

PROCEEDINGS AND PAPER ABSTRACTS

OF THE

Himalayan Policy Research Conference (Fourteenth Annual) Nepal Study Center

Thursday, October 17, 2019, Madison Concourse Hotel and Governors' Club, Symposium
Venue of the 48th South Asian Conference at the University of Wisconsin-- Madison

Department of Economics, The University of New Mexico, 1915 Roma Ave NE, MSC05 3060,
Rm. 1019 Albuquerque, NM 87131
<http://nepalstudycenter.unm.edu>, Ph: 505-277-5903, nsc@unm.edu

Nepal Study Center, University of New Mexico



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Session 1: Health outcomes and mitigation strategies

Chair: Kesana Srinivasa Rao, Giri Institute, India

Discussants:

Mandy Liu, University of New Mexico, USA

Disha Shende, University of New Mexico, USA

Siobhan Yilmaz, University of New Mexico, USA

Session 2: Price, Food Security, and Crop Diversification

Chair: Siobhan Yilmaz, University of New Mexico, USA

Discussants:

Soumyajit Chakraborty, University of New Mexico, USA

Kesana Srinivasa Rao, Giri Institute, India

Session 3: Natural Disaster and Adaptation

Chair: Keshav Bhattarai, University of Central Missouri, USA

Discussants:

Mohammad Mashiur Rahman, University of New Mexico, USA

Sakib Mahmud, University of Wisconsin-Superior

CONTENTS

Welcome Note from Editors	Page 1
Acknowledgement	Page 3
Papers and Abstracts	Page 4

PAPER AND ABSTRACTS

Health outcomes and mitigation strategies

Diffusion of mHealth Innovations for Nepali Adolescents: A Pilot Study on Indirect Mental Costs and Cultural Context Considerations	Page 5
---	--------

Mothers' vs Daughters' Intentions to Vaccinate Against HPV and Their Willingness to Pay in Nepal	Page 6
--	--------

Effect of Social Networks on The Emotional Health of Cancer Patients in Nepal.....	Page 7
--	--------

Food Security, Employment and Human Capital

Food and Nutrition Security in Nepal.....	Page 8
---	--------

Skill development and employment prospects in India: a case study of Uttar Pradesh.....	Page 9
---	--------

Hypergamy and Human Capital: An Inquiry into the Indian Marriage and Labor Markets.....	Page 10
---	---------

Natural Disaster and Adaptation

Can access to natural capital, public programs, and remittances influence private defensive strategies of vulnerable coastal communities against natural disaster? Evidence from the coastal areas of Bangladesh.....	Page 11
---	---------

Estimating the Household's Preference for a Solid Waste Management System in Siddharthanagar Municipality, Nepal; A Choice Experiment Approach.....	Page 12
---	---------

Welcome Note from Editors

On behalf of the editorial board of the *Development Journal of the south (DJS)* and the conference organizing committee, I would like to thank all the participants at the Fourteenth Annual Himalayan Policy Research Conference (HPRC) held at the venue of the University of Wisconsin's 48th Annual South Asian Conference, Madison, WI.

As usual, we had a very successful event with an enthusiastic participation from all over. A larger number of abstracts were carefully screened and ranked by a team of our dedicated NSC member scholars – Dr. Mukti Upadhyay, Dr. Vijaya Sharma, Dr. Sakib Mahmud, Dr. Prakash Adhikari, and Dr. Shikha Silwal. NSC was established at the University of New Mexico in 2004 with the objective to promote policy research related to the South Asian region and the countries of the Himalayan region. The NSC team remains dedicated to creating platforms for the enhancement of knowledge sharing, particularly in the areas of sustainable development, environment, poverty, governance, and health. Among its other prominent activities, NSC publishes an e-portal *Development Journal of the South* which is a peer reviewed journal and maintains an electronic repository *Himalayan Research Papers Archive* to allow scholars to upload, store, and disseminate policy research, coordinates the Himalayan study abroad program, and doctoral and post-doctoral research projects.

