NCETASD-2025

National Conference on Emerging Trends and Applications in Statistics and Data Science

29th – 30th MAY | 2025

PROGRAM AND ABSTRACT BOOK

Organized by:

Nepal Statistical Society

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About Nepal Statistical Society

The Nepal Statistical Society (NeSS) was established on November 14, 2013, during a meeting held at the Central Department of Statistics, Tribhuvan University, in response to the diverse challenges arising from contemporary circumstances. Recognizing the need for statisticians to play a significant role in ad- dressing these issues, the professors of statistics decided to form a professional and subject-specific collective organization. Following various meetings and discussions, the society was officially registered with the District Administration Office in Kathmandu on November 15, 2014, and with the Social Welfare Council on December 12, 2014.

The society's constitution emphasizes the following objectives:

- To enhance the academic advancement and protection of the rights and interests of professors involved in teaching and research in statistics across various universities and campuses in Nepal.
- To identify and promote various fields of application for statistics.
- To improve the competencies of professors based on the breadth of the subject.
- To contribute significantly to the progressive development of the field of statistics.

NeSS is dedicated to fostering a culture of statistical literacy and excellence through a variety of initiatives, including seminars, workshops, and conferences that facilitate knowledge sharing and collaboration among professionals in the field. The society also emphasizes the importance of networking, providing opportunities for members to connect with statistical experts both locally and internationally. Supported by membership fees, contributions, and sponsorships, NeSS operates as a not-for-profit organization dedicated to advancing the field of statistics in Nepal. Through its efforts, NeSS aims to optimize data-driven decision-making and resource management, ultimately contributing to the development of evidence-based policies and practices in various sectors.

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National Conference on Emerging Trends and Applications in Statistics and Data Science - 2025
(NCETASD - 2025)

The National Conference on Emerging Trends and Applications in Statistics and Data Science (NCETASD-2025) aims to bring together statisticians, data scientists, researchers, and professionals to explore and discuss the latest developments and innovations in the fields of Statistics and Data Science. This platform provides the opportunities for the exchange of ideas, presentation of research findings, and engagement with experts who are shaping the future of data-driven solutions.

The conference will primarily focus on the following areas:

- Statistics in the Context of Modern Data Science and AI
- Advances from Statistical Learning to Machine Learning
- Statistical Modeling of Environmental Risks
- Applications in Climate Change and Sustainability
- Innovations in Health Analytics
- Computational Bayesian Methods and Emerging Trends
- Public Health and Biostatistics
- New Methodologies and Recent Progress
- GenAI: Opportunities and Challenges
- Statistical Approaches to Risk Management
- Tasks of Gen AI and Big data Challenges

Conference Objectives

- Explore Advancements in Statistics and Data Science
- Facilitate Knowledge Sharing and Interdisciplinary Collaboration
- Address Contemporary Challenges
- Promote Professional Networking and capacity building
- Encourage evidence-based policy and decision-making

Conference Organizing Committee

The Organizing Committee comprises all executive members of the Nepal Statistical Society and representatives from the administration of Orchid International College.

Steering Committee

- Prof. Dr. Ram Prasad Khatiwada
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NATIONAL CONFERENCE ON EMERGING TRENDS AND APPLICATIONS IN STATISTICS AND DATA SCIENCE – 2025 (NCETASD-2025)				
Day 1 (Jestha 15, 2082) (29 May, 2025)				
Time	**Program (Detail)**			**Page No**
8:00 AM – 9:00 AM	Registration & Welcome Tea			
9:00 AM – 10:00 AM	Inaugural Ceremony	Chairing the conference, (NeSS President / OIC Principal)		
		Welcome Address by Convener		
		Opening and opening Remarks by Chief Guest		
	Keynote Speech	Future of Statistics in the Context of Modern Data Science and AI Prof. Dr. Shankar Prasad Khanal, Dean, IOST, TU		1
		Remarks by Conference Chair and concluding the session		
10:00 AM - 10:20 AM	**Tea Break & Networking**			
	Plenary Session 1			
	Session Chair	Prof. Dr. Rabindra Kaystha		
10:20 AM - 11:10 AM	Plenary Talk 1	Prof. Dr. Sudan Jha	From Statistical Learning to Machine Learning: Bridging the Gap Towards Smarter Data-Driven Systems	2
11:10 AM - 11:40 AM	Invited Talk 1	Prof. Dr. Vikash Raj Satyal	Rise of GenAI and Decay of Humanity	3
11:40 AM – 11.45 AM	**Short Break**			
11:45 AM - 01:15 PM	**Contributory Session I**			
	Chair	Prof. Dr. Vikash Raj Satyal	**New Approaches and Progresses [NAP]**	
Time	**Code**	**Presenters**	**Topic**	
11:45 AM - 12:00 PM	NAP-1	Laxmi Prasad Sapkota	New Unit Model with Applications to Sequential Probability Ratio Test and Regression Analysis	8
12:00 PM - 12:15 PM	NAP-2	Nanda kumar Tharu	Remittance Shocks, Labor Market Dynamics, and Unemployment in Nepal: A Bayesian VAR Approach	9
12:15 PM - 12:30 PM	NAP-3	Ishwari Prasad Banjade	District-level Descriptive and Cluster Analysis of Human Development Related Indices of Nepal	10
12:30 PM - 12:45 PM	NAP-4	Kiran Kumar Shrestha	Comparative Study of Risk Associated with Different NEPSE Groups	11
12:45 PM - 01:00 PM	NAP-5	Basan Shrestha	Microsoft Excel for Statistical Data Analysis: A User-Friendly Application	12
01:00 PM – 01:15 PM	NAP-6	Govinda Gyawali	Unraveling Poverty in Nepal: A Review of its Constraints and Determinants	29

01:15 PM - 02:00 PM	**Lunch Break**			
	Plenary Session 2			
	Chair	Prof. Dr. Amod Paudyal		
2:00 PM - 2:45 PM	Plenary Talk 2	Prof. Dr. Srijan Lal Shrestha	Burden of Disease Attributable to Environmental Risk Factors in Nepal: Evidences and Methodologies	3
2:45 PM - 3:15 PM	Invited Talk 2	Prof. Dr. Vikash Kumar KC	Statistics for Society: Bridging Disciplines to Solve Global Challenges	5
3:15 PM - 4:30 PM	**Contributory Session II**			
	Chair	Prof. Dr. Vikash Kumar KC	**Public Health and Biostatistics [PHB - Group 1]**	
	Code	**Presenters**	**Topic**	
3:15 PM - 3:30 PM	PHB-1	Keshav Raj Bhandari	Prevalence and Impact of Color Vision Deficiency on the Quality of Life in Undergratuate Medical Student in Hetauda Submetropolitan City, Nepal	13
3:30 PM - 3:45 PM	PHB-2	Sajani Basan	Quality of life, stress and its coping strategies among the parents of children with autism spectrum disorder in Kathmandu valley	14
3:45 PM - 4:00 PM	PHB-2	Diwas Rai	Determinants of Exclusive Breastfeeding Among Mothers of Infants Under Six Months in Damak Municipality: A Cross-Sectional Analysis	15
4:00 PM - 4:15 PM	PHB-4	Kabita Thapa	Medication Adherence among People with Chronic Diseases of a selected peri-urban cluster of Budhanilkantha Municipality of Kathmandu	16
4:15 PM - 4:30 PM	PHB-5	Smriti Luitel	Life satisfaction and its associated factors among older adults in a peri-urban cluster of Pathari Shanishchare Municipality	17
4:30 PM - 4:35PM	**Short Break**			
	Plenary Session 3			
	Chair	Prof. Dr. Gauri Shrestha		
4:35 PM - 5:20 PM	Plenary Talk 3	Prof. Dr. Jyoti Upadhyay Devkota	Multivariate Analysis of Benefits of Renewable Energy - Examples From Rural Nepal	4
5:20 PM - 5:30 PM	**Tea Break**			
	End of First Day Conference			

