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Chief Editor
Dharam Vir

Volume 31, Number 1 (Summer), 2018



CENTRE FOR STUDIES OF NATIONAL DEVELOPMENT
MEERUT-250004 (INDIA)

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**CENTRE FOR
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D-59, Shastri Nagar, Meerut-250 004 (India)

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Journal of National Development

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The Journal of National Development (JND) is an interdisciplinary bi-annual peer reviewed & refereed international journal committed to the ideals of a 'world community' and 'universal brotherhood'. The Journal is a joint effort of like-minded scholars in the field of social research. Its specific aims are to identify, to understand and to help the process of nation-building within the framework of a 'world community' and enhance research across the social sciences (Sociology, Anthropology, Political Science, Psychology, History, Geography, Education, Economics, Law, Communication, Linguistics) and related disciplines like all streams of Home Science, Management, Computer Science, Commerce as well as others like Food Technology, Agricultural Technology, Information Technology, Environmental Science, Dairy Science etc. having social focus/implications. It focuses on issues that are global and on local problems and policies that have international implications. By providing a forum for discussion on important issues with a global perspective, the *JND* is a part of unfolding world wide struggle for establishing a just and peaceful world order. Thus, the *JND* becomes a point of confluence for the rivulets from various disciplines to form a mighty mainstream gushing towards the formulation and propagation of a humanistic world-view.

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The Journal of National Development is published in volumes of approximately 250-300 pages, divided into two bi-annual issues—summer and winter. Besides, a special issue in Hindi is also published every year to meet the demand of social scientists, both research scholars and teachers of Hindi speaking states of India.

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Traditional and Innovative Approaches : In Perspective of Biodiversity Conservation

Jolly Garg*

Biodiversity, or biological diversity, is the variety of all species on earth. It is the different plants, animals and micro-organisms, their genes, and the terrestrial, marine and freshwater ecosystems of which they are a part. The main threats to our biodiversity are loss, fragmentation and degradation of habitat. Biodiversity boosts ecosystem productivity where each species, no matter how small, all have an important role to play. For example, A larger number of plant species means a greater variety of crops. Greater species diversity ensures natural sustainability for all life forms. The present paper is an attempt to analyze traditional & innovative approaches in perspective of biodiversity conservation, It has been shown that the need of the hour to expand and evolve approaches to twenty-first century to phytobiodiversity conservation and to strictly follow the global-environmental ecosystem approach Implementation.

[**Keywords :** Information and communication technology, The Internet, World wide web, Global Internet System, Mobile Phone Technology, WAP Browsers, Environmental ethics, Sustainable development, Phyto-biodiversity conservation]

1. Introduction

It is widely accepted that biodiversity loss is happening globally. Its nature and causes need far better public understanding and learning in order for it to be stopped. This study revealed the plenty of educational uses of traditional approach and modern Information and Communication Technology in biodiversity conservation.

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Biodiversity is the vast array of all the species of plants, animals, insects and the micro-organism inhabiting the earth either in the aquatic, aerial and the terrestrial habitats. The human civilization depends directly or indirectly upon this biodiversity for their very basic needs of survival i.e., food, fodder, fuel, fiber, fertilizer, timber, liquor, rubber, leather, medicines and several other raw materials. Biodiversity is also essential for the maintenance of Global Ecosystem i.e. for the maintenance of Hydrological Cycles, Bio-geochemical cycles and Oxygen-Carbon di oxide cycle. This biodiversity is the condition for the long term sustainability of the environment, continuity of life on earth and the maintenance of its integrity. 'Biological diversity' means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems. (Convention on Biological Diversity 1992). Biodiversity is a compound word derived from 'biological diversity' and therefore is considered to have the same meaning. The variety of life at every hierarchical level and spatial scale of biological organizations : genes within populations, populations within species, species within communities, communities within landscapes, landscapes within biomes, and biomes within the biosphere. (Wilson, 1988). This study is essential in view of accelerating biological and cultural landscape degradation, a better understanding of interactions between landscapes and the cultural forces driving them is essential for their sustainable management. The Environmental Ethics are the links of Traditional knowledge from our fore-fathers/ancestors to the present generation. The term ethics is derived from Greek word ethos which means character. It refers to one's ability to distinguish the right from the wrong, the values, beliefs and actions, which shape the character of a person and the society. The discipline concerned is also referred to as moral philosophy. The notion of 'right' and 'wrong' has varied from time to time, so have the "believes" and "values" of people. However, there are certain ethical principles, which have been universally acceptance and have remained unchanged throughout the entire course of human history. Some of the widely accepted Environmental Ethical principles are honesty, integrity, righteousness, being caring and compassionate with nature, having respect for trees and a fair and open mind, which is willing to admit mistakes etc. It is these universally accepted ethical believes which help us to formulate a relatively new discipline of philosophy, which has been referred to environmental ethics. The Environmental Ethics refers to the issues, principles and guidelines relating to the human interactions with their environment. Environment has to be set right by the people and has to be for the people (Garg, 2017).

2. Review of Literature

Conservation Principles are the Main Source of traditional Knowledge in Ancient Texts. Ancient texts make explicit references as to how forests and other natural resources are to be treated. Sustainability in different forms has been an issue of development of thought since ancient times. For example, environmental principles were designed in order to comprehend whether or not the intricate web of nature is sustaining itself. These principles roughly correspond with modern understanding of conservation, utilization, and regeneration of environmental elements. "The tree is a peculiar organism of unlimited kindness and benevolence and makes no demand for its sustenance, and extends generously the product of its life activity. It affords protection to all human beings, offering shade even to the axmen who destroy it". (Gautama Buddha, 487 B.C.). "Thousands and hundreds of years if you want to enjoy the fruits and happiness of life, then take up systematic planting more trees" (Rigveda, 2000 B.C.). "The God who exist in the Universe, lives in air, water, in fire, and also in trees and herbs, men should have reverence for them" (Upanishads, 1500-600 B.C.); "So long as this earth is full of nature (wild animals and plants, human race is going to flourish" (Charak Samhita, 4th-5th Cent. A.D.); "There is not an animal that moves about on the earth, nor a bird flies on its wings, but are communities like you, so have reverence for them" (Quran, 6 : 39 QZ); "even as the green herb have I given you all things" (Holy Bible, genesis 9 : 3); "The universe along with its creature belong to the Lord. No creature is superior to any other. Human beings should not to above the nature. Let no species encroach over the rights and privileges of other species" (Iso-Upanishads, 1500-600 B.C.). "Man does not has the right to destroy what he cannot created. The humans race is not an alien species to exploit it". Environmental ethics of Bisnoi community suggest compassion to wildlife, and forbid felling of *Prosopis cineraria* trees found in the region. Bisnoi teachings proclaim : "If one has to lose head (life) for saving a tree, know that the bargain is inexpensive"). Humanity faces exceptional challenge of eroding natural resources and declining ecosystems services due to a multitude of threats created by unprecedented growth and consumerism. Also imperiled is the biodiversity and sustainability of the essential ecological processes and life support systems (Chapin et al., 2000) in human dominated ecosystems across scales (Vitousek et al., 1997). Indeed, human-domination of earth is evident in global change (Ayensu et al., 1999; Lawton et al., 2001; Phillips et al., 1998; Forest et al., 2002), biodiversity extinctions (Bawa and Dayanandan 1997; Sala et al., 2000; Singh, 2002) and disruption of ecosystem functions (Loreau et al., 2001). Ecological problems coupled with unequal access to resources results in human ill-being and threats to the livelihood security of the world's poorest (Balvanera et al., 2001).