Nepal Study Center has added a milestone by facilitating the signing of the Memorandum of Understanding (MOU) between the University of New Mexico and the Kathmandu University (KU) and the Centre for Integrated Mountain Development (ICIMOD)'s 8-country Himalayan University Consortium (HUC). On an NSF-supported exploratory research trip, NSC formed an interdisciplinary team at UNM and went to Nepal to advance understanding of the linkages and feedback mechanisms between biophysical and social factors. This is a research initiative that has led to creation of an international research hub which is Lumbini Center for Sustainability in Siddharthanagar, Lumbini, Nepal of Pratiman Neema Memorial Foundation.

Our inaugural HPRC in 2006 was ambitious in ensuring a significant convergence of researchers working on policy relevant issues on South Asia. That foundation work led to consecutive successes in the following years and has now made HPRC a durable annual event. We hope that these conferences, together with research activities performed at NSC and by its research affiliates, will culminate in the formation of an *Association for Himalayan Policy Research*. In recognition of the activities directly and indirectly supported by NSC, many scholars from North America, South Asia, Europe, the Far East, and Australia have joined this network. Our policy research association will continue to expand this global network of scholars, professionals, and policy practitioners interested in the development of the South Asian region.

The Sustainable Development Action Lab (SDAL), a new initiative from Nepal Study Center, concept builds upon the field research track record of the Nepal Study Center (NSC), a South Asia focused research center at UNM, and its various doctoral research activities over the last several years. This is an interdisciplinary approach to research, learning and problem solving by bringing together the three disciplines: *Natural Sciences, Social Sciences and Humanities*. Additionally, The Himalayan Study abroad Program initiated by NSC, which is an experiential learning

experience that combines research, hands-on community service-learning projects, & eco-adventure. This semester abroad platform will be available to other program around the country.

We are grateful to the University of Wisconsin's 48th Annual South Asian Conference for giving us the pre-conference venue. We are also thankful to those who have provided financial support to conduct this conference. We appreciate the help from the staff and graduate students of the Department of Economics, UNM, and the goodwill and support of many friends of NSC. We particularly thank UNM student Mohammad Mashiur Rahman for his assistance. Finally, we would like to thank our guest editors Shikha Silwal and Mohammad Mashiur Rahman for their help in preparing the HPRC proceedings. NSC also would like to thank NSC secretariat Tami Henri for her support.

Sincerely,

A handwritten signature in blue ink that reads "Alok K. Bohara". The signature is written in a cursive style and is underlined.

Dr. Alok K. Bohara, PhD
Professor, Department of Economics
University of New Mexico
Director, Nepal Study Center

Acknowledgement

NSC would like to encourage all the friends of NSC to continue their financial support so that it can successfully undertake various tasks: update software, run conferences, produce proceedings, maintain electronic research repository, advertise and publish journals (DJS). NSC is a not-for-profit organization registered under the College of Arts and Sciences, University of New Mexico. NSC would like to thank University of Wisconsin, Madison, for providing the platform for the last 13 years to participate in the conference.

PAPERS AND ABSTRACTS

Health Outcomes and Mitigation Strategies

Diffusion of mHealth Innovations for Nepali Adolescents: A Pilot Study on Indirect Mental Costs and Cultural Context Considerations

Siobhan Yilmaz*

University of New Mexico, USA

Alok K. Bohara[‡]

University of New Mexico, USA

Adolescents are slowly being recognized as a generation, worldwide, that may require different policy approaches to improve their health and wellbeing, including the adoption of mobile based health interventions (e.g. mHealth). While mHealth interventions are growing in popularity, many researchers/policymakers appear to have neglected assessing potential (indirect) costs/negative consequences from their use. Evidence from the developed world shows strong associations between cell phone use and negative mental health outcomes, but such findings are minimal in developing world contexts. Using primary data from a large-scale, school-based survey of 17-19-year-old adolescents in southwestern Nepal, this work investigates such a tension between mobile/smartphone usage as a true mobile health (mHealth) opportunity in Nepal or as a potential problem, introducing deleterious mental health effects from over-use. Analysis, founded in Basic Psychological Needs Theory, examines the mediating role of mobile phone use between the protective and adverse factors of the socio-cultural environment and their subsequent impact on mental health, using structural equation modeling. Additionally, given the endogeneity between mental health and certain cellphone usage types, we include use of instrumental variables techniques from risky behavior literature to attempt to account for this simultaneity concern.