Day 2 (Jestha 16, 2082) (30 May, 2025)				
8:30 AM - 9:00 AM	**Breakfast**			
	Chair	Prof. Dr. Amita Pradhan		
9:00 AM- 9:30 AM	Invited Talk 3	Assoc. Prof. Shital Bhandary	Statistical Innovations in Health Analytics	6
9:30 AM- 10:00 AM	Invited Talk 4	Prof. Dr. Rabindra Kayastha	Some Statistical Perspectives of Risk Management Practices in Nepal	6

10:00 AM- 11:15 AM	**Contributory Session III**			
	Chair	Assoc. Prof. Shital Bhandary	Public Health and Biostatistics [PHB - Group 2]	
	Code	**Presenters**	**Topic**	
10:00 AM-10:15 AM	PHB-6	Bishnu Raj Kafle	Demographic Influences on Enrollment in the Social Health Insurance Program in Nepal: A Case Study of Kathmandu Metropolitan City Ward No. 30	18
10:15 AM- 10:30 AM	PHB-7	Januka Neupane	Impact of Family Functioning, Family Violence, And Other Family Factors on Juvenile Delinquency	19
10:30 AM-10:45 AM	PHB-8	Hari Prasad Upadhyay	Bayesian Survival Analysis of Length of Hospital Stay of COVID-19 Patients and Associated Factors: A Hospital-based Retrospective Cross-sectional Study	20
10:45 AM -11:00 AM	PHB-9	Tara Prasad Aryal	How can we Design Patient-Preferred Care? Insights on Discrete Choice Experiment Among People Living with Tuberculosis in Nepal	21
11:00 AM-11:15 AM	PHB-10	Subash Koirala	Factors Influencing Teenage Pregnancy Among Dalit Ethnic Groups in Bharatpur Metropolitian City, Chitwan	22
11:15 AM – 11.30 AM	**Break**			
11:30 AM-12: 45 PM	**Contributory Session IV**			
	Chair	Prof. Dr. Vikash Raj Satyal	**Environmental and Allied Fields [EAF]**	
	Code	**Presenter**	**Topic**	
11:30 AM - 11:45 AM	EAF-1	Rajendra Upadhaya	Modeling Climate Change Impact on Tourism: Variability, severity, Impact and tourism development	23
11:45 AM-12:00 PM	EAF-2	Madhab Prasad Baral	Climate-Driven Migration Intentions in Gandaki Province, Nepal: A PLS-SEM Analysis of Perception about Climatic Factors, and Adaptation Strategy	24
12:00 PM -12:15 PM	EAF-3	Krishna R. Lamichhane	Ordinal Logistic Regression Approach: A Case Study on Teacher Job Satisfaction	25
12:15 PM- 12:30 PM	EAF-4	Daman Singh	Breaking Barriers: Perspectives from Nepali Women on Their Experiences While Studying Abroad	26
12:30 PM -12:45 PM	EAF-5	Gopal Prasad Sedhai	Impact of Social Media on Students' Academic Performance	27
12:45 PM- 1:00 PM	EAF-6	Sumitra Jawali	Air pollution Trends and Regional Variability in Nepal	28
12: 45 PM-1.45 PM	**Lunch Break**			
1: 45 PM-2:30 PM	Additional Talk 1	Prof. Dr. Ram Prasad Khatiwada	Computational Advances and Current Trends: A Bayesian Perspective	7
2:30 PM- 4:00 PM	Valedictory session	Certificate Distribution, Photo session		
		Closing Remarks by Organizing Committee,		

Key01

Future of Statistics in the Context of Modern Data Science and AI

Prof. Dr. Shankar Prasad Khanal,

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ABSTRACT

Statistical methods have a long history of its application in science as its concept has been recognized during the seventeenth century. However, the reorganization of 'Statistics' as a separate field dates largely from the twentieth century. Coming to this stage, Statistics as a subject has completed many ups-downs in the journey of development of statistical theories and its applications. Statistics has gained considerable achievements by developing many statistical theories as the vertical development of its own, and in other areas of applications. Statistics, nowadays, does not remain simply as a statistics but serves as a statistical science since it focuses on experimental cycle, design, execution, prediction i.e. from planning of the study to the evidence based conclusions. The term data science appeared in the early 21st century in literature. Nonetheless its roots were clearly indicated by John Tukey in the 1960s and by Peter Naur in the 1970s. The debate of the relevance of the discipline of Statistics with the evolving field of modern data science has continued in academia and in industry. The role of statistics is indispensable for theoretical and practical understanding of Artificial Intelligence. This paper discusses the historical development and achievements of statistics; its relation with data science and AI. Further, it is an attempt to highlight the future role of statistics in the situation of increasing demands of data science and AI in the modern world.

Keywords: statistical science; data science; artificial intelligence; experimental cycle.

PT01

From Statistical Learning to Machine Learning: Bridging the Gap Towards Smarter Data-Driven Systems

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ABSTRACT

The evolving landscape of data science has witnessed a profound shift from traditional statistical learning methods to modern machine learning paradigms. While statistical learning provides the theoretical backbone for modeling relationships in structured data, machine learning extends this foundation by offering greater flexibility, scalability, and adaptability to complex, high-dimensional, and unstructured data environments. This plenary talk will explore the fundamental similarities and differences between the two fields, emphasizing how machine learning, driven by computational power and algorithmic innovation, surpasses classical statistical approaches in tasks like pattern recognition, predictive analytics, and autonomous decision making. Key topics will include overfitting and model generalization, feature learning vs. feature engineering, and the transition from hypothesis-driven to data-driven discovery. The session will also discuss practical applications where machine learning outperforms traditional techniques, while reflecting on scenarios where statistical learning remains indispensable. By the end of the talk, participants will gain a nuanced understanding of when, why, and how to leverage machine learning over traditional statistical methods for emerging challenges in data science.

Keywords: machine learning; statistical learning; data science; model generalization; predictive analytics.

