

**Conference Proceedings**

## **IMCMSS 2020 MELBOURNE**



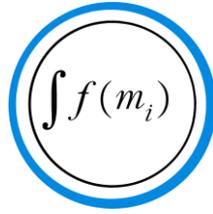
*Institute of Mathematics and Management Conference  
on Management & Social Sciences 2020*



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Australia**

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### Opening Keynote Speaker



**Dr. (Mrs).W.G. Samanthi Konarasinghe**

**Academic Director, Institute of Mathematics and Management, Sri Lanka**

***Topic: Use and Misuse of Statistics in Management and Social Science Research***

Dr.(Mrs). W.G.Samanthi Konarasinghe, an award-winning Scientist has served as a Statistical Consultant and a Lecturer for more than two decades. She has developed various Mathematical and Statistical Techniques for the world. They are Circular Model; Circular indicator; Coefficient of Stability; Sama Circular Model; Sama Circular Indicator. Among them, the “Sama Circular Model” is highly valued and applied in various fields. She was awarded the prestigious “IMRF Best Scientist Award” from India for valuing her contribution to the field of Statistics. Most of the real-life data follow irregular wave-like patterns; hence it is difficult to forecast them. For example; share market prices, tourist arrivals, consumer price index, unemployment, blood glucose level of a person, the water level of a river, air temperature, etc. are associated with high volatility, making them difficult to forecast. The Decomposition Techniques and AutoRegressive Integrated Moving Average (ARIMA) were the most used techniques for the purpose. However, the Sama Circular Model was superior to them in many real-life applications, making her finding unique. Dr. Samanthi is in constant demand for International Research Conferences. She has been a; keynote speaker, invited speaker, guest lecturer, guest of honor, and chief guest in Thailand, Malaysia, Singapore, India, Australia, and Germany. Her educational background is; Doctor of Philosophy (Ph.D.in Statistics), Master of Science (M.Sc in Applied Statistics), Master of Business Administration (MBA), PG Diploma (Industrial Mathematics), Bachelor of Science (B.Sc-Mathematics), Diploma in Classical Music. This rare combination of educational qualifications made her a multi-disciplinarian. It paved the path for her to become a researcher and a research consultant in various fields; Financial Markets, Medicine and Health Care, Education, Business, and more. She also researches on "Indigenous Knowledge of Sri Lanka and other countries". Dr. Samanthi is a member of; American Statistical Association (ASA), Institute of Applied Statistics, Sri Lanka (IASSL), and National Science Foundation (NSF), Sri Lanka. Also an Editorial board member of the American Journal of Theoretical and Applied Statistics (AJTAS), an Advisory member and Technical/ Scientific Conference Committee member of the Scientific and Technical Research Association (STRA) of the Eurasia Research. Most interestingly, she is not only a Scientist but also an Artist; a Violinist, Painter, Writer, Drama producer, and Actress. The membership magazine of the American Statistical Association; “AMSTATNEWS” wrote two testimonials on her,

<https://magazine.amstat.org/blog/2018/07/01/konarasinge/>

<https://magazine.amstat.org/blog/tag/w-g-samanthi-konarasinghe/>



### **Keynote Speaker**



**Associate Professor. Dr. Bedanta Bora**  
**Head of the Department of Management Studies, Sikkim Manipal University**  
**SMIT Campus, Sikkim, India**