Balance exists between ecological processes and human activities such that human activities reinforce ecological health and vice-versa. The people who are

dependent on the ecosystem have a key role in setting priorities and in project implementation.

About half of the world's tropical reserve forests are experiencing an alarming erosion of biodiversity, including some in the Indian terrain. In India, researchers from four Bangalore-based bodies Ashoka Trust for Research in Ecology and the Environment (ATREE), Wildlife Conservation Society, Institute of Science and Indian Institute of Science participated in the analysis. Besides Nature Conservation Foundation, Mysore; Wildlife Institute of India, Dehradun; World Wide Fund for Nature (WWF), New Delhi; Pondicherry University, Pondicherry; Centre for Cellular and Molecular Biology, Hyderabad and Vesta B in Thane, Maharashtra also contributed to the global study. according to the global analysis. "The strongest predictors of declining reserve health, as outlined by the analysis, were habitat disruption, hunting and forest-product exploitation. Environmental changes immediately outside reserves also seemed to determine their ecological fate. Changes inside the reserve forests were a reflection of those occurring around them. These findings suggest that tropical protected areas are often intimately linked ecologically to their surrounding habitats, and that a failure to stem broad-scale loss and degradation of such habitats could sharply increase the likelihood of serious biodiversity declines" (Laurance, 2012). But these are traditional, old-fashioned approaches and an ordinary people should get the knowledge from the source with which he or she is familiar or used to. Currently, most educational interventions regarding biodiversity aim at enhancing ecological knowledge and fostering appreciation of biodiversity e.g. by means of nature experience, however (e.g. Lindemann-Matthies, 2002; Bögeholz et al., 2006).

3. Results

This paper is mainly focusing on the two main issues i.e. first one is Traditional knowledge and second issue is Innovative knowledge in biodiversity conservation. Educational uses of Information and Communication Technology (ICT) has its own importance and can not be neglected as it is the part and parcel of the lives of human beings. Modern economy is dependent on innovations, and schools colleges as part of societies ought to use and promote innovations, whenever it is also educationally valuable. The Internet, World Wide Web (WWW) and Global Internet System (GIS) are examples of such innovations, and have plenty to offer to Biodiversity Education to conserve, monitor and promote biodiversity. If we include Internet, World Wide Web (WWW) along with other media such as Television, radio, periodicals and newspapers, will have practically connected the whole of humankind. The whole of humankind can learn to conserve and promote biodiversity. A more presently -oriented innovative approach is use of the WAP Browser technology as part of Mobile phones. Technology has improved so rapidly that mobile phones today facilitate the integration of small WAP Browsers. In 2-5 years this will be much more efficient and applicable anywhere.

This could become an interesting area for future “public biodiversity monitoring” (for instance: monitoring of biodiversity). Modern mobile technology can be used also in nature to give young and adult people an understanding of biodiversity and we should make the use of technology to save the biodiversity to circulate the traditional knowledge among the people i.e. environmental ethics and simple maps where observations can be charted via Mobile computing. It is appreciable to implement GIS and modern mobile phones with digital cameras in promoting biodiversity education. Many educational networks or nature-oriented networks exist (as part of the formal or informal education sector for youth and adults) which relate their activities to “biodiversity” in one way or the other. These networks should become more aware about “Biodiversity” as a topic. Some networks are linked to biodiversity and nature and impart clearly scientifically driven knowledge. Some examples include : NatureGate and Jouko Rikkinen’s Virtual Flora, both at University of Helsinki; Young Reporters for the Environment www.youngreporters.org/; ENO www.joensuu.fi/eno/; The GLOBE Network www.globe.gov/; The regional event-observations presented by Natur detektive; www.naturdetektive.de/2006/dyn/1876.php; The European School Net www.eun.org. <http://www.pwrc.usgs.gov/blitz/>; Global environmental Unit A WAP Browser. Global Internet System (GIS) is a practical tool, and is becoming very important also in Biodiversity Education and we cannot ignore the potential importance for biodiversity education. With respect to WAP technology, I can mention the interesting development of Artportalen in Sweden <http://artportalen.se/default.asp> on mapping, and the work of ETI biodiversity centre <http://www.eti.uva.nl/> on species identification with WAP technology in mobile phones. From this perspective, environmental knowledge as well as offering opportunities for value building by traditional and innovative methods and nature experience need to be integrated into a wider framework of development of eco-friendly orientation of a human beings and decision-making in real world situations.

4. Discussion

The topic is fairly broad and has many facets. This is a difficult task in real life. Undoubtedly young and adult people should have a vision and mission for biodiversity conservation. Biodiversity “needs a face” and “biodiversity conservation is a national mission”. The most unique feature of Earth is the existence of life, and the most extraordinary feature of life is its diversity. Approximately 9 million types of plants, animals, protists and fungi inhabit the Earth. So, too, do 7 billion people. Two decades ago, at the first Earth Summit, the vast majority of the world’s nations declared that human actions were dismantling the Earth’s ecosystems, eliminating genes, species and biological traits at an alarming rate. This observation led to the question of how such loss of biological diversity will alter the functioning of ecosystems and their ability to provide society

with the goods and services needed to prosper. Environmental crisis is in reality the crisis of ethics. We are over-exploiting our rights and failing in fulfilling or performing our duties towards the environment. Nature has provided us with all the resources for leading a beautiful life. She nourishes us like a mother, we should respect and nurture her. All the above issues are subject matter of state policy of any country where ethics in pure subject is matter of individual level of understanding. However with social compulsions unethical acts can be minimized. We can start measuring the status of a society by the percentage the people of ethical values and courage in order to mount social compulsion for checking unethical acts. We can enlist possible hide outs of unethical acts. The distribution of the resources of the world should be egalitarian as far as possible. All men are equal. For all there should be equal opportunities to compete for the comforts and riches of the world. The 'rights' of the environment and natural resources should take precedence over the right of individuals as they are linked to the welfare of the entire biosphere. The conservation of genetic diversity, both as a matter of insurance and as an investment necessary to sustain and improve agriculture, forestry and fisheries production; to keep future option open, as a buffer against harmful environmental changes, and as the new materials for scientific and industrial innovation and a matter of moral principle. Many of the world's ecosystems have undergone significant degradation with negative impacts on biological diversity and peoples' livelihoods. 'Ecological restoration' can provide enhanced biodiversity outcomes as well as improve human well-being in degraded landscapes. In this way ecological restoration becomes a fundamental element of ecosystem management that many people now depend on what have become degraded ecosystems to sustain their livelihoods, ecological restoration needs to address four elements i.e., Improve biodiversity conservation; Improve human livelihoods; Empower local people and Improve ecosystem productivity. These elements are critical to successful ecosystem management. This means ecological restoration can be a primary component of conservation and sustainable development programmes throughout the world. What makes ecological restoration uniquely valuable is its inherent capacity to provide people with the opportunity not only to repair ecological damage, but also to improve the human condition. The conservation benefits of restoration are obvious. What is less apparent, but which is at least as important, is that in many instances, ecological restoration has also been able to renew economic opportunities, rejuvenate traditional cultural practices and refocus the aspirations of local communities (Gann, and Lamb, 2006). Millions of years of evolution have created a wealth of structures and mechanisms at the molecular, cellular and macro-structure level, all of which function economically and interact, to perfection. Nature provides solutions to most of life's technical problems. 'Natural selection' has imposed on living organisms the 'Min-Max Principle' i.e., a minimum of material and energy accomplishes a maximum of efficiency and stability. This makes biological

