# **CURRICULUM VITAÉ**

#### **Pranab Kumar Das**

Centre for Studies in Social Sciences, Calcutta

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## **Current position**

Associate Professor of Economics, Centre for Studies in Social Sciences, Calcutta (since 2007-)

# **Professional experience**

Fellow in Economics (Assistant-Associate Professor), Centre for Studies in Social Sciences, Calcutta, 2001- 2006.

Research Officer (Assistant Professor Equivalent), RBI-Endowment for Research in Industrial Finance in India, Centre for Studies in Social Sciences, Calcutta, 1992-2001.

# Filed of specialization

Macroeconomics, Financial Economics - Stock Market, Banks and Financial Institutions, Asymmetric Information and Firm Investment, Applied Time Series and Panel Data Econometrics.

### **Current research interest**

Optimal public policy in a finite horizon dynamic model. Evolutionary dynamics of financial system architecture. Capital inflow and financial crisis. Finance, growth, inequality.

### **Education**

Ph.D. (Economics), 2003, Jadavpur University, Kolkata

**Ph.D Dissertation** An inquiry into allocation of credit between fixed capital and working capital.

### **Awards**

UGC-NET Fellowship, 1989.

## Visiting and other positions

- 1. **Country Advisor**, Tax OLG Model for India, World Bank, Washington D.C., April 2019 March 2020.
- 2. Visiting Researcher, School of Economics, University of East Anglia, UK, June 2012.
- 3. **Visiting Fellowship**, ESRC–ICSSR International Exchange Programme at Essex Business School, University of Essex, UK, May July, 2009.
- 3. **Directer d' Etudes Associé (Visiting Professor)**, EHESS, Maison des Sciences de l'Homme, Paris, France, May 2007.
- 4. **Visiting Professor**, Institute of Social Studies, The Hague, The Netherlands, June 2007.
- 5. **Visiting Researcher**, Indo-French Programme, Maison des Sciences de l'Homme, Paris, France, September 2006.
- 6. **Junior Research Fellow**, Centre for Economic Studies, Department of Economics, Presidency College, Kolkata, August 1989 October 1992.

### **Publications**

#### **Journal**

- 1. In search of an optimal public public policy in a pandemic: The question of lives versus livelihood (jointly with Gopal K. Bask and Chandramauli Chakraborty), **Journal of Economic Analysis**, **3**, 4, https://doi.org/10.58567/jea03040002. (2024).
- 2. The British Stock Market, currencies, brexit, and media sentiments: A big data analysis (with Gopal K. Basak, Sugata Marjit, Debashis Mukherjee, Lei Yang), **North American Journal of Economics and Finance**, **64**, 101861, https://doi.org/10.1016/j.najef.2022.101861. (2023).
- 3. Coupled dynamics with an external system and application to international finance (jointly with Gopal K. Basak, Allena Rohit), **Physica A: Statistical Mechanics and Its Applications**, **520**, 409-432 ,https://doi.org/10.1016/j.physa.2019.01.012. (2019).
- 4. Demonetization and its aftermath: an analysis based on twitter sentiments (jointly with P. Ray, A. Chakrabarti, B. Ganguli), **Sādhanā**, **43**, 186, 1-10, (Journal of the Indian Academy of Science). (2018).
- 5. Capital inflow-terms of trade nexus: Does it lead to financial crisis? (jointly with Gopal K. Basak, Allena Rohit), **Economic Modelling, 65**, 18-29. https://doi.org/10.1016/j.econmod.2017.04.025 (2017).
- 6. Are religious minorities deprived of public goods provision? Regional evidence from India (jointly with Saibal Kar), **THE journal of developing areas**, **50**, 1, 351-372. (2016).
- 7. Finance Constraint and Firm Investment: A Survey of Econometric Methodology, **Accounting and Finance Research, 3**(2), 138-144. (2014).