Burden of Disease Attributable to Environmental Risk Factors in Nepal: Evidences and Methodologies

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ABSTRACT

Burden of Disease (BoD) study seeks to quantify mortalities and morbidities which can be attributed to specified risk factors. Among the 369 diseases and injuries, 87 risk factors identified by WHO for the Global Burden of Disease (GBD) 2019 study, many diseases particularly cardiovascular, respiratory, water-borne and vector-borne diseases have been attributed to environmental risk factors-ambient and household air pollution, unsafe water and sanitation, climate change related indicators (temperature, extreme weather conditions: heatwaves, drought, flood, etc.), etc. Mortality indicators measured by number of deaths, years of life lost (YLL) from death, morbidity indicators measured by prevalence, incidence, hospital inpatients, emergency room visits, years lived with disability (YLD), etc., and combined health indicator measured by disability adjusted life-years (DALYs) have been used to quantify disease burdens in nations worldwide. Although researches have been conducted in Nepal which addressed public health burden attributable to environmental risk factors earlier, the Nepal BoD assessment kicked off in the year 2014 by Ministry of Health and Population (MoHP) with the technical support from the Institute of Health Metrics and Evaluation (IHME) as a scoping exercise. Thereafter, the first and the second comprehensive reports on BoD of Nepal were published in 2019 and 2021. According to a Nepal BoD study published in 2021, among the top 10 risk factors of mortality and DALYs in Nepal, 3 (household and ambient air pollution, and low temperature) and 2 (household and ambient air pollution) were related to environmental risk factors, respectively. Other top risk factors linked to NCDs were smoking, high levels of blood pressure, fasting plasma glucose, LDL, BMI, etc. The assessment of BoD due to specified risk factors requires diverse country databases including survey data on health and risk factors and models that are capable of estimating the health effect coefficients and methodology to estimate the disease burden through attributable fraction and attributable burden.

Keywords: attributable fraction; disability adjusted life years; disease burden; environmental risk factor; health effect coefficient; statistical model.

PT03

Multivariate Analysis of Benefits of Renewable Energy - Examples From Rural Nepal

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ABSTRACT

Nepal is an agriculture based society. According to the 2021 Census, 49.60% of the households use wood/ fire wood for meeting their energy needs for cooking. With an aim of conducting a detailed study of energy consumption dynamics of rural Nepal, three surveys were conducted. A survey of 400 households of biogas consumers, 300 households of national grid electricity users and 51 households of micro hydro project users was conducted. This paper is based on results obtained from these surveys. Conduction of such surveys has a great significance for a country like Nepal; as it is without a strong backbone of good quality official data. Remote geographical locations, lack of awareness and lack of incentives are the main reasons behind this plight of official statistics. This survey generated more than 350 multivariate data. In these surveys, the base questionnaire is the same. It is a structured questionnaire with answers given as multiple choices that resulted in categorical data. This categorical data could be analyzed on an ordinal scale. Because of the large sample size this could be treated as a continuous data by the application of the central limit theorem. The questionnaire was pretested. Multivariate statistics is used here to quantify and explain the relationship between these variables. Consumer profile databases were constructed. Data based research is evidence based research. Evidence based research is objective and undisputable. This presentation highlights this evidence based approach of handling an issue. As what gets measured also gets done.

Keywords: energy consumption; rural Nepal; categorical data analysis; multivariate Statistics; evidence- based research.

IT01

Rise of GenAI and Decay of Humanity

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ABSTRACT

With the advancement of AI and automated robotics, profound changes are occurring in our way of life, cognitive processes, and social values. The rapid and efficient analysis of Big Data using tools such as GenAI, neural networks, and large language models (LLMs) not only raises concerns about the erosion of human ethics, but also poses critical questions regarding the long-term sustainability of humanity echoing the dystopian predictions made by Aldous Huxley in his 1932 novel *Brave New World.*

Keywords: Big data; GenAI; neutral network; LLM, ethics.

it02

Statistics for Society: Bridging Disciplines to Solve Global Challenges

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ABSTRACT

Statistics is often thought of as a technical and complicated subject full of terms like p-values and confidence intervals. But in reality, it's a powerful way of telling stories through data and connecting different fields. It helps bring together various disciplines by using evidence-based information. Statistics doesn't just predict the future it also suggests practical solutions. With AI driven causal inference, we can understand not just what is related, but what actually causes what. Projects like Climate TRACE use satellite data and AI to monitor emissions from every power plant worldwide. Even farmers now use smartphones to check soil health. Statistics has moved beyond labs-it's now used directly by the people who need it most. It's not just about numbers; it's about improving lives. It acts as a bridge between what exists and what's possible-turning data into conversations, numbers into stories, and insights into real change.

Keywords: data storytelling; AI-driven inference; evidence based solutions; real world impact; interdisciplinary integration.

IT03

Statistical Innovations in Health Analytics

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ABSTRACT

Health analytics involves analyzing data to improve decision making, enhance patient outcomes, and optimize healthcare operations. It uses various statistical methods, supervised and unsupervised machine learning, deep neural networks, large language models and optimizations to derive actionable insights from various data sources. The e-health governance framework of Nepal can be used for the same. Health analytics in general uses the statistical methods and models to explore, compare and predict the health outputs and outcomes. Use of new supervised and unsupervised learning in radiology data, laboratory data and patient data are innovations as they get higher prediction accuracy indices than classical statistical models. The supervised regression and classification learning models need a thorough understanding of bias variance tradeoff to build and deploy the meaningful health analytics dashboards. The deep neural network models on the other hand needs a large computational resource for pretraining the foundational models like protein fold problem to win the Nobel prize but the pretrained models and large language models provides a good avenue to use them to explore the patterns, trends and prediction of the health data to save lives, money and resources. So, this paper aims to describe the roles of statistics in the innovation of health analytics.

Keywords: Statistical learning; deep learning; health analytics; innovation.

IT04

Some Statistical Perspectives of Risk Management Practices in Nepal

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ABSTRACT

Risk is associated with every kind of project work whether it is related to engineering construction project, software development project, financial transaction process or business process. There isn't any project which is free of risks. It is required to exist and essential in all kinds of projects. Observing risk associated with a project can help in successful completion of projects in expected time and expected cost with good assurance of quality. This is required to concern with statistical application or techniques for risks to coincide with ongoing or completing projects of any types of organization/institutions in Nepal.

Keywords: risk; risk management; Statistical risk technique.

AT01

Computational Advances and Current Trends: A Bayesian Perspective

Prof. Dr. Ram Prasad Khatiwada

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ABSTRACT

The talk on 'Computational Advances and Current Trends: A Bayesian Perspective' addresses the philosophical foundations of Bayesian statistics and their transformative role in modern data science in the present day. Beginning with core concepts and a historical overview, it examines recent computational advances, including powerful algorithms, software innovations, and scalable techniques, that have made large-scale Bayesian analysis feasible. It highlights emerging trends in trustworthy inference and prediction, with a focus on reliability, hierarchical modeling, uncertainty quantification, Bayesian networks, alongside visualization techniques to enhance interpretability. Through real world examples and visual demonstrations, the presentation underscores how Bayesian approaches support more transparent, reliable, and impactful inference and prediction in today's complex data landscape.

Keywords: Bayesian Statistics; Computational advances; Uncertainty quantification, Hierarchical Modeling; Trustworthy inference

New Unit Model with Applications to Sequential Probability Ratio Test and Regression Analysis

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ABSTRACT

This study introduces a new bounded probability distribution, termed the unit exponential odd exponentiated distribution, and investigates its theoretical properties. Designed to address the need for flexible models capable of accommodating bounded and skewed data, the proposed distribution enhances the existing suite of models defined on the unit interval. In addition, a novel quantile regression framework based on the proposed distribution is developed.