prototypes particularly important for our future given the world's resources and a solution to increasing environmental problems. Protection and preservation of the air, soil, water, Biodiversity i.e., human beings flora & fauna and other important constituents of ecosystem has become essential for the existence of human-kind. Two key characteristics of these systems are that the unit of nature is often defined in terms of a local ecosystem. In a ecosystem abiotic components, plants, animals, and humans are considered to be interlinked, interdependent and interrelated. Many local knowledge systems are similar in temperament to the emerging scientific view of ecosystems as unpredictable and uncontrollable, and of ecosystem processes as nonlinear, multi-equilibrium. Exploitation of the natural resources by humankind at a greater rate does not allow normal regeneration under natural environmental conditions; this leads to the rate of degenerative process greater than the degenerative capacity of the earth global ecosystem (Garg and Garg, 2015). To avert the threats, natural and social sciences have helped by acquiring and applying knowledge about ecosystem conservation and restoration and by strengthening the policy and practice of sustainable development. Scientific research on human-environmental interactions is now a budding sustainability science (Kates et al., 2001). The concept recognizes that the well-being of human society is closely related to the well-being of natural ecosystems. The intellectual resources on which the sustainability science is building on need to take into account the knowledge of local people as well. We need, therefore, to foster a sustainability science that draws on the collective intellectual resources of both formal sciences, and local knowledge systems of knowledge i.e., ethno science. Driven by the situation scientific research on human-environmental interactions has developed into the new branch of knowledge known as the Sustainability Science (Kates et al., 2001). The concept has developed on the basis of the recognition that the well-being of human society is closely related to the well-being of natural ecosystems. Sustainability science seeks to comprehend the fundamental character of interactions between nature and society, specifically the interaction of global processes with the ecological and social characteristics of particular places and sectors (Kates, 2002; 2005).

There are numerous examples of medicinal plant cultivation by local people in India. Socio-culturally valued species find place in home gardens and courtyards. For example Similarly, in spite of the modernization, traditional ecological ethos continue to survive in many other local societies, although often in reduced forms. We need environmental and cultural revolution, aiming at the reconciliation of human society with nature (Naveh, 1995). There are many possibilities of integration of science and ethno science. Traditional knowledge in the form of values may indeed complement scientific knowledge by providing practical experience in living within ecosystems and responding to ecosystem change. The language of traditional ecological is different from the scientific and generally includes metaphorical imagery and spiritual expression, signifying

differences in context, motive, and conceptual underpinnings. In the Twenty First century humankind is claiming for Environmental Biotechnology and the Ecogenomics. Ecogenomics is the application of molecular techniques to ecological and environmental science. It defines the biodiversity at the D.N.A. level (genetical) and uses this knowledge to quantify the functions and interactions of organisms at an ecosystem level and relate these to ecological and evolutionary processes. Biotechnology also has a role to play in environmental management and aims at improved production technology with minimum wastes; waste recycling; development of bio-resources; conservation of biodiversity; micro-organismic manipulation of pollutants; reclaim action of contaminated habitats; development of environmental friendly techniques; discovery of non-conventional alternative sources of energy; maximum use of alternative non-conventional sources of energy i.e., wind power, solar energy etc. Research reveals that there are several areas which require the attention of planners and programme implementers. policy decisions based on research findings are rooted in ground reality and therefore have the capacity to bring about tangible improvement in the situation.

5. Conclusion

The Biosphere of the living Earth is composed of the Lithosphere, the hydrosphere and the atmosphere. To maintain the sustainability of biodiversity on the planet earth, we ought to concern the holistic approach towards the environment conservation and sustainable development. Collective wisdom of humanity for conservation of biodiversity, embodied both in formal science as well as local systems of knowledge, therefore, is the key to pursue our progress towards sustainability. It is not very tough to make the people aware of the Environmental knowledge that we have gathered so far but real challenge is to develop ethics. It is very clear that we lack more in ethics than in knowledge environmental education, thus must consist of both knowledge and ethic. Ethics are necessary in order to ensure desired practice in all human being of all ranks .For this an equilibrium is to be established among Formal education, inspirational education, Fear less education, penology. The overall purpose of environmental education is to develop a person in order to follow, inspire others to follow, influence other to follow and prevent others from violating the law designed for protection of our environment. At all environmental literacy should be ensured to all human beings for their active participation in day to day happening, scientific developments and its consequences, formation of environmental law etc. In order to make each of us accountable for present growth of human beings. Development at the cost of environment can take place only up to a point. Beyond that it would be like foolish man in the story who was cutting the very branch on which he sat. There is a need of holistic understanding of the relationship between the environment and the development processes taking place in the world. It has become the need of the hour to expand and evolve approaches to twenty-first century to phytobiodiversity

conservation and to strictly follow the “global-environmental ecosystem approach Implementation” (Garg, 2015; Garg, 2017; Garg and Garg, 2015; Gupta and Garg, 2017). In the future, it may be that biodiversity can be also be maintained and even promoted if the public learns the best theories and practices (Traditional and Innovatives Practices) of what to do and what not to do. Information and Communication (ICT) system along with its components is able to creates knowledge for protecting, monitoring and promoting biodiversity.

References

- Ayensu, E. et al., “International ecosystem assessment”, *Science*, 286, 1999, 685-686.
- Balvanera, P. et al., “Conserving biodiversity and ecosystem services”, *Science*, 291, 2001, 2047.
- Bawa, K. S. and Dayanandan, S., “Socioeconomic factors and tropical deforestation”, *Nature*, 386, 1997, 562-563.
- Bögeholz, S., Bittner, A. & Knolle, F., “Nationalpark Harz als Bildungsort - Vom Naturerleben zur Bildung für nachhaltige Entwicklung”, *GAIA*, 15(2), 2006, 135-143.
- Cardinale, B. J., Duffy, J. E., Gonzalez A, et al., “Biodiversity loss and its impact on humanity”, *Nature*, 486, 2012, 59-67
- Convention on Biological Diversity, *Convention on Biological Diversity*, Montreal, Canada : Secretariat of the Convention on Biological Diversity, 1992.
- Chapin F. S. III, Zavaleta, E. S., Eviner, V. T., Naylor, R. L., Vitousek, P. M., Reynolds, H. L., Hooper, D. U., Lavorel, S., Sala, O. E., Hobbie, S. E., Mack, M. C. and Diaz, S., “Consequences of changing biodiversity”, *Nature*, 405, 2000, 234-42.
- Forest, C. E., Stone, P. H., Sokolov, A. P., Allen, M. R., and Webster, M. D., “Quantifying uncertainties in climate system properties with the use of recent climate observations”, *Science*, 295, 2002, 113-117.
- Gann, G. D. & D. Lamb (eds.), *Ecological restoration: A mean of conserving biodiversity and sustaining livelihoods (version 1.1)*, USA and IUCN, Gland, Switzerland : Society for Ecological Restoration International, Tucson, Arizona, 2006.
- Garg, J., “Global Environmental Challenges: Emerging Issues for the 21st Century”, *Proceeding International Seminar 19-20 December 2015*, Our Environment -Yesterday, Today and Tomorrow org. Paryavarn Mitra Samity in association with U.P. Pollution Control Board, Moradabad, 2015, 157- 160.
- Garg J., “Environmental Ethic : In Perspective of Biodiversity Conservevation and Human Welfare”, *The Journal of the Meerut University History Alumani (MUHA)*, XXIX, 2017, 126 - 131.
- Garg I. and J. Garg, “Biodiversity Conservation’ Sustainable Development and human health : Today and Tomorrow”, *Proceeding International Seminar 19-20 December 2015*, Our Environment -Yesterday, Today and Tomorrow org. Paryavarn Mitra Samity in association with U.P. Pollution Control Board, Moradabad, 2015, 217- 219.