* Email: sdegnan@unm.edu

[‡] Email: bohara@unm.edu

Mothers' vs Daughters' Intentions to Vaccinate Against HPV and Their Willingness to Pay in Nepal

Mandy Liu[‡]

University of New Mexico, USA

Alok K. Bohara^{*}

University of New Mexico, USA

Human papilloma virus (HPV) infection is responsible for virtually 100% of cervical cancer diagnosed in the world. HPV 16 and 18 are the two types of the virus that alone contribute to over 70% of all cervical cancer cases. Yet, despite the wide suffering caused by this disease, these viruses are vaccine-preventable (Clifford G, et al, 2006). Thus, understanding individual incentives regarding the HPV vaccine can lead to policies that can prevent most cervical cancer experienced in the world. While the HPV vaccine has been given considerable attention in developed countries, awareness in developing countries remains small. This is despite the fact that the developing world has witnessed increased rates of this disease. For example, recent data ranks cervical cancer as the leading cause of female cancer in Nepal (Bruni, et al, 2018). I am conducting the survey in Nepal during the summer of 2019. Using this primary survey data, I will analyze mothers' and daughters' openness to the HPV vaccine as well as their current awareness of HPV in Nepal. I further estimate their willingness to pay for the HPV vaccine. The hypothesis is either mothers or daughters do not have much information about HPV and HPV vaccine, however, there is a large demand for the HPV vaccine.

Keywords: HPV vaccine; Awareness; Theory of Planned Behavior; Willingness to Pay

JEL Code: I12, I18, D81

[‡] Email: mliu@unm.edu

^{*} Email: bohara@unm.edu

Effect of Social Networks on The Emotional Health of Cancer Patients in Nepal

Disha Shende*

University of New Mexico, USA

Alok K. Bohara††

University of New Mexico, USA

In the context of developing countries, chronic illness is one of the dominant health burdens, and cancer is responsible for majority of the deaths. This study tries to understand how social networks affect the emotional well-being of the cancer patients. The data for this paper comes from the field survey that was conducted in four major hospitals in Nepal in Summer 2018. The survey collected data on quality of life of cancer patients and patients of other chronic illnesses. The data suggests that the cancer patients suffer from higher levels of emotional stress compared to other patients. We hypothesize that social networks can help reduce this emotional burden and improve their emotional well-being. The social network is measured by the quality of the relationships of cancer patients with their friends, family and colleagues. The emotional burden (depression) is measured using nine questions from Patient Health Questionnaire (PHQ-9) which is used to assess the degree of emotional stress among the patients. The study uses structural equation modelling to understand the effect of social networks in coping with depressive symptoms. We use Stress Buffering Model (to get indirect effect) and Direct Effect Model (to get direct effect) to understand the how the total effect of social network on depression takes place. We find that social network significantly reduces depression among cancer patients via both direct and indirect effect. We also find that social network helps women more in coping up with depression compared to the men cancer patients. These results strongly advocate for the importance of social networks in improving the quality of life of cancer patients.