The new model is constructed using the odd function W(x) with cumulative distribution function (CDF)

$$W(x) = \frac{x^{\beta}}{1-x^{\beta}}, \ 0 < x < 1$$

Comprehensive mathematical and statistical properties of the distribution are derived. Parameter estimation is performed using the maximum likelihood estimation (MLE) method, and a detailed simulation study is conducted to evaluate the bias, mean squared error, and overall efficiency of the MLEs across varying sample sizes and parameter configurations. Bayesian inference is also employed, utilizing sophisticated computation- al techniques such as Hamiltonian Monte Carlo (HMC) and the No-U-Turn Sampler (NUTS), implemented via the STAN platform in R. The practical utility of the proposed distribution is demonstrated through two real datasets: (i) kidney dialysis outcomes, and (ii) failure times of mechanical components. Model performance is assessed using a variety of metrics, including the coefficient of determination (R^2) and root mean square error (RMSE). Additionally, a theoretical formulation and practical implementation of Wald's Sequential Probability Ratio Test (SPRT) are developed for the proposed model to enhance sequential decision-making capabilities. A new unit-interval quantile regression model, based on the proposed distribution, is also constructed and compared against traditional Beta and Kumaraswamy quantile regression models. Across multiple classical and Bayesian model selection criteria, the proposed distribution consistently outperformed the benchmark models. In the context of quantile regression, it demonstrated superior flexibility and provided more accurate fits for bounded and skewed data than existing alternatives. The integration of the SPRT framework further improved its application to sequential analysis tasks. The unit exponential odd exponentiated distribution represents a significant contribution to the field of bound- ed data modeling, offering robust performance under both classical and Bayesian paradigms. Its successful application to diverse datasets, alongside the development of new inferential tools such as SPRT and unit interval quantile regression, underscores its broad potential for statistical modeling and practical data analysis.

Keywords: unit model; hamiltonian monte carlo; coefficient of determination; quantile regression; sequential probability ratio test.

Remittance Shocks, Labor Market Dynamics, and Unemployment in Nepal: A Bayesian VAR Approach

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ABSTRACT

This study explores the dynamic interactions between remittance inflows, labor market adjustments, and unemployment in Nepal over the period 2010 Q1 to 2023 Q4. Utilizing a Bayesian Vector Autoregression (BVAR) framework with Minnesota priors to address data limitations, we estimate the propagation effects of remittance shocks on the labor market. Our empirical findings reveal three key insights. First, positive remittance shocks significantly reduce the unemployment rate, with the strongest effects materializing after four to six quarters. Second, we observe asymmetry in labor market responses: negative remittance shocks lead to sharper increases in unemployment than the declines observed during positive shocks. Third, GDP growth functions as an important transmission channel that amplifies the employment gains associated with remittance inflows. A counterfactual simulation suggests that stabilizing remittance flows could reduce labor market volatility, particularly during external shocks such as the COVID-19 pandemic. The findings highlight the critical role of remittances in enhancing labor market resilience and provide policy-relevant insights for macroeconomic stability and migration governance.

Keywords: remittances; unemployment; Bayesian VAR; labor markets; Nepal; shock transmission.

District-level Descriptive and Cluster Analysis of Human Development Related Indices of Nepal

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ABSTRACT

Human Development related studies were initiated by Amartya Sen and Mahbub ul Haq in 1990. Since then, the United Nations Development Programme (UNDP) has been publishing Human Development Reports (HDRs) regularly, focusing on gender and human development. Nepal has also been publishing its own HDR since 1998. According to the reports, Nepal's Human Development Index (HDI) improved from 0.399 in 1990 to 0.602 in 2021 an increase of 50.9%. There has been good progress in gender and human development, but there still exists substantial disparities between castes, ethnic groups, and regions. We studied HDI data of Nepal, focusing on gender, caste/ethnicity, region, and the gap between rural and urban areas. We used descriptive methods and cluster analysis to optimally classify districts based on temporally averaged district level HDI data obtained from different published Nepal HDRs. Using K-means clustering based upon data from 1996 to 2011, we found five distinct groups with HDIs between 0.33 and 0.58. These groups had small differences within them and a good level of separation between the groups. Only 3 districts were placed in the medium HDI group (0.55 to 0.70), while the other 74 districts were in the low HDI group (0.55 or below). In conclusion, Nepal needs to take urgent steps to solve human development problems and make better plans and policies for development.

Keywords: cluster analysis; gender development index; human development; optimal classification; regional inequalities.

NAP-4

Comparative Study of Risk Associated with Different NEPSE Groups

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ABSTRACT

Risk of investment in the share market is becoming an apprehension subject of research in the financial sector since the last few decades. In this regard, this research article is engrossed at comparing risk risk possessed by different groups of Nepal Stock Exchange (NEPSE) market. Data on closing indices of these groups, available online on the official website of NEPSE, are used for analysis purposes. As the measures of risk in these groups, value at risk and expected shortfall are considered. To describe dependencies of mean and variance over time, Autoregressive Integrated Moving Average-Generalized Autoregressive Conditional Heteroscedastic (ARIMA-GARCH) models are developed separately for different NEPSE groups. The residuals of these models, as they can be considered to be independent observations, are used to quantify value-at-risk over one- day horizon at 95% confidence level and expected shortfall are calculated. It is resulted that 'Life Insurance' group possess highest risk, followed by 'Non-life Insurance' group, 'Microfinance' group, 'Hotel and Tourism' group, 'Manufacturing and Production' group, 'Hydropower' group, 'Development Bank' group, 'Bank' group, 'Finance' group and 'Trading' group is found to have the least risk.

Keywords: ARIMA; GARCH; value-at-risk; expected shortfall

Microsoft Excel for Statistical Data Analysis: A User-Friendly Application

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ABSTRACT

When analysed, survey and evaluation data provide information for planning and decision making. Important steps in statistical data analysis include data organization, coding, cleaning, summarization, and inferential analysis. This holds true for broader fields like biology, social science, business, industry, and the public sector. However, the lack of user-friendly IT applications and gaps in knowledge, expertise, and experience may result in limited information generation. There are a lot of programs on the market in this information-technology era. Not all programs will be available to the broader public, including managers and development prac- titioners, due to factors including cost, ease of use, and technological capabilities. Among these is Microsoft Excel, which is easy to use for managing and analysing data. Microsoft Excel provides a number of functions namely Array functions, logical functions, statistical functions, data tools, pivot tables, and a data analysis toolkit are just a few of the features and tools that Microsoft Excel provides. Data input and export, error detection, duplicate data removal, outlier detection, graph creation, and descriptive and inferential statistics are all made possible by these features.Making the Microsoft Excel functions the most is a useful approach to begin the process of analysis and pro- duce data for evidence based planning and well-informed judgments. An overview of using Microsoft Excel for statistical analysis, data functions, and data quality checks are included in this paper. The procedures pertaining to cross tabulation, charts, descriptive statistics, regression, correlation, comparing means, and analysis of variance are demonstrated in this paper. Anyone who understands the fundamentals of statistics and has working knowledge will benefit. Students, academics, development professionals, planners, and policymakers will all find the paper useful.