- Garg, J. and S. Gupta, "Biodiversity Conservation and Threats : in the Perspective of 21st Century", *The Journal of the Meerut University History Alumni* (ISSN 0973-5577), XXCVIII, 2016, 199 -207.
- Kate, K. T., (2002). Science and the Convention on Biological Diversity. *Science* 295: 2371-2372.
- Kates, R. W., Clark, W. C., Corell, R., Hall, J. M., Jaeger, C. C., Lowe, I., McCarthy, J. J., Schellnhuber, H. J., Bolin, B., Dickson, N. M., Faucheux, S., Gallopin, G. C., Grubler, A., Huntley, B., Jager, J., Jodha, N. S., Kasperson, R. E., Mabogunje, A., Matson, P., Mooney, H., Moore III, B., O'Riordan, T., Svedlin, U., "Sustainability Science", *Science*, 292, 2001, 641-642.
- Kates, R., Parris, T. and Leiserowitz, A., "What is Sustainable Development?", *Environment*, 47(3), 2005, 8-21 (Retrieved on : April 2009).
- Laurance, W. F. et al. "Averting biodiversity collapse in tropical forest protected areas", *Nature*, doi : 10.1038/nature11318, 2012.
- Lawton, R. O., U. S. Nair, R. A. Pielke, and R. M. Welch, "Climatic impact of tropical lowland deforestation on nearby montane cloud forests", *Science*, 294, 2001, 584 - 587.
- Lindemann-Matthies P., "The influence of an educational program on children's perception of biodiversity", *The Journal of Environmental Education*, 33, 2002, 22-31.
- Loreau, M. et al., "Biodiversity and ecosystem functioning: Current knowledge and future challenges", *Science*, 294, 2001, 804-808.
- Phillips, O. L. et al., "Changes in the carbon balance of tropical forests: evidence from long-term plots", *Science*, 282, 1998, 439-442.
- Sala, O. E. et al., "Global biodiversity scenarios for the year 2100", *Science*, 287, 2000, 1770-1774.
- Sangita Gupta and J. Garg, "Government policies Pertaining to woman Welfare: Suggestions for effective and Practical Implementations", *The Journal of the Meerut University History Alumni* (ISSN 0973-5577), XXCVIII, 2016, 160 - 167.
- Singh, J. S., "The biodiversity crisis: A multifaceted review", *Current Science*, 82(6), 2002, 638 -647.
- Vitousek, P. M., Reynolds, H. L., Hooper, D. U., Lavorel, S., Sala, O. E., Hobbie, S. E., Mack, M. C. and Diaz, S., "Consequences of changing biodiversity", *Nature*, 405, 2000, 234-42.
- Wilson, E. O. (ed.), *Biodiversity*, Washington D.C. USA : National Academy Press, 1988 (1993)

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Influence of Gender Differences on Online Buying Behaviour of College Going Students for Apparel Products

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The present investigation was undertaken to study the online buying behaviour of college students for apparel products. The study was conducted in three different colleges of Ludhiana city. A sample size of 180 respondents comprising of ninety boys and ninety girls were purposively selected. A self structured questionnaire was used for collecting data regarding their online shopping experiences and buying behaviour. The results of the investigation were interpreted using simple percentages, mean scores and rankings. Z-test was used to study the significance of variance. Based on the results of the collected data, the most preferred apparel product for online shopping was footwear by the male and female respondents. Significant difference was observed for male and female respondents regarding amount of money spend on single purchase and brand preference. Male respondents tend to spend more amount of money for online buying than female respondents. Majority of female respondents discuss with their friends and family after receiving the product as compared to male respondents. Not much difference was found among males and females for the preference of cash on delivery mode of payment and the most preferred feature regarding online shopping site was privacy and security for all the respondents irrespective of their gender.

[Keywords : Gender differences, Online buying behaviour, College going students, Apparel products]

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1. Introduction

Apparel is a highly symbolic product category due to its high visibility. Individuals will often make assumptions about a person's self-concept simply on the basis of his/her clothing. The symbolic nature of clothing as a visual expression of self-concept can incorporate various clothing styles, brands, retailer outlets and memberships in particular subcultures (Rabolt et al., 1999). College students as a young consumer group have gained significant importance from marketers in recent years because of their growing purchasing power. They have easy access to credit card and income from part-time jobs to spend. Students tend to spend money on clothing and beauty products, and find these items to be important. From the past few years, on-line shopping is the prevalent way of doing dealings in the field of e-business and is unquestionably going to be the future of shopping in the human race.

With the increasing internet literacy, the prospect of online marketing is increasing in India. Alternative names of online shopping are: e-shop, e-store, internet shop, web-shop, web-store, online store, online storefront and virtual store. Retail success is no longer all about physical stores. This is evident because of the increase in the retailers now offering online store interfaces for consumers. Companies analyze various factors before using effective marketing strategies to convert potential customers into active ones. People, who have internet experiences, can search and find information quickly and most of the people do not have time to go shopping and they try to purchase the items of their needs over the internet and for these people variety and quickness of internet shopping are valuable characteristics (Järveläinen, 2007).

2. Methodology

The present study was conducted in Ludhiana city to study the online buying behaviour of college students. One hundred and eighty respondents were selected purposively from three colleges. Descriptive research was carried out for meeting the objectives of study. The study was carried out to explore difference between online buying behaviour of male and female students.

Population for study consisted of all the persons who had online shopping experience. For the purpose of the study, the sample size was 180, which included 90 male students and 90 female students selected from three co-educational colleges. These categories were selected assuming that usually college students are more curious and engaged in online shopping. Data was collected based on convenience and judgment. An interview schedule was framed that contained questions regarding the online shopping experience and buying behaviour of students. The data collected was analyzed using small percentages, ranks and Z-test for significance of variance.

3. Results and Discussion

The results obtained from the present investigation are discussed below :

Table-1 : Distribution of respondents on the basis of internet usage frequency (n=180)

| Usage frequency | Frequency | | Z-value |
|----------------------|------------|------------|---------|
| | Male | Female | |
| Daily | 75 (83.33) | 82 (91.11) | 1.56 |
| Once a week | 2 (2.22) | 4 (4.44) | 0.83 |
| Several times a week | 10 (11.11) | 4 (4.44) | 1.67 |
| Occasionally | 3 (3.33) | — | 1.74 |

The above table depicts the internet usage frequency by the respondents. It is clear from the table that majority (83.33 percent males and 91.11percent females) of the respondents irrespective of gender used internet daily and about 11.11 percent of male respondents used internet several times a week. Only 4.4 percent of female respondents used internet once a week and another 4.4 percent used it several times a week. There were only 2.22 percent of male respondents who used internet once a week and 3.33 percent of them occasionally used internet. The Z-value was low at 5% level of significance which shows that there was no significant difference in usage of internet on the basis of gender.