- 8. Costly Information, Finance and Firm Investment: New Directions of Research of Empirical Methodology, **Proceedings 59**<sup>th.</sup> **World Statistics Congress**, 2567-2572, Hong-Kong. (2013).
- 9. A stochastic frontier approach to modelling financial constraints in firms: An application to India (jointly with Sumon Kumar Bhaumik and Subal C. Kumbhakar), **Journal of Banking and Finance**, **36**, 1311- 1319. (2012).
- 10. Foreign capital inflow, exchange rate dynamics and potential financial crisis (jointly with Gopal K. Basak and Sugata Marjit), **Current Science, Mathematical Finance Special Issue, 103**, 6, 673-684. (2012).
- 11. Fundamentals, financial factors and firm investment in India: A Panel VAR approach, **The Indian Economic Journal, 55**, 4, 4-14. (2008). https://doi.org/10.1177/0019466220080402
- 12. A Portfolio Theory of Excessive Foreign Borrowing and Capital Control in a Small Open Economy (jointly with Sugata Marjit and Samaresh Bardhan), **Research in International Business and Finance**, 21, 175-187. (2007). https://doi.org/10.1016/j.ribaf.2006.03.004
- 13. Real Sector, Banks and Policy Issues: An Exploration in a Dynamic Macroeconomic Model, **Keio Economic Studies**, 43, 2, 35-60. (2006).
- 14. Credit Rationing and Firms' Investment and Production Decisions, **International Review of Economics and Finance, 13**, 1, 87-114. (2004). https://doi.org/10.1016/S1059-0560(03)00028-5
- 15. Issues in GDP Growth, Investment and Regional Disparity Contemporary Macroeconomic Events in India (Section on Finance and Investment), **India Macroeconomics Annual 2004-2005.** (2005).
- 16. Contemporary Macroeconomic Events of India: Some Analytical Discussions (Section on Finance, Banking and Real Sector), **India Macroeconomics Annual 2003-2004.** (2004).
- 17. Are Listed Indian Firms Finance Constrained? Evidence for 1991-92 to 1997-98 (jointly with Amiya Kumar Bagchi and Bhaswar Moitra), **Economic and Political Weekly**, 37, 8, 727-736. (2002).
- 18. Small Scale Industry in West Bengal, 1971-97 (jointly with Robin Mukherji and Uttam Bhattacharya), **Economic and Political Weekly, 34**, 48, M157-M162. (1999).
- 19. Bank Credit, Output and Bank Deposits in West Bengal and Selected States in India (jointly with Pradip Maiti), **Economic and Political Weekly, 33**, 47/ 48, 3081-3088. (1998).

# Chapters in edited books

1. Impact of Cost and Profit Efficiency of the Public Sector Banks Providing Credit to Agriculture Sector in India (jointly with Sadhan Kr. Chattopadhyay) in B. Chatterjee and A. K. Karmakar Eds. Indian Economy: Liberalization, Finance and Education – Essays in Honour of Professor Dhiresh Chandra Bhattacharyya (2021). Shandilya.

- 2. Demographic Changes and Economic Growth: Observations from India (jointly with Saibal Kar), in J. Jalan, S. Marjit and S. Santra Eds. **India Public Finance and Policy Report 2016: Fiscal Issues and Macroeconomy** (2016). OUP.
- 3. Asymmetric Demography, Capital Inflow and Growth: The Role of Financial Sector Development (jointly with Saibal Kar), in S. Verma and K. Singh eds. **Slow Down, Banks and Role of Apex Banking Institutions on the Market Economy of India: The Way Forward**, CRRiD, Chandigarh. (2015).
- 4. A Study of Demographic and Financial Development in India (jointly with Saibal Kar), in Ramiro Albrieu and Jose Maria-Fanelli eds. **Asymmetric Demography and the Global Economy: Growth Opportunities and Macroeconomic Challenges in an Ageing World**, Palgrave Macmillan, NY. (2015).
- 5. Finance and Growth An Empirical Assessment of the Indian Economy (jointly with Basudeb Guha-Khasnabis), in Basudeb Guha-Khasnabis and George Mavrotas, eds. **Finance for Growth and Poverty Reduction**, Palgrave, NY. (2008).
- 6. Financial Sector Reforms for Stimulating Investment and Economic Growth The Indian Experience (jointly with Sugata Marjit) in Asian Development Bank ed. **Macroeconomic Management and Government Finances**, Oxford University Press, New Delhi. (2008).
- 7. Does Firm Size Matter in an Imperfect Capital Market: A Study for the Indian Firms, (jointly with Bhaswar Moitra), in Bishwajit Chatterjee et al (Eds.) **Trade, Finance and Development: Essays in Contemporary Economics**, Deep and Deep, New Delhi, 113-138. (2004).