Keywords: statistical analysis; Microsoft excel; data management; evidence-based planning, data quality check.

PHB 1

Prevalence and Impact of Color Vision Deficiency on the Quality of Life in Undergraduate Medical Student in Hetauda Sub Metropolitan City, Nepal

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ABSTRACT

Color Vision Deficiency (CVD) affects the ability to distinguish certain colors and can pose significant challenges in clinical settings where accurate color perception is crucial. Medical students with CVD may struggle with identifying clinical signs like pallor or jaundice, leading to diagnostic errors. This study aims to assess the prevalence and evaluate its impact on quality of life (QoL). A cross-sectional census-based study was conducted among 264 medical undergraduates at Madan Bhandari Academy of Health Sciences. Participants were assessed using the 25-plate Ishihara test (digitally scanned) to classify CVD types and the Color Blind Quality of Life (CBQoL) Scale to measure emotional, health, and occupational impacts. Data were analyzed using SPSS v20. Descriptive statistics were used to summarize participant characteristics. Chi-square tests, t-tests, ANOVA, and logistic regression were applied to identify associations and calculate odds ratios, with significance set at $p < 0.05$. This study revealed that 3.4% of the participants had CVD (0.4% mild protan, 3.0% mild deutan). Cataract was the most reported eye condition (5.7%). While the majority reported no emotional distress, a notable minority experienced moderate issues, including feeling different (7.4%) and letting others down (4.7%). CVD was significantly associated with sex ($\chi^2 = 12.451$, $p = .002$), cataract ($\chi^2 = 13.522$, $p = .001$), and Glaucoma ($\chi^2 = 20.491$, $p < .001$). Notably, CVD was strongly linked to reduced quality of life (OR = 41.76, $\chi^2 = 30.49$, $p < .001$) and work-related challenges (OR = 27.09, $\chi^2 = 20.185$, $p < .001$). A considerable percentage of undergraduate medical students suffer from color vision deficiency (CVD), which is strongly linked to sex and eye disorders like glaucoma and cataracts. Despite the fact that the majority of students express no emotional impact, CVD significantly lowers quality of life and causes problems at work. In academic and clinical competency among impacted persons, these findings emphasize the significance of early detection, awareness, and supportive measures within medical education.

Keywords: Color vision deficiency, Ishihara test, medical students, Quality of life.

PHB 2

Quality of Life, Stress and Its Coping Strategies among The Parents of Children with Autism Spectrum Disorder in Kathmandu Valley

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ABSTRACT

This study examines the quality of life, stress, and coping strategies of parents raising children with autism spectrum disorder in Kathmandu Valley. These parents face unique challenges, including caregiving demands, societal stigma, and limited support resources. Limited research exists on the psychosocial impacts these parents experience in Nepal, making this study crucial for understanding their struggles. This cross-sectional study was carried out in autism care centers across Kathmandu Valley. Quantitative data were collected from 140 parents using standardized instruments. Quality of life was assessed using the Family Quality of Life Scale. Data were analyzed using STATA and EZR, with weighted least squares regression used to address heteroscedasticity. Autism centers were identified through snowball sampling, while parents were selected purposely. All instruments were pretested to ensure their reliability and validity. Parents reported their main stressors as concerns about their child's future independence (76.43%), societal acceptance (72.14%), communication (66.43%), and social development (51.44%). To manage stress, they mostly used self-acceptance, active coping, and planning strategies, with consistent support from spouses and family members. Multivariate analysis revealed that parental occupation, along with emotion-focused and problem focused coping, significantly influenced family quality of life. Weighted least squares regression identifying parental age and occupation as key predictors of family quality of life. This study highlights the psychosocial challenges parents of children with ASD face, affecting their quality of life. Support from family, community, and institutions is crucial, and there's a pressing need for policies like financial aid, specialized schools, and public awareness.

Keywords: autism; coping; parents; stress.

PHB 3

Determinants of Exclusive Breastfeeding Among Mothers of Infants Under Six Months in Damak Municipality: A Cross-Sectional Analysis

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ABSTRACT

Exclusive breastfeeding (EBF) is vital for infant health, yet its practice remains suboptimal in many settings. This study aimed to assess the knowledge, attitude, social support, and sociodemographic determinants of EBF among mothers in Damak Municipality, Jhapa. A cross-sectional study was conducted among 388 mothers of infants under six months, selected via simple random sampling from a merged vaccine registry of 621 mothers. Validated tools were employed to assess key constructs: FAO's KAP guidelines for knowledge, the Iowa Infant Feeding Attitude Scale for attitude, and the Breastfeeding Support Scale for social support. Data were analyzed using descriptive statistics, chi-square tests, and logistic regression under the GLM framework. The prevalence of EBF was 32.99%, significantly below the WHO target. In the multivariable model, early initiation of breastfeeding within one hour (Odds-ratio=3.639, p=0.001), positive infant feeding attitude (Odds-ratio=1.046, p=0.018), and infant age (Odds-ratio=0.789, p=0.012) were significantly associated with higher odds of EBF. Socioeconomic factors such as income source, knowledge level, and infant morbidity were not statistically significant predictors. The model showed a pseudo R^2 of 0.10 and was significant over all ($\chi 2 = 49.98$, df = 9, $p < 0.001$). These findings underscore the need for behavior focused breastfeeding interventions, especially promoting early initiation and positive maternal attitudes. Strengthening postnatal counseling and community level support systems could improve EBF rates in similar urban Nepali contexts.

Keywords: exclusive breastfeeding (EBF); breastfeeding attitude; social support; infant feeding practices; determinants of breastfeeding.

PHB 4

Medication Adherence among People with Chronic Diseases of a Selected Peri-Urban Cluster of Budhanilkantha Municipality of Kathmandu

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ABSTRACT

The rising burden of chronic diseases globally and locally is accompanied by increasing rates of poor medication adherence, which is the result of the interaction between various factors that interact and potentiate each other's influence. The study aims to assess medication adherence and associated factors among people with chronic diseases of a selected periurban cluster of the Budhanilkantha Municipality of Kathmandu. A Community-based cross-sectional study was conducted among people with at least one chronic disease and who have been taking medicines for more than a year. Two-stage cluster sampling was used, where participants were selected randomly from a sampling frame that was developed after household listing. Total 207 face-to-face interviews were taken using a validated questionnaire. The General Medication Adherence Scale was used to assess medication adherence. Firth penalized logistic regression was used to identify predictors of medication adherence. The proportion of medication adherence among people with chronic diseases was 93.24%. The bivariate analysis has shown significant association of medication adherence with diabetes mellitus, hypertension, family history of chronic diseases, perceived expenses in medicines, missed medicines due to cost, perceived overmedication in treatment, and need of family support in remembering to take medicines whereas the multivariate analysis showed family history of chronic diseases (AOR: 5.182, 95% CI: 1.564-20.02, p-value: 0.007) as single independent predictor for medication adherence. High medication adherence was found among people with chronic diseases living in the peri-urban areas. However, it is essential to reach the optimal level by addressing multidimensional factors affecting medication adherence.