Keywords: HPV vaccine; screening; cervical cancer; cost-effectiveness; dynamic optimal control model

* Email: dvshende@unm.edu

†† Email: bohara@unm.edu

Food Security, Employment and Human Capital

Food and Nutrition Security in Nepal

Keshav Bhattarai*

University of Central Missouri

Mahmoud Yousef

Nabina Nepal

In this paper, we present the outcomes of a computer-based model that demonstrates the food security and deficit areas of Nepal's 77 districts within seven provinces. This food and nutrient requirement analysis is done at 753 units (460 Village Councils, 276 municipalities, 11 sub-metropolitans, and 6 metropolitan—hereafter referred to as VCM). Agricultural lands for each VCM are estimated from recent satellite images. Of the agricultural lands, areas within a 2-km distance from water bodies and within the slope of 0-0.5 percent are classified as irrigable lands that are suitable to produce paddy and winter crops. Agricultural lands with over 0.5 percent slope and over 2 km distance from water bodies are classified as non-irrigable—these are used for cereal crop production. Taking 20 years average yields per hectare of various crops from 75 districts (now 77); total crop production is estimated for both irrigable and non-irrigable lands for each individual VCM. The total population for each VCM is taken from the Local Level Reconstruction Council (LLRC) and Election Commission (EC). Using the population age cohort for Nepal that classifies Nepal's Demography between the ages of 0-14, 15-59, and 60 and above, populations for each VCM are classified according to these groups. Nutrient (calorie) requirements for different age cohorts is calculated using the nutrient tables prepared by the U.S. Department of Agriculture (USDA). Three models are run to estimate the food requirements for both genders for different age cohorts. Each cohort is divided into a) sedentary; b) moderately active; and c) active. Based on the food and nutrient needs (assuming 2,200 calories need for each person per day in a normal condition), we compared the food security in each VCM, across VCM within a district, and across districts within a province and among provinces within Nepal.

* Email: bhattarai@ucmo.com

Skill development and employment prospects in India: a case study of Uttar Pradesh

Kesana Srinivasa Rao*

Giri Institute of Development Studies, India

India is in a dire need of reducing unemployment problem very soon to enjoy the full benefits of becoming youngest nation by 2020, and that can only be done through skill development. This rate of job displacement is not far out of line with previous periods. One reason why automation is so horrifying a prospect today is that the future was very uncertain in the past. We lacked skills and tools for long-range forecasting. An important current development is that today's automation is likely to usher in machines that can plausibly replace humans in several spheres where it was once thought that humans would be irreplaceable. The Davos camp has identified human capital and sustainable resources as the two key challenges for India. Education and skills are what normally comprise human capital. While educational qualifications are essential for entering the labor market, it is the skills that will finally determine one's employability strength. Young people desperately search for entry-level jobs while employers, ironically, are unable to find people with the right skills. They face regular attrition and a monthly turnover sometimes as high as a fifth of their workforce. At the same time, 40 percent of employers blame skill shortage for entry-level vacancies. The imperative for skilling young people is well-recognized and has been flagged as a national priority for almost a decade, with significant initiatives being launched by the government. The sad part is that only 10 percent of the total workforce in the country receives some kind of skill training. India is poised to become the youngest country in the world by 2020, with an average age of 29 years. It's, 869 million strong workforce accounts for around 28 percent of the world's workforce. Although India's huge demographic dividend is considered to be one of its strengths, our optimism needs to be moderated. If the youth are not skilled and face unemployment challenges, it might turn out to be a liability rather than an asset. India faces a huge skill development challenge. It is estimated that around 50 to 70 million jobs will be created in India over the next five years and about 75 to 90 percent of these will require some vocational training. For India's demographic transformation to be considered a "dividend," the youth will need to acquire necessary knowledge and skills to contribute towards nation-building. Development programs and their allied industries should develop the capability to cross-train the youth and build a culture

* Email: kesana22@gmail.com

Hypergamy and Human Capital: An Inquiry into the Indian Marriage and Labor Markets