Table-2 : Distributions of respondents on basis of usage of the internet for online buying (n=180)

| Use of internet for online shopping | Frequency | | Z-value |
|-------------------------------------|------------|------------|---------|
| | Male | Female | |
| Very often | 12 (13.33) | 14 (15.56) | 0.42 |
| Often | 40 (44.44) | 34 (37.77) | 0.75 |
| Occasionally | 38 (42.22) | 42 (46.67) | 0.6 |

It is evident from the data presented in the table above that only 13.33 percent male respondents did online buying very often whereas 44.44 percent did it often and 42.22 percent used internet occasionally for buying products. On the other hand 46.67 percent of female respondents occasionally used internet for online shopping followed by 37.77 percent who did it often and only 15.56 percent of female respondents used internet very often for online buying. It shows that on an average majority of male students used internet often as compared to majority of female students who had used it occasionally for online buying though the difference was non-significant.

Table-3 : Distributions of respondents on the basis of usage of internet to search product information (n=180)

| Usage of internet to search product information | Frequency | | Z-value |
|---|------------|------------|---------|
| | Male | Female | |
| Very often | 19 (21.11) | 34 (37.78) | 2.45* |
| Often | 34 (37.78) | 32 (35.56) | 0.3 |
| Occasionally | 33 (36.67) | 23 (25.56) | 1.6 |
| Never | 4 (4.44) | 1 (1.11) | 1.35 |

*Significant at 5 percent level

Table-3 shows that 37.78 percent female respondents and only 21.11 percent of male respondents used internet to search product information very often with Z-value 2.45 which shows there was significant difference between male and female respondents at 5 percent level of significance. Whereas the difference is non-significant in case where the product information is searched online often, occasionally and never by both the genders.

Table-4 : Preference of respondents for various products available for online buying (n=180)

| Products | Male | | | Female | | |
|--------------------|------|------|------|--------|------|------|
| | Sum | WMS | Rank | Sum | WMS | Rank |
| Books/CD's | 382 | 4.24 | VII | 405 | 4.5 | VIII |
| Cosmetics | 162 | 1.8 | X | 568 | 6.31 | III |
| Clothes | 773 | 8.59 | I | 791 | 8.79 | I |
| Gift Items | 404 | 4.49 | VI | 468 | 5.2 | VI |
| Toys | 255 | 2.83 | IX | 282 | 3.13 | X |
| Accessories | 579 | 6.43 | III | 607 | 6.74 | II |
| Movie Tickets | 563 | 6.26 | IV | 426 | 4.73 | VII |
| Computer Products | 543 | 6.03 | V | 342 | 3.8 | IX |
| Electronic Gadgets | 629 | 6.99 | II | 536 | 5.96 | IV |
| Household Items | 363 | 4.03 | VIII | 481 | 5.34 | V |

Preference of respondents for various products available for online buying is presented in the table above. It can be seen that clothes were most preferred by both male and female respondents as it has highest weighted mean score of 8.59 and 8.79 respectively and was ranked first. After clothes male respondents preferred electronic gadgets and accessories while on the other hand accessories were the second most preferred products purchased by female respondents followed by cosmetics at third rank. Cosmetics were least preferred by male respondents with weighted mean score 1.8. Whereas in case of female respondents

toys were given least preference with weighted mean score 3.13. This shows that college going students usually buy clothes from internet irrespective of gender. The results are in line with a previous study conducted by Gautum (2013) who found that routine internet shoppers more often tend to purchase apparel.

Table- 5 : Preference of respondents for various apparel products available for online buying (n=180)

| Apparel Products | Male (n = 90) | | | Female (n = 90) | | |
|------------------|---------------|------|------|-----------------|------|------|
| | Sum | WMS | Rank | Sum | WMS | Rank |
| Western Clothes | 553 | 6.14 | III | 573 | 6.37 | II |
| Ethnic Clothes | 348 | 3.87 | VI | 392 | 4.36 | VII |
| Sports Wear | 581 | 6.46 | II | 402 | 4.47 | VI |
| Footwear | 666 | 7.4 | I | 595 | 6.61 | I |
| Watches | 467 | 5.19 | IV | 463 | 5.14 | IV |
| Bags and Luggage | 305 | 3.39 | VII | 506 | 5.62 | III |
| Eye Wear | 296 | 3.29 | VIII | 291 | 3.23 | VIII |
| Accessories | 359 | 3.99 | V | 453 | 5.03 | V |
| Jewellery | 119 | 1.32 | IX | 276 | 3.07 | IX |

Preference of respondents for various apparel products available for online buying is furnished in Table-5. It can be seen that footwear were most preferred by both male and female respondents as it has highest weighted mean score i.e. 7.4 and 6.61 respectively and was ranked first. After footwear male respondents gave second rank to sportswear and third to western clothes. On other hand western clothes were the second most preferred apparel products purchased by female respondents followed by bags and luggage. Both male and female respondents preferred to buy watches which are at fourth rank (weighted mean score 5.19 and 5.14 respectively) followed by accessories which were preferred at rank fifth by both male and female respondent. Jewellery was least preferred by both male and female respondents with weighted mean score of 1.32 (male) and 3.07(female) and was ranked tenth. This shows that college going students mostly buy footwear and clothes from internet irrespective of gender.

Table-6 specifies the amount spent by respondents on single purchase on next page. It shows that majority (45.56 percent) of male respondents spent Rs 1900 and above on single purchase whereas only 30 percent of female respondents spent between Rs. 1900 and above on single purchase with Z-value (2.15) significant at 5 percent level of significance. There were only 11.11 percent of male respondents who spent Rs. 100-1000 on single purchase whereas 34.44 percent of female respondents spent between Rs. 100-1000 on single purchase, high Z-value at 3.73 shows that there was significant difference between male and female respondents

regarding amount spent on single purchase. But 43.33 percent of male and 35.56 percent of female respondents spent Rs. 1000-1900 on single purchase and showed no significant difference here.

Table-6 : Distribution of respondents regarding amount spent on single purchase (n=180)

| Money spend on single purchase (Rs.) | Frequency | | Z-value |
|--------------------------------------|------------|------------|---------|
| | Male | Female | |
| 100-1000 | 10 (11.11) | 31 (34.44) | 3.73* |
| 1000-1900 | 39 (43.33) | 32 (35.56) | 1.06 |
| 1900 and above | 41 (45.56) | 27 (30.00) | 2.15* |

Table-7 : Distribution of respondents on the basis of annual frequency of online shopping (n=180)

| Annual frequency of online purchases | Frequency | | Z-value |
|--------------------------------------|------------|------------|---------|
| | Male | Female | |
| At least once | 18 (20) | 29 (32.22) | 1.86 |
| 1 to 3 times | 35 (38.89) | 36 (40) | 0.15 |
| More than 3 times | 37 (41.11) | 25 (27.78) | 1.88 |

The above table reveals the that maximum male respondents did online shopping more than 3 times a year (41.11 percent) and only 20 percent of them did it once a year. On the other hand only 27.78 percent of female respondents did online shopping more than 3 times a year and majority of them (40 percent) did it 1 to 3 times annually. The Z-value revealed that there was no significance difference on basis of gender for annual shopping frequency. Contrary to it, Zhang et al (2007) found that male and female shoppers differed significantly with respect to purchase frequency.