Keywords: medication adherence; treatment adherence; chronic diseases; NCDs; general medication adherence scale; WHO multidimensional framework; community.

PHB 5

Life Satisfaction and Its Associated Factors among Older Adults in A Peri-Urban Cluster of Pathari Shanishchare Municipality

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ABSTRACT

The growing aging population is a global concern, projected to reach 2.1 billion by 2050. It is escalating in Nepal, comprising 10.21% of the total population. With increased longevity of older adults, subjective well-being has become more important, with life satisfaction as its measurement. However, limited studies have examined life satisfaction holistically in Nepal. So, this study aims to assess the level of life satisfaction among older adults and identify the associated factors. A community based cross-sectional study was conducted among 172 older adults in a peri-urban cluster, i.e., Kanchan Tole Bikaas Samiti of Pathari Shanishchare Municipality using validated tools. Two-stage cluster sampling was used after household listing for quantitative survey. Life satisfaction was assessed by using the Satisfaction with life scale. Data was collected from 7th December 2024 to 22nd January 2025. The data were analyzed using Firth's penalized logistic regression in Easy R. Overall, 68.02% of older adults reported satisfaction with their life. Those dissatisfied with their financial status and with depression had an 86% less chance of having life satisfaction (AOR: 0.14, $p<0.01$, for both). Conversely, participants with absence of osteoarthritis and hearing impairment were significantly more likely to report life satisfaction (AOR: 6.17, p: 0.045 and AOR: 3.44, p: 0.032, respectively). More than two-thirds of the older adults were satisfied with their life. Interventions like improving financial security, raising mental health awareness/support and expanding health services related to chronic illness will enhance life satisfaction among older adults.

Keywords: life satisfaction; older adults; elderly; factors associated; determinants.

PHB-6

Demographic Influences on Enrollment in the Social Health Insurance Program in Nepal: A Case Study of Kathmandu Metropolitan City Ward No. 30

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ABSTRACT

The purpose of the current study is to determine whether there is a relationship, if any, between the applicant's age, gender, and marital status and their enrollment in Social Health Insurance (SHI) in Ward No. 30 of Kathmandu Metropolitan City. The aim of the study is to determine how these demographic characteristics have affected the degree of SHI program participation and the enrollment trend. Ananalyticalcrosssectionlastudywereusedinthisreserch.

ANOVA, frequencydistribution, meanandvarianceare among the statistical tools used to analyze the association between the 1,379 valid replies that are used as secondary data. One of the main conclusions is that the degree of SHI enrollment is influenced by age and marital status. ANOVA results show a substantial relationship between age and system enrollment ($F = 1,972.905$, $p < 0.001$). Well over half of SHI participants are in this category, which includes large proportions of older age groups of 56–65 and 66 years and above. Similarly, as married people made up 78.2 percent of the sample, the effect of marital status seems significant. The results of the ANOVA have shown that there are variations in enrollment between married, single, and widowed people ($F = 370.450$, $p < 0.001$). Although there was no convincing association between enrollment and gender, 59% of the sample consisted of female responders. The study's cross sectional design precludes concluding causality, and variables like education and income were not taken into account. The results nevertheless show that marital status and age are significant factors in determining the distribution of SHI enrollment. For policymakers who want to boost SHI enrollment among the typically younger, single, or male population in the first place, this research offers crucial guidance. Future studies should include more variables to have a more complete picture of the elements influencing SHI enrollment.

Keywords: social health insurance (SHI); enrollment trends; demographic factors; age influence, health policy; Kathmandu metropolitan city.

PHB-7

Impact of Family Functioning, Family Violence and Other Family Factors on Juvenile Delinquency

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ABSTRACT

Juvenile delinquency is the act of participating in unlawful behavior as minors or individuals younger than the age of majority. There is a trend of increase in juvenile delinquency all over the world with more involvement of youth in violent crime. Nepal shows a similar trend to the increasing rate of violent crime committed by a juvenile. Objective of this study is to examine the impact of family functioning, family violence, and other family factors on juvenile delinquency. Present study was a case control study entirely based on primary data collection of 354 respondents which included up to 177 juveniles and an equal number of school students collected through the convenience sampling method. Respondents present in juvenile correction homes were cases, while respondents of 8^{th}-12^{th} grads in the government schools who were never convicted for any acts of juvenile delinquency served as a control. Structural questionnaires were used to collect data on demographic, socioeconomic, individual and family factors. Bivariate and logistic regression analysis was performed to determine which factor acts as a risk or protective factor for juvenile delinquency. Present study, from fitted logistic regression children's age, aggressive behavior of children, family structure, family financial condition, punitive parenthood, mother education level, and parental attachment are found significant factors impacting on juvenile delinquency. This study reveals that children's age, aggressive behavior of children, family structure, and family financial condition are the risk factors for juvenile delinquency. Further, mother education level, punitive parenthood, and parental attachment are found protective factors for juvenile delinquency.

Keywords: juvenile delinquency; family functioning; family violence; convenience sampling; bivariate, logistic regression; parental attachment.

PHB-8

Bayesian Survival Analysis of Length of Hospital Stay of COVID-19 Patients and its Associated Factors: A Hospital-Based Retrospective Cross-Sectional Study

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ABSTRACT

The Coronavirus Disease 2019 (COVID-19) pandemic has negatively impacted healthcare systems worldwide, particularly in terms of hospital capacity and patient management. Understanding the length of hospital stay (LOS) and its associated factors is crucial for optimising resource allocation and improving patient outcomes in future for such disease. The aim of this study is to identify the predictors of the length of hospital stay of COVID-19 patients using a Bayesian survival approach. A retrospective hospital-based cross-sectional study was conducted among 141, COVID-19 positive patients' hospital stay status at College of Medical Sciences and Teaching Hospital, Bharatpur Chitwan during the first wave of COVID-19. Ethical approval was taken from COMSTH-IRC (Ref No. COMSTH-IRC/2024-23/4). Collected data was analyzed using the stan package of R studio. The primary outcome variable was the length of hospital stay while independent variables included age, sex, exposure history, comorbidities like Hypertension (HTN) and Diabetes Mellitus (DM), smoking status, shortness of breath (SOB), severity at admission, total leukocyte count (TLC), international normalized ratio (INR), serum creatinine (Cr), sodium (Na), D-dimer, he- moglobin (Hb), platelet count (Plt), and potassium (K). In this study, discharge due to recovery from COVID-19 were taken as an event while Left Against Medical Advice (LAMA) and death were taken as censored. A Bayesian parametric survival Accelerated Failure Time (AFT) model (log-logistic distribution) was was selected using Effective Number of Parameters (pD), Bayesian Information Criterion (BIC), Watanabe-Akaike Information Criterion (WAIC) criteria. Weakly informative priors were used for all parameters: regression coefficients (β) followed a multivariate normal distribution with mean vector 0 and a diagonal covariance matrix with entries 2.5 (i.e., $\beta \sim N(0, 2.5I)$), and the shape parameter (γ) follows a Gamma distribution with shape and rate parameters 0.5 (i.e., $\gamma \sim$ Gamma(0.5, 0.5)). Posterior distributions were estimated using Markov Chain Monte Carlo (MCMC) with 5,000 iterations across four chains, discarding the first 1,000 iterations as burn-in. Out of total patients, 57.4% of patients recovered, while 14.9% died during hospital stay. Log Logistic AFT model was found to be the best model. In a Bayesian log-logistic AFT model, longer hospital stays were significantly associated with SOB (Accelerator factor (AF): 1.90, 95% Credible interval (CrI): 1.38–2.61), Moderate (AF: 1.92, CrI: 1.36–2.72) and severe (AF: 2.05, CrI: 1.41–3.00) level of severity during admission, complications during hospital stay (AF: 2.18, CrI: 1.48–3.25), and prolonged INR (AF: 2.23, CrI: 1.65–3.00). Shortness of breath, disease severity during admission, complications during stay and prolonged INR were strong predictors of prolonged hospital stay among COVID-19 patients.