Soumyajit Chakraborty*

University of New Mexico, USA

One of the least researched yet a popular term in social sciences is ‘Hypergamy.’ In simple words, hypergamy implies that women marry up in terms of their partners’ human capital and socioeconomic status (Rose, 2004). From a societal point, it might jeopardize the “success gap”- the difference in the likelihood that a woman with lesser years of education marries minus the likelihood that a woman with higher years of education marries (Rose, 2005). However, the economics of hypergamy is still unclear and not generalizable at all. Recent theories have shed light on the marriage markets of the developed economies like that of USA, Norway, etc. but there is no single paper to inquire the Indian marriage market, probably due to its complex nature. First, the practice of “arranged” marriage and secondly, the prevalence of dowry system makes the treatment difficult for researchers. This paper uses the India Human Development Survey (IHDS) data for 2011-12. IHDS is a nationally representative sample survey with longitudinal data for 2004-05 and 2011-12. The purpose of this working paper is to find if difference in the “success gap” between women and men is statistically significant. The overreaching aim of the (advanced) paper is to identify if endogamy and hypergamy are practiced widely in the Indian market for marriages, and if intergenerational human capital accumulation plays any crucial role across different socioreligious groups. Proceeding that, the paper intends to borrow the sociological framework of “Victorian” equilibrium versus “Sex and the City” equilibrium and apply a strategic game theoretical model for equilibrium solutions.

Keywords: hypergamy, human capital, marriage, success gap, India

*Email: soumyajitchakraborty@unm.edu

Natural Disaster and Adaptation

Can access to natural capital, public programs, and remittances influence private defensive strategies of vulnerable coastal communities against natural disaster? Evidence from the coastal areas of Bangladesh

Sakib Mahmud*

University of Wisconsin- Superior, USA

A.K. Enamul Haque

East West University, Bangladesh

Kolpona E. Costa

East West University, Bangladesh

Zahir H. Khan

Transparency International, Bangladesh

This paper identifies major factors influencing private adaptation strategies, a form of climate-risk resiliency, of vulnerable coastal communities of Bangladesh against severe cyclonic storm events. Given the existing government sponsored disaster relief and rehabilitation programs, the study explores whether access to natural capital, remittances, income and asset ownership, and other forms of resource accessibility lead to improved outcome for the coastal communities to mitigate risks and cope against major cyclonic storm events. To address the research question, an empirical analysis is performed based on household survey data of more than 600 households spanning three (3) southern coastal districts of Bangladesh that were exposed to two severe cyclonic storm events, *2007 Cyclone Sidr* and, *2016 Cyclone Roanu*. Findings from the empirical analysis reveal that private adaptation cost on home improvements to reduce risks of facing storm-inflicted damages is influenced by household location relative to government-sponsored climate resilience programs, such as, embankments, vehicular road, primary school, and cyclone shelters, and a natural forest. In addition, access to external finance and non-governmental organization (NGOs), asset ownership, and income, play significant role in shaping household decision to invest in storm-resistant homes. Although remittances have impact on coastal household adaptation behavior, its influence turned out to be somewhat weak. Interestingly, findings from the study also reveals that households living inside polders and close to a natural forest, spend low on storm-resistant home improvements compared to other vulnerable coastal households.

Key words: Private adaptation strategies; defensive behavior; resiliency; Cyclone Sidr; Cyclone Roanu; Bangladesh

* smahmud@uwsuper.edu

Estimating the Household's Preference for a Solid Waste Management System in Siddharthanagar Municipality, Nepal; A Choice Experiment Approach

Mohammad Mashiur Rahman *

University of New Mexico, USA

Alok K. Bohara §§§

University of New Mexico, USA

The developing countries' municipalities are experiencing faster growth in population and growth emerging an enormous burden of household's solid waste. Currently Siddharthanagar municipality in Nepal - a gateway of tourist attraction and a border city – is producing solid waste beyond the capacity of collection resulting a significant portion of waste unmanaged. This paper deploys a choice experiment method to estimate the preference and willingness to pay for a better solid waste management system. The empirical analysis uses Conditional Logit as a base model as well as Generalized Multinomial Logit Model to increase the precision of Marginal Willingness to Pay (MWTP) for different attributes of the choice set. By utilizing primary data collected on 610 households, we find a potential preference for a better waste management service. Additionally, households show a significant MWTP for each of the attributes.

Keywords: Solid waste Management, Choice Experiment, Willingness to pay, Generalized Multinomial Logit Model (GMNL)

* mmasgiur70@unm.edu

§§§ bohara@unm.edu