#### Book

1. **Decentralization, Governance and Development – An Indian Perspective**, Ed., Orient Blackswan, New Delhi. (2017).

# **Working papers**

- 1. Optimal Lockdown Strategy in a Pandemic: An Exploratory Analysis for Covid-19 (jointly with Gopal K. Basak, Chandramauli Chakraborty), **arXiv.org**, Cornell University, https://arxiv.org/abs/2109.02512. (2021).
- 1. Informal Sector in GDP: A Panel Estimation Method (jointly with Nitesh Kansara, Gopal K. Basak), **SSRN Research Paper No. 3808169**. http://dx.doi.org/10.2139/ssrn.3808169 (2021).
- 2. Lockdown and GDP Contraction in India: A National Income Perspective (jointly with Gopal K. Basak, Sandip Sarkar), **SSRN Research Paper No. 3644401**. http://dx.doi.org/10.2139/ssrn.3644401. (2020).
- 3. British Stock Market, BREXIT and Media Sentiments A Big Data Analysis (jointly with Gopal K. Basak, Sugata Marjit, Debashis Mukherjee, Lei Yang), **CESifo Working Paper No. 7760**, Munich, Germany. (2019).

- 4. The Dynamics of Finance-Growth-Inequality Nexus: Theory and Evidence for India (jointly with B.Ganguli, S. Marjit, S. Sen Roy), **CESifo Working Paper No. 7429,** Munich, Germany. (2018).
- 5. Contagion: Can It Occur Without Trading Relations? (jointly with G. K. Basak and A. Rohit), **SSRN Working Paper No. 3473676**. http://dx.doi.org/10.2139/ssrn.3473676. (2019).
- 6. Public Expenditure, Demography and Growth: Theory and Evidence from India (jointly with Saibal Kar), **IZA Discussion Paper No. 9721**, Bonn, Germany. (2016).
- 7. A Mathematical Model of Foreign Capital Inflow, (jointly with Gopal K. Basak and Allena Rohit), **arXiv.org**, Cornell University, http://arxiv.org/abs/1603.02438 (USA). (2017).
- 8. Firm level investment and credit constraints in India, 1997-2007: A stochastic frontier approach (jointly with Sumon Bhaumik and Subal C. Kumbhakar), **William Davidson Institute Working Paper No. 1010**, University of Michigan, USA. (2011).
- 9. Religious Minorities and Public Goods in India: Evidence from Rural West Bengal (jointly with Saibal Kar and Madhumanti Kayal), **IZA Discussion Paper No. 6154**, Berlin, Germany. (2011).
- 10. Financial development and growth in China and India Some speculations (jointly with Basudeb Guha-Khasnabis), **Working Paper No. 53**, Programa de Asia Pacifico, Centro Argentino de Estudios Internacionales, Argentina. (2010).
- 11. Finance and Growth: An Empirical Assessment of the Indian Economy (jointly with Basudeb Guha-Khasnabis), **UNU-WIDER Research Paper No. 2007/13**, World Institute of Development Economics Research, Helsinki, Finland. (2007).
- 12. Stochastic Rationing of Credit and Economic Activities in a Model of Monopolistic Competition, **Occasional Paper No. 154,** Centre for Studies in Social Sciences, Calcutta, 1996.
- 13. Fundamentals and Share Prices in the Drugs and Medicines Industry (jointly with Manjusri Bandyopadhyay, **Occasional Paper No. 152,** Centre for Studies in Social Sciences, Calcutta. (1995).
- 14. A Study in Indian Stock Price Behaviour: January 1991 May 1993 (jointly with Manjusri Bandyopadhyay), **Occasional Paper No. 140**, Centre for Studies in Social Sciences, Calcutta, India. (1993).

# **Research reports**

- 1. Strengthening Health Sector Through Satellite Communication in the Andaman and Nicobar Islands, **Research Report, CSSSC**. (2018).
- 2. The State of Capital Market and Household Saving in West Bengal Results from a Household Survey, **Research Report**, CSE-CSSSC Initiative on Capital Market Research (2017).