#### ***Topic: Challenges in Managing Business in Times of COVID -19***

Dr. Bedanta Bora, MBA, Ph.D is presently engaged as an Associate Professor and Head Management Studies at Sikkim Manipal Institute of Technology, Majhitar, East Sikkim, India. Graduated in Commerce with Hons from the University of Gauhati, Assam, India, he received his Master Degree in Business Administration (MBA) from Tezpur Central University, Tezpur, Assam, India. He was awarded Doctor of Philosophy in faculty of Commerce in the year 2010 under the University of Gauhati, Assam, India. Dr. Bora is having around 20 years of professional exposure in Academics, Training, Executive Education and Development Sector. He is currently supervising doctoral scholars in their selected area of research and has been regularly contributing articles to several national and international journals of repute. Dr. Bora has to his credit around 65 + research papers (select publications in Scopus) with participation in 20 professional workshops and attended around 33 academic conferences held in varied research domains. He has been a facilitator in various MDPs/FDPs and conducted/coordinated different workshops/camps organized time to time for Civil Servants, Government Officials and Personnel from industrial Units. He happened to be a Doctoral Programme (Ph.D Evaluation) Examiner for Centre for Research, Anna University, Chennai, India and achieved recognition of being panel discussant/technical chair and resource person in diverse programmes organized by the Ministry of MSME, Govt. of India. Dr. Bora was encouraged to participate as a Technical Chair at “International Symposium on Frontiers of Infrastructure Finance (ISFIF- 2017)” held in Indian Institute of Technology, Kharagpur, India, during Dec, 2017. He is presently in Examination Panel Board (External) for College of Agricultural Engineering and Post-Harvest Technology, Central Agricultural University, Sikkim, SRM University, Sikkim along with few other institutions of significance in the country. As far as global exposure is concerned, Dr. Bora has been abroad quite a few times (near about 20 nations) in order to join different International Conventions organized in selected splendid countries of the world. He was invited to deliver Key Note Address and 2 chair Technical Sessions at different symposiums held at international level. Dr. Bora was an International Committee Member for - “World Conference on Business and Management (WCBM-2019)” held in Kuala Lumpur, Malaysia, during June, 2019,



“World Conference on Business and Management (WCBM-2018)” held in Jeju Island, South Korea, during June, 2018, “World Conference on Business and Management (WCBM2017)” held in Bali, Indonesia, during July, 2017, “World Conference on Business and Management (WCBM-2016)” held in Danang, Vietnam, during June, 2016, “World Conference on Business and Management (WCBM- 2015)” held in Seoul, South Korea, during June-July, 2015- and also a Scientific Committee Member at “4th Annual International Conference on Marketing (ICOM-2016)” held in Bangkok, Thailand, during May, 2016. Dr. Bora enriched his exposure with delivering an Invited Talk and serving as a Rapporteur in “International Conference on Global Trends in Management, Economics, Commerce and Legal Studies, Thailand-2018” held at Asian Institute of Technology, Bangkok, Thailand, during Nov, 2018, further with being a Key Note Speaker at “2nd International Conference on Management and Organization (MGMTORG-2017)” held in Shanghai, China, during October, 2017, Event Chair/Host at “2nd International Conference on Economics and Finance (ICECOFIN2017)” held in Shanghai, China, during October, 2017, Session Chair/Country Co-Chair at “World Conference on Business and Management (WCBM-2017)” held in Bali, Indonesia, during July, 2017, Chair-Technical Session at “Annual Vietnam Academic Research Conference on Global Business, Economics, Finance & Social Sciences” held at Dai Nam University, Hanoi, Vietnam, during August, 2016, Country Co-Chair at “World Conference on Business and Management (WCBM- 2015)” held in Seoul, South Korea, during June-July, 2015 and Conference Session Chair at “11th IEEE International Society for Business Innovation and Technology Management Conference” held at Tsinghua University, Beijing, China, during May, 2013. Dr. Bora claimed a Best Paper Award in “International Conference on Global Trends in Management, Economics, Commerce and Legal Studies, Thailand-2018” held at Asian Institute of Technology, Bangkok, Thailand, during Nov, 2018 and was offered with a Gold Medal for best presentation at “2nd International Conference on Marketing (ICOM2014)” held in Colombo, Sri Lanka, during Feb, 2014. He is presently having an 3 International Collaboration (MOU) with People and Global Business Association, Seoul, South Korea. Dr. Bora is in National Advisory Board–International Journal of Multidisciplinary Approach and Studies, International Journal of Arts, Humanities and Management Studies, Orbit Publication, India. He had been a Reviewer for Herald Journal of Marketing and Business Management, Nigeria, Issues in Business Management and Economics, Management Studies-USA, Universal Journal of Accounting & Finance, USA and is currently a member of a few highly acclaimed global academic forums, namely, IERDC-Hong Kong, IACSIT-Singapore, APBITMS-Philippines and EBESTurkey. Dr. Bora is at the moment in Editorial Board of Horizon Research Publishing Corporation, USA, David Publishing Company, USA, Journal of New Frontiers in Economics and Business, Sri Lanka and Global Business and Finance Review (Scopus), South Korea. His domain of interest is interdisciplinary and includes Sales, Marketing, Tourism and Financial Management.