Table-8 : Preference of respondents for different type of brands available for online buying (n=180)

| Brands | Frequency | | Z-value |
|-------------------------------|------------|------------|---------|
| | Male | Female | |
| Indian | 11 (12.22) | 9 (10.00) | 0.47 |
| International | 24 (26.67) | 12 (13.33) | 2.23* |
| Both Indian and International | 55 (61.11) | 69 (76.67) | 2.25* |

*Significant at 5 percent level

Table-8 shows the preference of respondents for different types of brands which are available for buying online. It can be seen that maximum number of respondents i.e. 61.11 percent of males and 76.67 percent of females preferred both Indian and international brands but Z-value (2.25) was significant at 5 percent level of significance. This shows that there was significant difference between male and female responses as more females had shown preference for both national and international brands as compared to male respondents. Whereas only 12.22 percent of male and 10 percent of female respondents preferred only Indian brands and there was no significant difference between the two genders here.

Table-9 : Distribution of respondents on the basis of indicators used while purchasing online for apparel products (n=180)

| Indicators for purchase | Frequency | | Z-value |
|----------------------------------|------------|------------|---------|
| | Male | Female | |
| Best price | 37 (41.11) | 36 (40.00) | 0.15 |
| Convenience and time saving | 25 (27.78) | 11 (12.22) | 2.6* |
| Non-availability in local stores | 10 (11.11) | 15 (16.67) | 1.07 |
| Price comparison available | 17 (18.89) | 23 (25.56) | 1.07 |
| Product reviews available | 1 (1.11) | 5 (5.56) | 1.66 |

*Significant at 5 percent level

It is clear from the table-9 that maximum number (41.11 percent of male and 40 percent of female) respondents used best price as an indicator while purchasing online apparel products. Whereas 27.78 percent of male respondents and only 12.22 percent of female respondents purchase online apparel products because of the convenience and time saving and Z-value (2.6) was significant at 5 percent level. This shows that there was a significant difference in gender for this indicator. Similarly Seock and Bailey (2008) from their study examined factors associated with the online shopping orientation of college students based on gender and found that male college students exhibited higher convenience/time consciousness than did participating female college students.

Table-10 : Distribution of respondents on the basis of post purchase behaviour (n=180)

| Behaviour after receiving product | Frequency | | Z-value |
|-----------------------------------|------------|------------|---------|
| | Male | Female | |
| Discuss with friends/family | 71 (78.89) | 82 (91.11) | 2.29* |
| Write review about product | 15 (16.67) | 4 (4.44) | 2.67* |
| Contact seller for guidance | 4 (4.44) | 4 (4.44) | — |
| Any other | 0 | 0 | — |

*Significant at 5 percent level

Table-10 on the preceding page reveals that there was significant difference between male and female respondents regarding post purchase behaviour. Majority (91.11percent) of the female respondents discussed with their friends and family after receiving the product whereas only 78.89 percent of male respondents discussed with their family/friends and the Z-value was high at significance level so there was significant difference between male and female students. The study also found that male respondents outnumbered female respondents for writing review (16.67 percent of males and only 4.44 percent of females) about product on online sites. Z-value (2.67) for it was significant at 5 percent level which shows male respondents are more interested in writing review about product than the female respondents. It was also found that 4.44 percent of both male and female respondents contact seller for guidance and here there was no significant difference between male and female respondents. It can be concluded that after purchasing the product from online store college going students usually discuss with friends and family.

Table-11 : Distribution of respondents on the basis of main barriers perceived during online purchases (n=180)

| Main Barriers | Frequency | | Z-value |
|---------------------|------------|------------|---------|
| | Male | Female | |
| Risk of payment | 16 (17.78) | 9 (10) | 1.5 |
| Low trust level | 19 (21.11) | 27 (30) | 1.3 |
| Value added tax | 6 (6.67) | 9 (10) | 0.8 |
| High shipping cost | 21 (23.33) | 24 (26.67) | 0.51 |
| Refund policy | 8 (8.89) | 10 (11.11) | 0.49 |
| Warranty and claims | 18 (20) | 11 (12.22) | 1.41 |
| Other reason | 2 (2.22) | 0 (0) | 1.42 |

It is evident from the table above that maximum number i.e. 30 percent female respondents said that low trust level was the main barrier which affects frequent online purchases followed by 26.67 percent of them for whom high shipping cost was the main barrier. On the other hand 23.33 percent of male respondents found high shipping cost as main barrier followed by 21.11 percent of them who found low trust on online sites as main barrier that affects frequent online buying. It can be seen that 20 percent of males and 12.22 percent of female respondents found warranty and claims which is usually not given by all e-retailers as the barrier of e-shopping. Risk of payment was the barrier for 17.78 percent of male respondents and 10 percent of female respondents which affects their frequent online purchases. Xu and Paulins (2006) when explored the attitudes of college students toward online shopping for apparel products also

indicated that more than half of the respondents mentioned credit card security and return policy as major concerns.

Table-12 : Preferences of respondents for various features offered by online shopping sites (n=180)

| Apparel Products | Male (n = 90) | | | Female (n = 90) | | |
|-------------------------------|---------------|------|------|-----------------|------|------|
| | Sum | WMS | Rank | Sum | WMS | Rank |
| Multiple payment gateways | 296 | 3.29 | III | 303 | 3.37 | III |
| Social networking integration | 283 | 3.14 | IV | 284 | 3.16 | V |
| Credibility | 296 | 3.29 | III | 230 | 2.56 | VI |
| Privacy and security | 428 | 4.76 | I | 418 | 4.64 | I |
| Checkout design | 233 | 2.59 | V | 298 | 3.31 | IV |
| Customer friendly | 345 | 3.83 | II | 357 | 3.97 | II |

Preferences of respondents for various features offered by online shopping sites are presented in Table-12. It shows that privacy and security were most preferred feature of online shopping sites for both male and female respondents as it has highest weighted mean score i.e. 4.76 and 4.64 respectively and was ranked first. Nazir et al (2012) also found that people got petrified when their personal and account details are asked during online shopping.

Both male and female student’s preferred online sites to be customer friendly which are at second rank (weighted mean score of 3.83 and 3.97 respectively). Third most preferred feature was credibility as well as multiple payment gateways for male respondents followed by integration with other social networks at fourth rank. On the other hand female respondents preferred multiple payment gateways at third rank followed by checkout design at fourth place. The results reveal that privacy and security is the main feature of online shopping sites that both male and female college students keep in mind while shopping online.

Table-13 : Distribution of respondents on the basis of preference for the mode of payment during online shopping (n=180)

| Mode of payment | Frequency | | Z-value |
|------------------|------------|------------|---------|
| | Male | Female | |
| Credit card | 16 (17.78) | 12 (13.33) | 0.82 |
| Personal cheque | 1 (1.11) | — | 1 |
| Cash on delivery | 58 (64.44) | 73 (81.11) | 2.51* |
| Debit card | 9 (10.00) | 4 (4.44) | 1.44 |
| Online banking | 6 (6.67) | 1 (1.11) | 1.92 |

*Significant at 5 percent level

Table-13 specifies the mode of payments preferred during online shopping. It shows that maximum male and female respondents i.e. (64.44 percent and 81.11 percent respectively) preferred cash on delivery as mode of payment and the Z-value (2.51) was high at significant level, therefore, more females preferred to pay at time of delivery as compared to males. On the other hand credit cards were preferred by 17.78 of the male respondents and 13.33 percent of female respondents. So far as the use of debit cards only 10 percent of male respondents and only 4.44 percent of female respondents preferred to use them but the table also shows that only 1.11 percent of male respondents and no female respondent used personal cheque and only 1.11 percent of female respondents used online banking as mode of payment during online shopping. It can be concluded that during online shopping majority of both male and female students preferred cash on delivery as mode of payment. But here a significant difference was found among male and female students with 2.51 Z-value.