- 3. Asymmetric Demography and Global Financial Governance: In search of growth and common interests in the post-crisis world: A Study of Indian Demographic and Financial Changes, **Research Report**, CSSSC. (2012-13).
- 4. Minority Concentration District Project, **Research Report**, CSSSC (2007-08). (Fourteen separate research reports for 11 districts of West Bengal and one each for A & Nicobar Island, Orissa and Sikkim). (2009).
- 5. Urban Poverty Reduction Strategy, **Research Report**, CSSSC. (2007).
- 6. Financial sector developments and growth in China and India Some speculations, prepared for **Southern Engines of Global Growth China, India, Brazil, South Africa,** WIDER, United Nations University, Helsinki. (2007).
- 7. Finance and Growth An Empirical Assessment of the Indian Economy, prepared for **Finance for Growth and Poverty Reduction,** WIDER, United Nations University, Helsinki. (2005).
- 8. Strengthening Rural Decentralization and Baseline Survey in West Bengal Districts, **Research Report**, CSSSC. (2006).
- 9. Groundwater Markets in West Bengal: Emergence, Evolution and Market Structure, **Research Report Round V**, South Asia Network of Economic research Institutions (a GDN subsidiary). (2005).
- 10. Interest Rates, Investment Demand and Industrial Growth A Medium Term Study, **Research Report**, CSSSC. (2001).

# **Teaching**

- 1. **Issues in International Macroeconomics and Finance**, **M.A. II Year**, Indian Institute of Foreign Trade, Kolkata Campus, 2020- .
- 2. **Advanced Topics in Macroeconomics**, **M.A. I Year**, Indian Institute of Foreign Trade, Kolkata Campus, 2019- .
- 3. **Macroeconomics I, 5 Year Integrated Programme in Management**, Indian Institute of Management Indore, 2x20 Sessions, 2019.
- 4. **Times Series Econometrics Theory and Hands on Training** for Officers of Department of Economic and Policy Research, Reserve Bank of India, Mumbai, June, 2018. (20 Hours).
- 5. **International Finance and Macroeconomics,** International Trade Special Paper II, M.A. Semester IV, Rabindra Bharati University, Kolkata, 2016.
- 6. **Dynamic Public Finance**, **MA Public Finance** (**Special Field**), Department of Economics, Jadavpur University, Kolkata, 2014.
- 7. **Macroeconomics and Finance**, Research Methodology in Quantitative Economics Module II and III, Ph.D. course work recognised by the University of Calcutta, Centre for Studies in Social Sciences, Calcutta, 2009 .
- 8. **Applied Time Series Econometrics**, Research Methodology in Quantitative Economics Module III, Ph.D. course work recognised by the University of Calcutta, Centre for Studies

- in Social Sciences, Calcutta, 2009 .
- 9. **Financial Economics**, M.Phil. (University of Calcutta), Institute of Development Studies, Kolkata, 2005-11.
- 10. **Macroeconomics**, Research Training Programme, Ph.D. Centre for Studies in Social Sciences, Calcutta, 1996-2006.
- 11. **Econometric Theory and Applications**, Research Training Programme, Ph.D. Centre for Studies in Social Sciences, Calcutta, 1996-2006.
- 12. Industrial Economics, B.Tech. (Chem. Engg.), University of Calcutta, June-Dec., 2000.

## **Special lectures and courses**

- 1. From the fastest growing Emerging Market Economy to a \$ 5 Trillion Economy: Journey ahead for India, **Special Guest Speaker, Merchant's Chamber of Commerce & Industry Economic Forum**, Kolkata, Sept. 20, 2019.
- 2. Financial Constraint and Firm Investment, **UGC Refresher Course in Management Studies**, Deptt. of Commerce, University of Calcutta, Jan. 18, 2019.
- 3. Financial Econometrics, **Workshop on Applied Econometrics**, Department of Economics, Rabindra Bharati University, Kolkata, March 09, 2016.
- 4. Time Series Models, **Workshop on Applied Econometrics**, Department of Economics, Gour Banga University, Malda, Nov. 06, 2016.
- 5. Empirical Methodology on Finance Constraint and Firm Investment, **Workshop on Corporate Finance** Center for Advanced Studies, Department of Economics, Jadavpur University, Kolkata, March 21, 2014.
- 6. Financial System Architecture: Representative Models in the Literature, Nov. 4 and Nov. 07, 2013, **Economics Study Group Seminar**, Centre for Studies in Social Sciences, Calcutta.
- 7. Public Expenditure Restructuring and Prudent Management, **Institute of Chartered Accountants of India, Eastern Regional Centre**, Kolkata, July 19, 2013.
- 8. Financial System in Macroeconomic Models (8 lectures), **Training cum Research Workshop in Financial Economics**, Centre for Studies in Social Sciences, Calcutta, 2003-2008.
- 9. Financial Econometrics (8 lectures), **Training cum Research Workshop in Financial Economics**, Centre for Studies in Social Sciences, Calcutta, 2003-2008.
- 10. Financial Markets in India (4 lectures), **Refreshers Course in Financial Economics**, Department of Economics, Jadavpur University, Kolkata, Nov. 2003.
- 11. Informational Imperfections in Financial Markets Theory and Testing (one month), **Applied Finance for Professionals**, ENRECA Programme, DANIDA, Centre for Studies in Social Sciences, Calcutta, 2002.
- 12. Financial Markets and Institutions in India (4 lectures), **5th Refreshers Course in Business Management**, Academic Staff College, University of Calcutta, Feb. 1999.