### Special Talk



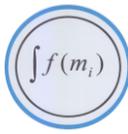
**Professor. Dr. (Mrs). Anindita Adhikary**  
**Department of Management Studies**  
**Sikkim Manipal University**  
**SMIT Campus, Sikkim, India**

#### *Topic: Potential Implications of COVID -19 on Financial Market*

Dr. Anindita Adhikary, MBA, Ph.D is currently working as a Professor in Department of Management Studies, Sikkim Manipal Institute of Technology, Sikkim, India. Graduated in Commerce (Hons) from the University of Gauhati, Assam, India, she was awarded Master Degree in Business Administration (MBA) by Tezpur Central University, Tezpur, Assam, India. Dr. Adhikary earned her Doctorate in Faculty of Commerce in 2009 from the University of Gauhati, Assam, India and has 20 years of professional experience in academics and corporate sector. She has more than 60 research papers (select publications in Scopus) to her credit and attended magnificent conferences held in various parts of the globe. Scholars are pursuing / accomplished Doctoral Projects under her direct supervision. Dr. Adhikary had participated in 25 professional workshops and served as a Guest Faculty at different conventions organized time to time for Civil Servants, Govt. Officials and Personnel from supporting institutions. She had been a speaker as well at diverse programmes organized by the Ministry of MSME, Govt. of India. Dr. Adhikary had facilitated/coordinated different MDPs/FDPs along with Symposia/Camps held at regular intervals. She got an opportunity to be an External Examiner for Sikkim (Central) University, Sikkim, India and was a Resource Person at National Level Training Programme on “Managing Finance for Improving Organizational Performance and Corporate Social Responsibility” conducted by National Productivity Council, Ministry of Commerce and Industry, Govt. of India, held at Gangtok, Sikkim during June 06-10, 2016. She also delivered talk at an Orientation Programme on Export and Import via Nathula Pass organized by the Department of Commerce and Industries, Govt. of Sikkim in collaboration with Small Industries Service Institute, Govt. of India. Dr. Adhikary is in National Advisory Board–International Journal of Multidisciplinary Approach and Studies, International Journal of Arts, Humanities and Management Studies, Orbit Publication, India. She happens to be the Reviewer for Research in Business and Management Journal, Issues in Business Management and Economics, International Journal of Education Policy Research and Review, Issues in Scientific Research-Egypt and International Journal of Asian Business and Information Management-IGI-Global-USA.



At the moment, she is an Editorial Board Member of 2 Horizon Research Publishing Corporation–USA and Journal of New Frontiers in Economics and Business, Sri Lanka. Dr. Adhikary has been abroad a number of times in order to have an enriched exposure at international level and claimed a Best Paper Award (co-authored) in “International Conference on Global Trends in Management, Economics, Commerce and Legal Studies, Thailand-2018” held at Asian Institute of Technology, Bangkok, Thailand, during Nov, 2018. She was a Scientific Committee Member at “4th Annual International Conference on Marketing (ICOM-2016)” held in Bangkok, Thailand, during May, 2016. She presently holds membership of reputed global forums namely, EBES-Turkey and IACSIT-Singapore. Her area of interest includes Accounting, Finance and International Trade.



## Use and Misuse of Statistics in Management and Social Science Research

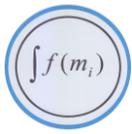
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### ABSTRACT

Scientific forecasting plays a vital role in research and management of a large number of fields. Scientific forecasting is based on mathematical and statistical modeling. Mathematical models are deterministic. A deterministic model is one in which every set of variable states is uniquely determined by parameters in the model and by sets of previous states of these variables. Deterministic models are not associated with any randomness; conversely statistical models are associated with the randomness. As such, statistical models have become more prominent in prediction, control and optimization in the fields of; Agriculture, Medicine and Healthcare, Meteorology, Engineering, Biological Sciences, Management, Economics, Finance and Social Sciences. Statistics is a science concerned with uncertainty in real life. It involves in developing and studying methods for; collecting, analyzing, evaluating, interpreting and presenting information. Yet, most of the studies are not really benefited from statistics due to misuse. A misuse of statistics is a pattern of unsound statistical analysis. It can be a result of; mistakes or negligence, lack of statistics knowledge or purposive. Statistics is divided into two main parts; Descriptive Statistics and Inferential Statistics. In descriptive statistics, sample data are analyzed by measures of location and measures of dispersion. This part of the analysis leads to inferential Statistics, which generalizes statistical findings to population. Hence, reliability of inferences highly depends on the sample statistics. In other words, poorly estimated sample statistics leads to unreliable inferences. As such, using proper techniques in data collection and data analysis are equally important. For example, if the data are not from a random sample, then the descriptive statistics become biased estimates for population parameters; probability estimates become unrealistic and so on. Unfortunately, this is the mostly reported misuse in Management and Social Science studies. Misinterpretation of measurement scales of data is another common practice among researchers. For instance, if the measurement scale is ordinal, then the sample mean and the sample standard deviation are not appropriate measurements, yet they are the blindly used techniques. Testing model assumptions, validation and verification are a must in model based analysis, but are ignored. Amidst all, “P-Value hacking” is the most crucial. Whether the root cause for misusing statistics is negligence, lack of knowledge or any other, the outcome of it is not different. Hence the possible damage to the society is same. Therefore, it is essential to pay attention on stopping misuse of statistics.