Keywords: COVID-19; Nepal; bayesian; log-logistic.

PHB-9

How can we Design Patient-Preferred Care? Insights on Discrete Choice Experiment among People Living with Tuberculosis in Nepal

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ABSTRACT

Gaining insights into tuberculosis (TB) patients' preferences is pivotal for developing a patient-focused care model in Nepal. This study aims to identify patient preferred interventions for improving TB care in Nepal using a choice design. We conducted a mixed-method discrete choice experiment (DCE) to elicit a patient's preferences for TB care. We identified six TB care attributes (5 attributes with 2 levels and one with 3 levels): type of patient card; gender of the healthcare provider; psychosocial support; waiting time; type of TB care provider; and transportation incentive. A total of 24 choices were generated using a fractional factorial design and then organized into four blocks, each containing six unlabelled choice sets. Participants were randomly assigned a block number through a lottery and were instructed to select their most preferred option between two hypothetical TB care models. We employed a conditional logit model to determine the patient preferences for different attributes of TB care and estimated the relative importance of each attribute using the range method. The final DCE analysis included 133 participants (96% response rate). Overall, participants had significant positive preference for three attributes: patient card with instructions [Relative importance (RI): 38%, $p<0.001$]; provision of psychosocial support (RI: 30.7%, $p<0.001$); and a patient waiting time of less than 30 minutes (RI: 15.6%, $p=0.002$), for improving TB care. Including patient preferences using DCE in TB care helped identify the contextual interventions for patient centred TB care in Nepal.

Keywords: discrete choice experiment; patient-centered; preferences; tuberculosis; Nepal.

PHB-10

Factors Influencing Teenage Pregnancy Among Dalit Ethnic Groups In Bharatpur Metropolitan City, Chitwan

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ABSTRACT

Teenage pregnancy refers to any pregnancy from a girl who is 10-19 years of age. This study aimed at assessing the factors influencing teenage pregnancy at first birth among the Dalit ethnic groups in Bharatpur Metropolitan City. A community based cross-sectional study using face-to-face interview method was carried out in Bharatpur Metropolitan City, Chitwan, Nepal. A total of 217 married Dalit women who had given birth to at least one child and who were less than 25 years of age during the survey were considered as a sample. The data was collected from October 1st 2020 to 31st December 2020. We used Pearson's Chi-square test and binary logistic regression analysis to assess the factors influencing teenage pregnancy among Dalit ethnic groups in Bharatpur Metropolitan city, Chitwan. Among 217 married women of Dalit ethnic groups, there were 93(42.9%) married women who gave birth to their first child during teenage years and 124 (57.1%) women gave first birth after crossing the teenage years. Results show that teenage pregnancy at first birth differ significantly with mother's education level [Just Literate (OR = 5.88; CI = 2.53-13.69)], Husband's education level [Just Literate (OR = 3.06; CI = 1.33-7.02)], Husband's occupation [Unemployment (OR = 7.87; CI = 2.17-28.46)] and Husband's age at marriage [≤ 20 (OR = 6.01 CI = 3.27-11.06)]. Carrying out advocacy against teenage marriage & teenage pregnancy as well as implementing comprehensive sexuality education and safe motherhood education targeted to Dalit ethnic groups is the need of the hour.

Keywords: factors influencing teenage pregnancy; teenage pregnancy.

Modeling Climate Change Impact on Tourism: Variability, Severity, Impact and Tourism Development

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ABSTRACT

Climate change poses a significant threat to tourism-dependent regions, vulnerable mountain areas like the Annapurna Conservation Area (ACA) Nepal. This study examines the impact of climate change variability and severity on tourism development, focusing on direct and indirect effects on local support for tourism. The research applies the Stimulus-Organism-Response theory to analyze how climate change perception influenc- es tourism development in the ACA. A survey of 490 residents was conducted using a Likert scale across the Mustang, Lamjung, and Kaski districts. Data were analyzed using Partial Least Squares-Structural Equation Modeling (PLS-SEM) to assess the relationship among climate change variability, severity, impact, impact on tourism, and support for tourism development. The findings reveal that climate change variability significantly influenced impacts (β=0.275, p=0.001) as well as impacts on tourism (β=0.375, p<0.001), and a negative impact on tourism development (β=-0.045, p=0.437), but not significant. Climate change severity significantly influenced impact (β=0.254, p=0.001), but had insignificant impacts on tourism (β=0.086, p=0.088) and tourism developments (β=0.07, p=0.911). Climate change impacts on tourism influenced tourism development (β=0.147, p<0.006). This study provides valuable insights into the complex relationship between climate change and tourism development. The findings demonstrate that climate change variability significantly influences both general climate change impacts and its specific effects on tourism, though its direct negative effects on tourism development were statistically insignificant. Similarly, climate change severity contributes to overall climate impacts, but it does not directly translate into significant effects on tourism or its development. The perceived impact of climate change on tourism emerges as a key factor positively influencing local support for the need for adaptive measures to sustain amid changing climatic conditions. Policymakers and stakeholders should prioritize climate adaptation strategies that address variability and severity while emphasizing tourism resilience, ensuring long-term sustainability.

Keywords: climate change, structural equation modeling, socio-cultural impact, tourism development, annapurna conservation area, Nepal.

Climate-Driven Migration Intentions in Gandaki Province, Nepal: A PLS-SEM Analysis of Perception about Climatic Factors, and Adaptation Strategy

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ABSTRACT

Climate change is increasingly influencing migration patterns in climatic vulnerable regions like Gandaki Province, Nepal. The rural livelihoods are highly vulnerable to climatic factors (variability and severity). Understanding the interplay between climatic factors, adaptation strategies, and migration intentions is critical for developing effective policy responses. This study investigates how perceptions of climatic factors shape migration intentions, a particular focus on the mediating roles of perceived climate impacts and adaptation strategies. The study employed a structured survey of 493 households across four climate vulnerable districts in Gandaki Province (Baglung, Myagdi, Mustang, and Lamjung). Grounded in Protection motivation theory (PMT), we developed a conceptual framework analyzing relationships between climatic factors (variability and severity), perceived climate impacts, adaptation strategies, and migration intentions. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), we tested both direct effects and mediated pathways through which climate perceptions influence migration intentions. The PLS-SEM approach allowed us to evaluate the measurement model's reliability and validity before examining structural relationships in our climate migration framework. The PLS-SEM analysis confirmed that: Climatic variability and severity have significant positive effects on perceived climate impacts with value of regression coefficients and T values (β=0.422, t= 7.53) and (β=0.388, t = 6.89) respectively. Perceived impacts and adaptation strategies significantly influence migration intentions with (β=0.20, t= 3.93) and (β=0.335, t=7.02) respectively. There was significant influence of variability on adaptation (β=0.223, t=3.65) but not by severity. Mediation analysis reveals that impact of climate change significantly plays the mediating role between both variability and severity with migration intention while adaptation strategies mediated significantly between variability and migration intention. The study demonstrates that while adaptation strategies provide partial mitigation, they cannot fully offset climate induced migration pressures in Nepal's hilly and Himalayan region. These findings underscore the necessity for integrated policies that combine immediate adaptive measures with long term, climate-resilient development to effectively address the root causes of displacement.