# **Major conference participation**

### **International**

- 1. Contagion: Can it occur without trading relations?, **FinEcon Conference**, International Management Institute- Kolkata, Dec. 17-18, 2019.
- 2. FDI and Gains in Productivity in the Indian Manufacturing Sector, **WEAI 12<sup>th</sup> International Conference**, Jan. 07 10, 2016, Nanyang Technological University, Singapore.
- 3. FDI and Gains in Productivity: The Case of Indian Manufacturing in the post-reform Era, **Leveraging FDI for Sustainable Economic Development in South Asia**, Asia Research Centre, Copenhagen Business School, Copenhagen, Denmark, Oct. 02 03, 2015.
- 4. Determinants of Drop outs in rural economies: Results from a large scale survey in West Bengal, **4**<sup>th</sup> **West Bengal Growth Conference**, Sampling and Official Statistics Unit, Indian Statistical Institute and IGC, LSE, Kolkata, India, Dec. 26 27, 2014.
- 5. A Study of Indian Demographic and Financial Changes, **Asymmetric Demography, Growth, and Global Financial Governance**, Facultad de Ciencias Economicas, University of Buenos Aires and Centro de Estudios de Estado y Sociedad, Buenos Aires, Argentina, December 2, 2013.
- 6. Costly information, finance and firm investment New directions of research in empirical methodology, **Contemporary Issues in Finance (STS073), World Statistics Congress 2013**, Convention and Exhibition Centre, Hong Kong, Aug. 25 30, 2013.
- 7. Financial Sector Developments and Growth in China and India Some Speculation, **Growth Dynamics and Institutions China and India**, Centre for Studies in Social Sciences, Calcutta and School of Accounting and Finance, University of Queensland, Australia, Dec. 17 18, 2008.
- 8. Financial Sector and Growth Pre- and Post-Reform Era in India, **IBSA Conference**, Indian Council of Social Science Research, New Delhi, India, October 15, 2008.
- 9. Discussant on India's Planning Era Past and Present, **India and France 60 Years Celebration of Indian Independence**, Maison des Sciences de l'Homme, Paris, France, May 31 June 01, 2007.
- 10. Finance and Growth in China and India, **UNU-WIDER Project Meeting on Southern Engines of Global Growth China, India, Brazil and South Africa,** Beijing, China, Jan. 12 13 Jan. 2007.
- 11. **Global Development Network (GDN) Conference**, Beijing, China, Jan. 14 to 16, 2007.
- 12. Private Investment in Groundwater Irrigation Do the Public Institutions Matter? **Conference on Institutions and Development,** School of Business, Reading University, Whiteknights Campus, U.K. Sept. 22-23, 2006.
- 13. Finance and Growth An Empirical Assessment of the Indian Economy, **Financial Sector Development for Growth and Poverty Reduction,** UNU-WIDER, Helsinki, Finland, July 1-2, 2005.

- 14. Fundamentals, Financial Factors and Firm Investment in India: A Panel VAR Approach, **Global Financial Integration, Institute of Development Studies**, Kolkata, India, Feb. 09 11, 2005.
- 15. Imperfect Capital Market and Investment in the Developing Countries, **Institutional Framework for Industrial Development**, Centre for Basic Research, Kampala, Uganda, August 24 25, 2004.
- 16. Private Investment in Groundwater Irrigation, V<sup>th.</sup> South Asia Network of Economic Research Institutions Annual Conference, Colombo, Sri Lanka, Aug. 15 17, 2003.