Keywords: Statistics, Misuse



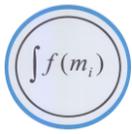
## **Challenges in Managing Business in Times of COVID -19**

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### **ABSTRACT**

Days before, mankind was with no clue at all of a pandemic disaster; no indication of a threat to civilization; political and global dynamics were reasonable; GDP rates were adequate if not flourishing; and the business frameworks were deeply integrated. At this moment as if, all are wiped up to counteract with a phenomenal standstill around the globe. Covid-19' which has just been an alien phase in vocabulary till recently, now becomes an inter-continental debacle causing a bizarre crisis across the world with 28,728,460 infected cases and 920,905 subsequent loss of lives as per recent estimate. (<https://www.worldometers.info/coronavirus/>, updated: Sept 12, 2020). The pulse of this economic disaster is exceptional and challenges to neutralize it are extraordinary, albeit a concrete mitigation strategy against Covid-19' pandemic has kicked off to restrict the consequential fatalities. As such, this discussion is a micro level endeavour to undertake a case review on this global pandemic that has placed the world in entirely 'New Normal'. An effort is made here to objectively assess a few concurrent challenges in managing business during this Covid-19' era. Dun & Bradstreet's recent economy forecast reveals that there is an enhanced likelihood to enter into business bankruptcy with global meltdown. It is perceived that any revival project to offset this human calamity is expected to be prolonged. The same is in-conclusive too on 'Who and What Next'? Till then the case under consideration, perhaps is worth reviewing.



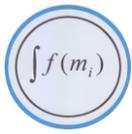
## Potential Implications of COVID -19 on Financial Market

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### ABSTRACT

An unexpected ailment called Corona Virus Disease (Covid-19) has spread globally since December, 2019. The global Covid-19 pandemic that has emerged as a “black swan event” was brought to the world's awareness in January, 2020. The rapid increase of the syndrome and the growing number of confirmed cases has caused a damaging effect on worldwide healthcare systems with propagated outcome on global economy. The pandemic has impacted the financial market including stock markets and banking sector. The projected decrease in GDP for 2020 is shocking with double digit decrease for many counties. The forecasts for 2021 are doubtful and outcomes of the outbreak on financial markets are complicated to estimate. As uncertainties developed, the looming outbreak of the virus brutally impacted the financial sector. Fluctuations in the US financial market have spill-over effects on other economies due to interdependence amongst the contemporary nations. In the US, the S&P 500, the Dow Jones Industrial Average and the Nasdaq dropped noticeably. In addition, 10-year US Treasury bond yields and Europe's bond yields have jumped down. The same was witnessed in Asian markets too. The collapse in global financial markets has worsened already unstable environment with a serious liquidity crisis. In existence of a brittle economy where everything is interconnected, a multitude of steps in the form of fiscal action may go a long way to mitigate different inherent risks. Financial regulators across the countries have meaningfully intervened to ensure liquidity in order to alleviate the ongoing economic standstill. Attracting new capital and fostering a flourishing economy might go a long way in counteracting this global disaster



## **Formal Financial Decision of Regional SME's and Influencing Factors: Study is based in Uva Region, Sri Lanka**

K.W.S.N. Kumari<sup>1\*</sup>, P.I.N. Fernando<sup>2</sup>

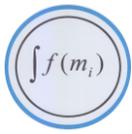
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### **ABSTRACT**

