Coimbatore - 641 004

Forwarded by

**Dr. K.K. Jose**

Head of the department of Biostatistics  
St. Thomas College, Palai, Kerala





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08/08/2019

## CERTIFICATE

This is to certify that the project entitled "RISK ESTIMATION IN CANCER SURVIVAL USING FRAILTY MODELS" is a record of original work done by SEJIL MARIYA SEBASTIAN under my supervision in partial fulfilment of the requirements of the degree of Master of Science in Biostatistics of Mahatma Gandhi University, Kottayam. I further certify that the project work has not been previously formed the basis for the award of any other Degree or Diploma or other similar title to any candidate of this or any other university.

Dr. Jagathnath Krishna K M

Assistant Professor in Biostatistics

Division of Cancer Epidemiology & Biostatistics

## CERITFICATE

This is to certify that **Ms. Sujitha Selvakumar 2<sup>nd</sup> M.Sc Biostatistics** student of St. Thomas College palai has successfully completed her project work entitled **“Integrated Road Traffic injuries surveillance – Chennai, Tamil Nadu”** from **27<sup>th</sup> May 2019 to 2<sup>nd</sup> August 2019** at Indian Council of Medical Research, National Institute of Epidemiology, Chennai, Tamil Nadu under my supervision and guidance.

*Manickam*  
*02/08/19*

Dr. P.Manickam B.S.M \$ S.,

M.Sc., Ph. D.,

Scientist E

ICMR-NIE, Chennai





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08/08/2019

## CERTIFICATE

This is to certify that the project entitled "PHYSICAL ACTIVITY AND BREAST CANCER RISK BY MENOPAUSAL STATUS IN THIRUVANANTHAPURAM" is a record of original work done by SANDRA VS under my supervision in partial fulfilment of the requirements of the degree of Master of Science in Biostatistics of Mahatma Gandhi University, Kottayam. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associateship or Fellowship or other similar title to any candidate of this or any other university.

Dr. Aleyamma Mathew

Professor & Head

Division of Cancer Epidemiology & Biostatistics



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## CERTIFICATE

This is to certify that the project entitled "POPULATION ATTRIBUTABLE FRACTION FOR LIVER CANCER DUE TO ALCOHOL CONSUMPTION" is a record of original work done by **SHERIN MANICHEN** under my supervision in partial fulfilment of the requirements of the degree of Master of Science in Biostatistics of Mahatma Gandhi University, Kottayam. I further certify that the project work has not previously formed the basis for the award of any other Degree or Diploma or Associateship or Fellowship or other similar title to any candidate of this or any other university.

Dr. Preethi Sara George

Additional Professor in Biostatistics  
Division of Cancer Epidemiology & Biostatistics