4. Conclusion

The findings of the study conclude that there is a difference between the online buying behaviour of male and female college students regarding usage of internet for searching product information, amount spend on single purchase, preference for Indian and international brands, advantage of convenience and time saving factors etc. Whereas there is no significant difference between the responses of both the genders where annual frequency of buying, preference for various products available online, mode of payment and preference for features offered by online shopping sites are concerned. College students as a young consumer group have gained significant importance from marketers in recent years because of their growing purchasing power. They have easy access to credit cards and income from part-time jobs to spend. Students tend to spend money on clothing and beauty products, and find these items to be important. Thus, it is suggested that directors of online shopping sites focus on novel fashion and brand issues for females and males, respectively. The e- retailers need to take this issue into consideration and perform improvement. This will increase the interest of the customers to make the purchases.

References

- Childers, T. L., Carr, C. L., Peck, J. and Carson S., "Hedonic and utilitarian motivations for online retail shopping behavior", *Journal of Retailing*, 77(4), 2001, 511-35.
- Dholakia, R. R. and Chiang K., "Shoppers in cyberspace: Are they from Venus or Mars and does it matter", *Journal of Consumer Psychology*, 13, 2003,171-76.
- Gautam, S., *A Study of online shopping behaviour and service quality assessment of online shopping websites : A comparison of routine and non-routine shoppers*, M.Sc. Thesis, Punjab Agricultural University, Ludhiana, Punjab, India, 2013.

- Gong, W., Maddox, L. M. and Stump, R. L., "Attitudes toward online shopping: A comparison of online consumers in China and the US", *International Journal of e-business Development*, 2(1), 2011, 28-35.
- Hernández, B., Jiménez, J. and Martín, J., "Age, gender and income: do they really moderate online shopping behavior?", *Online Information Review*, 35(1), 2011, 113-33.
- Hui, T. and Wan, D., "Factors affecting internet shopping behavior in Singapore: Gender and educational issues", *International Journal of Consumer Studies*, 31, 2007, 310-16.
- Järveläinen, J., "Online purchase intentions: An empirical testing of a multiple-theory model", *Journal Organisation of Computer E-Commerce*, 17, 2007, 53-74.
- Kwon, K. N. and Lee, J., "Concerns about payment security of internet purchases: A perspective on current on-line shoppers", *Clothing and Textile Research Journal*, 21, 2003, 174-85.
- Lim, H. and Dubinsky, A. J., "Consumers' perceptions of e-shopping characteristics: An expectancy-value approach", *Journal of Services Marketing*, 18(6), 2004, 500-13.
- McKinney, L. N., "Internet shopping orientation segments: An exploration of differences in consumer behavior", *Family Consumer Science Research Journal*, 32, 2004, 408-33.
- Nayyar, R. and Gupta, S. L., "Determinants of internet buying behavior in India", *Asian Journal of Business Research*, 1, 2011, 53-66.
- Nazir, S., Tayyab, A., Sajid, A., Rashid, H. and Javed, I., "How online shopping is affecting consumers shopping behavior in Pakistan", *International Journal of Computer Science Issues*, 9, 2012, 486-95.
- Rabolt, Kawabata Hiroko and Nancy, J., "Comparison of clothing purchase behaviour between US and Japanese female university students", *Journal of Consumer Studies and Home Economics*, 23(4), 1999, 213-23.
- Rodgers, S. and Harris, M., "Gender and e-commerce: An exploratory study", *Journal of Advertising Research*, 43(3), 2003, 322-30.
- Seock, Y. and Bailey, L. R., "The influence of college students shopping orientations and gender differences on online information searches and purchase behaviors", *International Journal of Consumer Studies*, 32, 2008, 113-21.
- Shah, Alam S., Bakar, Z., Ismail, H. B. and Ahsan, M. N., "Young consumers online shopping: An empirical study", *Journal of Internet Business*, 5, 2008, 81-98.
- Teo, T. S. H., "Attitudes toward online shopping and the internet", *Behavior and Information Technology*, 21, 2002, 259-71.
- Xu, Y. and Paulins, V. A., "College students' attitudes toward shopping online for apparel products", *Journal of Fashion Marketing and Management*, 9, 2005, 420-33.
- Yang, C. and Wu, C., "Gender and internet consumers decision-making", *Cyber Psychology and Behavior*, 10, 2007, 86-91. ★

Impact Assessment of Advertisements on Consumers' Buying Behaviour

Bhawana Asnani*

The present study was done on 30 women respondents of various areas of Amreli district of Gujarat state. Survey cum interview schedule made up of close ended questions was used to collect data. Regarding impact of advertisement section, on asking to buy food products by attraction of advertisements, most respondents answered in 'NO' but children were influenced somehow with the advertisements, making their choices and imposing on parents to buy. Very few consumers see manufacturing and expiry dates, as well as label for information, regularly, as respondents were aware of ISI, FPO marks. After making questions, they came to know about standard marks and assured to see the same, while purchasing products, especially food items. All the family members, ladies, gents, children were influenced with the advertisements. Thus, it can be concluded that today's consumer watch advertisements a lot and consider those into their personal life. The purchase of various goods especially food articles depend very much on the advertisements. Sometimes, advertisements help in making consumers aware and informative, but many times leave major impression in making choices.

[**Keywords** : Advertisement, Consumer, Buying behaviour]

1. Introduction

In economic systems consumer utilities expressed in the decision to trade or not. The consumer is the one who pays to consume the good and services produced. As such consumer play a vital role in the economic system of a nation. In the absence of their effective demand the producers would lack a key motivation to produce which is to self to consumer.

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1375-1425 for earlier sense “squanderer”, 1525-35 for current senses, an individual who buys products or services for personal use and not for manufacture or resale. A consumer is someone who can be influenced by marketing and advertisement. Any time someone goes to a store and purchases a toy, shirt, beverages or anything else they are making that decision as a consumer. A person who consumes or uses different types of goods and services is called as consumer. Goods that a consumer buys may include consumable good like rice, salt, sugar, vegetable etc. or durable goods like television, bicycle etc. services that consumer may buy include electric power, telephone, transport services, theaters etc. anyone who obtain goods or services for resale or any commercial purpose (except self employment) or one who obtain any service free of charge or under a contract of personal services is not called a consumer. A consumer is a person or organization on that uses economic services or commodities.

Advertisements are messages paid for by those who send them and are intended to inform or influence people who receive them. Advertisement is a means of communication with the users of products or service. Advertisements are message paid for by those who send them and are intended to inform or influence people who receive them. The advertising industry is made of companies that advertise agencies that create the advertisements, media that carries the ads, and host, of people like copy editors, visualizers, brands, managers researcher, creative heads and designers who take it the mile to the customer or receiver. A company that needs to advertise itself and/or its products hires an agency. The company target segments and so. The agencies convert the ideas and concepts to create the visual, text, layouts and themes to communicate with the user. After approval from the client, the ads go on air, per the booking done by the agency's media buying units.

Consumer behavior is the “study of how individual customer groups/ organization select, bug, use and dispose ideas, goods, and services to satisfy their needs wants. It refers to the action of the consumer in the market place and the underlying motives for those actions”. Consumer behavior is the action and decision processes of people who purchase goods and services personal consumption. Consumer behavior is the decision process and physical activity. When evaluating, acquiring, using or disposing good and services.