Small and Medium Enterprises (SMEs) play a vital role in the Sri Lankan economy. SMEs in the agri-business sector engaged in growing paddy, spices, vegetables, fruits and flowers and they had a major part in creating jobs in rural areas. However, access to finance is still one of the greatest obstacles facing SMEs all over the world and prevents them from developing. Finance is one of the empowerment tools that have the potential to boost the productivity, increase food security and change the life of farmers from a situation of abject poverty to a more dignified life in the long run. Therefore, this study is focused to investigate the influence factors for formal financial decision in agriculture sector. A total sample size of 200 farmers were selected among the SME's registered with Small Enterprises Authority in Uva region using stratified random sampling techniques and data were collected by the use of structural questionnaires and through interviews. Piloting of the study was carried out into ascertain the validity and reliability of the instruments. The logistic regression model and chi-squared test with relevant descriptive and inferential statistics were employed to check the relationship between variables, with the SPSS Package for the Social Sciences. The study established that among the factors that age, education, farm size (square feet), years of experience are positively impact and gender, income and house hold size are negatively impact to the formal financial decision of agriculture famers and these factors together have accounted for 65.9 % of variation in formal financial decision. Further results of chi-squared analysis reveal that government firms are less like to provide the credits to SME's and SME's are reluctant to apply for loans hence reduce the probability to receive formal bank credit. Therefore, researchers are emphasized to stakeholders' that formation of cooperative groups to enable farmers pull resources together or streamline loan application procedures, intensify education of farmers on loan procedures and promote flexibility in types of collateral demanded by financial institutions. This study is recommended that the government should arrange more awareness programmes to farmers on financial management skill such as maintaining cash flow and credit repayment, management on credit and payments for labors in off season period.

**Keywords:** Small and Medium Enterprises, Formal finance, Logistic Regression Model



## **The Behavior of Consumer Price Indices in Southeast Asian Countries under the COVID -19 Pandemic**

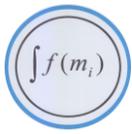
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### **ABSTRACT**

The Consumer price index (CPI) is an economic indicator used to measure inflation. It is useful to know the effectiveness of the economic policies of a country and for the decision-making process. The pandemic situation was highly affected by the economic growth globally. The Southeast Asian (SEA) region was highly infected by the COVID-19 pandemic. Therefore, it is useful to measure the future economic performances of SEA countries. As an initial step, this study was designed to examine the patterns of CPI of selected SEA countries. The objective of the study was to examine the patterns of CPI in Thailand, Singapore, and Indonesia. The CPI data obtained from the International Monetary Fund (IMF) database for the period of January 2000 to July 2020. Descriptive statistics were used for data representation. Auto-Correlation Functions (ACF) and time series plots were used to examine the behavior. One-way Analysis of Variance (ANOVA) was used for the mean comparison of CPI among selected countries. The mean CPI of Indonesia, Singapore, and Thailand were 99, 100.4, and 98 respectively. ANOVA confirmed that there is no significant difference in CPI between these three countries. ACF confirmed the data series of CPI of Indonesia, Singapore, and Thailand did not have a constant mean or constant variance. All three data series were not normally distributed. The statistical pattern shows the upward trend of Indonesian CPI throughout. Whereas Singapore and Thailand also equivalent up to 2013 and 2014 respectively. It is concluded that the pandemic situation is not highly affected to the CPI in Singapore and Thailand. The pattern of all three series seems to be captured by one of these or any of those models namely; Exponential Smoothing, linear and nonlinear trend models, Decomposition Techniques, and Sama Circular Model. Further, it is recommended to examine the behavior of other SEA countries.

Keywords: Consumer Price Index, COVID-19, Pattern



## **Forecasting Consumer Price Index in Thailand under the COVID -19 Pandemic**

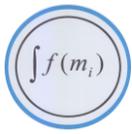
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### **ABSTRACT**