Keywords: climate change; migration intention; adaptation strategy; PLS-SEM, climatic factors.

Ordinal Logistic Regression Approach: A Case Study on Teacher Job Satisfaction

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ABSTRACT

A case study on teacher job satisfaction among secondary school teachers is vital for improving education quality and ensuring teacher retention. This study aims to assess job satisfaction levels and compare satisfac- tion between private and government school teachers in Bidur Municipality, Nuwakot,Nepal. It also identifies key factors associated with their job satisfaction. A cross-sectional survey was conducted using a self-administered questionnaire. Data were collected from 381 teachers (from 17 private and 21 government schools) through stratified proportionate random sampling. Descriptive and inferential statistics were used to examine the influence of demographic, socioeconomic, and job-related variables on job satisfaction. Satisfaction levels were classified into three categories: dissatisfied (14.2%), neutral (34.1%), and satisfied (51.7%). Bivariate analysis showed that factors like gender, marital status, ethnicity, education level, school type, income, and teaching subject had no significant impact. However, family satisfaction, school location, and several job-related factors were found to influence satisfaction. Given the ordered nature of the dependent variable, ordinal logistic regression was applied after satisfying all model assumptions. The final model identified seven significant predictors: working condition, pay, responsibility, job security, recognition, workload, and local government support. Notably, responsibility and recognition showed the strongest associations. The study concludes that improving working conditions, pay structures, responsibility, recognition, workload, job security, and supportive policies from local authorities can significantly enhance teacher job satisfaction, ultimately contributing to better educational outcomes.

Keywords: job satisfaction; secondary school teachers; ordinal logistic regression; government and private schools; education quality.

Breaking Barriers: Perspectives from Nepali Women on Their Experiences While Studying

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ABSTRACT

The study focuses on the experiences of Nepali women pursuing higher studies abroad, with a specific reference to the cultural and societal issues they face in their educational quests. Grounded in qualitative interviews and thematic analysis, the study examines how these women direct new education and social environments while negotiating the burdens of traditional gender roles and societal pressure at home. The study seeks to identify the most significant social and cultural issues that define their life overseas, such as identity negotiation, cultural adaptation, and perceived gender discrimination by the host and home cultures. The study also investigates the coping mechanisms utilized by these students, such as building peer networks, institutional support, and reconceptualizing personal and career aspirations.The research discovers that with international education offering unlimited potential for development and empowerment, it drives the responsibility of challenging deep rooted social assumptions and norms that typically lead Nepali women abroad. By way of such understanding of such complicated experiences, this research lends support to more knowledgeable policy address on gender and mobility in the context of international education and recommends policy interventions to enable gender equitable access and wellbeing within international study contexts.

Keywords: Nepali women; international education; gender and mobility; cultural adaptation; identity nego- tiation.

Impact of Social Media on Students' Academic Performance

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ABSTRACT

The teaching-learning process has undergone an enormous change because of the benefits of technology in education. One such innovation which significantly affects kids' academic performance is social media. This study, "Impact of Social Media on Students' Academic Performance," examines the connection between Tribhuvan University students' academic performance and their use of social media. This study explores the impact of social media usage on the academic performance of students at Tribhuvan University, Kathmandu. A quantitative research design was adopted to investigate the relationship between social media usage and aca- demic performance among students of Tribhuvan University. Data were collected from 330 respondents using a structured questionnaire, targeting students from various faculties and age groups to ensure diversity. The sample size is considered statistically adequate based on conventional sampling guidelines. The questionnaire facilitated wide reach and independent response collection, minimizing bias. Data were analyzed using SPSS version 25, employing descriptive statistics, correlation analysis, and regression analysis to explore associations and predictive relationships between social media usage and academic outcomes. The findings reveal a significant positive correlation ($r = 0.381$, $p < 0.01$) between social media engagement and academic outcomes, highlighting its dual role as both a valuable educational tool and a potential distraction. While social media facilitates communication, collaboration, and resource sharing, excessive usage can negatively affect academic focus. Regression analysis shows that social media accounts for 14.5% of the variation in academic performance, with other factors contributing to the remaining variance. The study emphasizes the importance of moderation, self regulation, and parental involvement in mitigating negative effects. The study concludes that social media has a complex influence on academic performance, requiring a balanced approach to leverage its advantages while addressing its challenges. Recommendations include fostering self regulation skills, parental engagement, and institutional guidelines for responsible social media use.

Keywords: social networking sites; academic performance; social media, gender; Tribhuvan University.

EAF 6

Air Pollution Trends and Regional Variability in Nepal

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ABSTRACT

Air pollution is a major public health concern in Nepal, particularly in urban centers and low-lying regions. This study aims to analyze seasonal and annual trends in pollution levels, assess regional variations across Nepal's ecological zones and provinces, and investigate long-term changes in air quality. We used air quality data from 24 monitoring stations covering the years 2016 to 2021. Data were cleaned and processed using R, Python, and SPSS, with missing values imputed through time-based interpolation and time series method. For analysis and forecasting, we applied ARIMA models, bootstrapping techniques, and Bayesian methods to capture trends and uncertainty. Results reveal significant spatiotemporal variability in pollution levels, with marked differences across regions and seasons. These findings underscore the value of robust statistical methods in environmental monitoring and offer important insights for public health planning and air quality management in Nepal.

Keywords: air pollution, COVID-19, Nepal, spatiotemporal analysis, forecasting, ARIMA, bayesian methods, python, R, SPSS.

Unraveling Poverty in Nepal: A Review of its Constraints and Determinants

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ABSTRACT

This study intends to provide an in-depth review of the literature on the determinants of poverty from the Scopus database and Google Scholar. It includes 43 original, peer reviewed articles. The review examines how different factors, such as the economy, population, culture, location, and environment, influence poverty. The most common factors influencing poverty are household size, education, age, gender, and job status. Therefore, the main objective of this study is to get concepts, measurements, causes, and the advancement of poverty. Many of the Asian studies emphasize more on education, age, gender, marital status, income, whether people live in cities or rural areas, and money sent from abroad. While African studies highlight farming, access to money, household size, jobs, and how climate affects people. These differences show that the causes of poverty may vary from region to region.

Keywords: poverty determinants, descriptive statistics, regression, regional disparities, data-driven policy.

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