### **National**

- 1. Estimation of investment when credit market is imperfect: Existing literature and SFA, **RBI**, **Central Office**, June 14, 2018, Mumbai.
- 2. An inquiry into the equilibrium relation between equity prices, dividend and guilt yields in India, **2**<sup>nd</sup>. **Statistical Methods in Finance (StatFin Conference)** organized by the CMI and ISI, Chennai during Dec. 18 22, 2016.
- 3. Fiscal Issues and Demography, **Conference on India Public Finance and Policy Report**, CTRPFP, Sept. 17 − 18, 2015, Centre for Studies in Social Sciences, Calcutta.
- 4. Asymmetric Demography, Capital Inflow and Growth: The Role of Financial Sector Development, **Slow Down, Banks and Role of Apex Banking Institutions**, Centre for Research in Rural and Industrial Development, Chandigarh, India, Feb. 26-27, 2015.
- 5. Dropping out of School: Results from a large scale survey in West Bengal, **West Bengal Economy**, Centre for Advanced Studies, Department of Economics, Jadavpur University, Kolkata, Jan. 2 –3, 2015.
- 6. Asymmetric Demography, Financial System Architecture and Capital Inflow Indian Case, **Asymmetric Demography and Global Financial Governance: In search of growth and common interests in the post-crisis world**, Centre for Studies in Social Sciences, Calcutta, India, Feb. 03, 2014.
- 7. Foreign capital inflow, exchange rate dynamics and potential financial crisis, **Money, Finance and Macroeconomics of the Real Sector**, Institute of Development Studies Kolkata, India, April 26 28, 2012.
- 8. Decentralization and Service Delivery A Study in the Rural Governance of the *Gram Panchayats* in West Bengal, **XIII Finance Commission Workshop**, Institute of Rural Management Anand, India, Dec. 22 23, 2008.
- 9. Firms Investment and Production Decisions in a Monopolistic Market, **The Indian Econometric Society Conference**, Mar. 21 23, 1996, Indian Statistical Institute, Bangalore, India.

### **Research grants**

1. **Ayushman Bharat: Outreach and Efficacy Across Indian States** (Principal Investigator), Indian Council of Social Science Research, Ministry of Education, Govt. of India (2023).

- 2. Strengthening Health Sector Through Satellite Communication in Andaman and Nicobar Island (Principal Investigator), ISRO, Govt. of India (2018).
- 2. The State of Capital Market and Household Saving in West Bengal CSE-CSSSC Initiative on Capital Market Research, (Project Coordinator), Investor Protection Fund, Calcutta Stock Exchange (2016).
- 3. Asymmetric Demography, Financial System Architecture and Financial Integration: An Exploratory Study for India, (Joint Investigator), CEDES, Argentina and IDRC, Canada, (2012-13).
- 4. **Minority Concentration Districts in India Baseline Survey** (Project Co-ordinator), Ministry of Minority Affairs, Government of India (2007-09).
- 5. **Urban Poverty Reduction Strategy for Kolkata** (Co-investigator), UNDP and Government of India, (2007).
- 6. Strengthening Rural Decentralization (Co-investigator), DFID, UK (2005-06).
- 7. **Groundwater Market in West Bengal: Emergence, Evolution and Market Structure** (Coinvestigator), South Asia Network of Economic Research Institutions (a GDN subsidiary) (2003-04).
- 8. **Interest Rates, Investment Demand and Industrial Growth A Medium Term Study**, (Co-investigator), Industrial Development Bank of India (1999-2001).

#### **Editorial**

Academic Editor, PLOS ONE, San Francisco, USA, Cambridge, UK.

### Referee

Empirical Economics, Economic Systems, International Review of Economics and Finance, Economic Modelling, Emerging Market Finance and Trade, Indian Growth and Development Review, Journal of Applied Economic Research, Journal of Social and Economic Change, New Zealand Economic Papers, Quarterly Journal of Economics.

### **Member of Professional Bodies**

Nominator, Infosys Science Foundation, Bangalore, INDIA. Life Member Indian Statistical Institute, Kolkata, INDIA. Member, International Statistical Institute, The Hague, The Netherlands.