The Consumer Price Index (CPI) presented the effectiveness of the economic policies of a country. The prices of the basket are often changed due to the varied dynamic situations within the country. It happens due to the economic policies and various other factors including natural disasters. The rise of CPI is extremely low in Thailand comparative with other Southeast Asian countries. It is important to understand the future performance of the CPI in Thailand under the COVID-19 pandemic situation. Hence, the objective of the study was to forecast CPI in Thailand. The monthly CPI data obtain from the International Monetary Fund (IMF) database for the period of July 2011 to July 2020. Auto-Correlation Functions (ACF) and time series plots were used for pattern recognition. The model validation was done by using the Anderson Darling test, ACF, and Ljung-Box Q (LBQ)-test. The forecasting ability of the model was assessed by both relative and absolute measurements of errors. Base on the pattern of the data set, the study selected to test several models namely; linear and nonlinear models and Autoregressive Distributed Lag Model (ADLM). The results of the study revealed that linear, nonlinear, and do not satisfy the model validation criterion. ADLM was run with seven lags, but only two lags were significant. The model ADLM satisfied the model validation criterion under the model fitting. The relative and absolute measurements of errors were very low under the fitting and verification. It has concluded that lag one and two of ADLM were significant. It means, that the future value of CPI or the price of the basket of Thailand could be decided by the price of the basket of last month and the one before that. It is recommended to model the CPI in other Southeast Asian countries furthermore.

**Keywords:** Consumer Price Index, Policies, COVID-19, ADLM



## **Corporate Governance and Sustainability Reporting: Evidence from a Developing Nation**

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### **ABSTRACT**

Corporate governance is a mechanism to reduce agency conflict in an organization. Although reporting is the responsibility of the board, there is a theoretical conflict between stewardship theory and stakeholder theory. Therefore motivation of corporate governance towards sustainability is still vague in literature. This study aims to examine the impact of corporate governance variables on sustainable reporting in a developing nation, i.e. Sri Lanka. Quantitative approach was applied and the hypotheses of the study tested through panel regression. This study examines the relationships between the total sustainability disclosures and, separately, the three aspects of sustainability disclosures such as, economic, environmental and social; and corporate governance proxy by various attributes of corporate governance. The sustainability reporting was measured through content analysis method which codifies disclosure items in the annual reports into sustainability disclosure. Further, study considered hundred and twenty one listed firms in CSE Sri Lanka for recent three year period to empirically analyze the relationship between the constructs. The result indicates there is a significant positive interaction between board size, non-executive directors on board and sustainability reporting in Sri Lanka. However, the nexus between other corporate governance proxy and sustainability reporting is not supported. As a result, the study is suggesting that corporate governance plays a limited role in driving the sustainability reporting in Sri Lanka. Since the current study adopted newly developed Global Reporting Initiatives-based reporting index, it helps to identify the companies with good sustainability reporting by aligning companies' disclosures to their sustainability reporting. The results of this study help to understand to the practitioners that the needs of good corporate governance in enhancing sustainability.

**Keywords:** Corporate Governance, Sri Lankan Listed firms, Sustainability Reporting



## **Sama Circular Model and ARIMA on Forecasting Unemployment of Australia**

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### **ABSTRACT**

The unemployment is defined as the incapability of getting a paid employment or self-employment, when the labor is readily available. It might occur due to various reasons, such as; recession, weakness of economic policies, competition in the job market due to globalization and international trade, replacing human labor by new technologies and inventions. The unemployment would damage the financial instability, happiness and self-esteem of an individual. It creates economic distress as well as social distress. Australia is one of the developed countries, yet not escaped from the unemployment. The Australian Bureau of Statistics (ABS) closely monitors the situation, conduct a monthly Labor Force Survey and reveal unemployment data to the public. However, advanced scientific forecasting techniques were not much applied in forecasting unemployment. Hence the study was focused on forecasting unemployment of the country. Monthly unemployment in Australia from year 2005 to 2019 was obtained from the official website of International Monetary Fund (IMF). The pattern recognition part of the analysis suggested the; trend, seasonal and/or cyclical variation in unemployment. Therefore Seasonal Auto Regressive Moving Average (SARIMA) method and the Sama Circular Model (SCM) were tested for the purpose. Goodness of fit tests and measurements of errors were used in model validation. The Auto Correlation Functions (ACF) of residuals and Ljung-Box Q statistics (LBQ) were used to test the independence of residuals. The Probability plot and the Anderson Darling test were used to test the normality of residuals. Forecasting ability of models was assessed by Mean Absolute Percentage Error (MAPE), Mean Square Error (MSE) and Mean Absolute Deviation (MAD). The SARIMA as well as SCM satisfied the model validation criterion. Measurement of errors of both models were satisfactorily small, but the SARIMA forecasts were under estimates and not in line with the actual series. It was concluded that the SARIMA and SCM are suitable whilst SCM is superior to SARIMA in forecasting Australian unemployment.

**Keywords:** SARIMA, Sama Circular Model, Unemployment