2. Objectives

As regards the impact of advertisements on consumer buying behavior, it is said that advertising can create a shift in thinking by consumer, which may take different forms. For example, after viewing an advertisement, a consumer may decide that his or her usual product either seems better or worse than the one being advertised without knowing exactly why. Other effect of advertising that creates a more conscious shift in consumers though processes may be due to a strong informational aspect. Present study was done with the given below mentioned two objectives :

1. To find out the pattern of purchasing food products existed in homemaker.
2. To study the impact of advertisement on homemakers' buying behaviour.

3. Methodology

The selected sample was of 30 home makers aged 22 years to 50 years of Amreli district, Gujarat. Sample was covered from the various areas of Amreli district. Present study was done with a survey cum interview method. A questionnaire was prepared and then it was used to interview the sample chosen for the study with this, a keen observation was also done to reduce unnecessary confusion.

4. Results and Discussion

Results describe about background information of the sample that 40 per cent sample were at least 10th pass. 23 out of 30 respondents were falling into 30-40 years of age group. More than half of the sample women were housewives, not working. 80 per cent respondents were into the family of 3-5 members. 36.67 per cent ladies' family monthly income was Rs. 20,000/-.

4.1 General Knowledge of Respondents while Purchasing Food Products

While purchasing food products 90 per cent women were seeing MFG./EXP. Dates, 46.67 per cent were seeing standard marks on food products. Only 9 ladies (30%) were buying by seeing famous company products.

What standard marks respondents see generally, on asking that 50 per cent were used to see FPO mark especially while purchasing fruit products? 40 per cent ladies notice generally ISI mark on few of the food products. Only 10 per cent respondents were aware about AGMARK & only 6.67 per cent (2 respondents) have seen ECO mark in very few products.

Table-1 : Data in Frequency & Percentage regarding General knowledge of Respondents while purchasing food products N=30

| S.No. | Particulars | Frequency (F) | Percentage (%) |
|-------|---|---------------|----------------|
| 1. | What do you keep in mind while buying food products? | | |
| | (a) MFG./EXP. Date | 27 | 90 |
| | (b) Standard Mark | 14 | 46.67 |
| | (c) Famous company products | 9 | 30 |
| 2. | Which standard mark do you see while buying fruit products? | | |
| | (a) ISI | 12 | 40 |
| | (b) FPO | 15 | 50 |
| | (c) AG MARK | 3 | 10 |
| | (d) ECO MARK | 2 | 6.67 |

| | | | |
|-----|--|----|-------|
| 3. | Which standard mark do you see while buying cereals, pulses, & spices? | | |
| | (a) ISI | 9 | 30 |
| | (b) FPO | 5 | 16.67 |
| | (c) AG MARK | 15 | 50 |
| | (d) WOOL MARK | 1 | 3.34 |
| 4. | What do you keep in mind while buying cold drinks? | | |
| | (a) Alcoholic | 4 | 13.34 |
| | (b) Non-alcoholic | 22 | 73.34 |
| | (c) Famous company products | 7 | 23.34 |
| 5. | What types of food products you choose to buy? | | |
| | (a) Sugar free | 5 | 16.67 |
| | (b) Fat free | 9 | 30 |
| | (c) As per taste | 16 | 53.33 |
| 6. | When you purchase medicines, what things do you consider? | | |
| | (a) MFG./EXP. Date | 29 | 96.67 |
| | (b) Famous company | 2 | 6.67 |
| | (c) High/Low dose | 8 | 26.67 |
| 7. | Which standard mark should be there while purchase Fats/Oil? | | |
| | (a) Non veg. (RED Mark) | 1 | 3.33 |
| | (b) Veg. Mark(Green Mark) | 25 | 83.34 |
| | (c) None of the above | 4 | 13.34 |
| 8. | What types of milk be in packaged milk? | | |
| | (a) Pasteurised Milk | 23 | 76.67 |
| | (b) Raw Milk | 2 | 6.67 |
| | (c) Bacteria Free | 7 | 23.34 |
| 9. | For whom you buy health drink in family? | | |
| | (a) Children | 15 | 50 |
| | (b) Women | 6 | 20 |
| | (c) Men | 4 | 13.34 |
| 10. | Which method do you use to store the seasonal fruits juices? | | |
| | (a) Preservation | 11 | 36.67 |
| | (b) Simple method by falling bottles | 2 | 6.67 |
| | (c) Refrigeration | 12 | 40 |
| | (d) None of the above | 7 | 23.34 |

| | | | |
|-----|---|----|-------|
| 11. | What points you consider while purchasing fresh fruits from market? | | |
| | (a) Colour | 3 | 10 |
| | (b) External appearance | 3 | 10 |
| | (c) Best quality | 26 | 86.67 |

50 per cent respondents were ensured after letting them know that while buying cereals, pulses & spices they should notice AGMARK. About 30 per cent were used to see ISI (very common standard mark to beehive on product) on the cereals, pulses & spices. About FPO & Wool Mark 5 (16.67%) & 1 (3.34%) respondents were very much confused that what to see in this type of products.

73.34 per cent respondents were aware regarding the purchasing cold drinks whether to buy alcoholic drinks 13.34 per cent or non-alcoholic drinks. It is evident that 23.34 per cent respondents buy cold drinks by seeing its popularity (famous company), .

More than half respondents (53.33%) were used to buy food products as per their taste. 30 per cent respondents, noticed in the label whether the food product is fat free or not. Only 5 respondents (16.67) were seeing 'sugar free' note on the food products

While purchasing medicines, 96.67 per cent respondents always notice manufacturing as well as expiry date, to use them for a long period. Only 2 respondents (6.67%) demanded the famous company medicines for their sure cure. About 26.67 per cent respondents notice the dose (high/low) as per recommended by doctor.

Being vegetarian, maximum of respondents (83.34%) always see green mark on the fats/oils purchase. While 3.33 per cent women noticed red mark once, after that she was aware about red & green mark. 13.34 per cent respondents never see either red mark or green mark on purchase of fats & oils.

While purchasing packaged milk, 23 persons (76.67%) were aware that they should buy pasteurized milk. 23.34 per cent were aware that packed milk should be bacteria free. Only 2 respondents (6.67%) were confused that raw milk come in polythene bag is packed milk only.

50 per cent of respondents were used to buy health drinks for children only. 6 respondents amongst 30 were buying health drinks for children as well as for women. Only 4 respondents were aware that there are health drinks for children, women & men (all family members) available in market.

Only less than half respondents (11 & 12) were preserving & refrigerating seasonal fruit juices. None of the respondents did anything for keeping seasonal fruits for non-season time. Only 2 respondents were using simple method by filling juice in bottles & were consuming as soon as possible. This is because, they were against of using any chemical or preservatives.

While purchasing fresh fruits from market 86.67 per cent respondents notice about its best quality, while rest were go with their colour & appearance, because they assume that best quality fruits are not affordable within their pockets.

4.2 Impact of Advertisement on Housewives

When questioned to the sample respondents about buying food product by attraction of TV advertisement 8 persons (26.67%) answer was in 'Yes' and maximum respondents answered 'No' (73.34%).

Table-2 : Data in Frequency & Percentage regarding Impact of Advertisement on Housewives **N=30**

| S.No. | Particulars | Frequency (F) | Percentage (%) |
|-------|--|---------------|----------------|
| 1. | Do you buy food product by attraction of T.V. advertisement? | | |
| | Yes | 8 | 26.67 |
| | No | 22 | 73.34 |
| 2. | Whether the advertisements come on T.V. give all the information related to food product or not, Do you check it or not? | | |
| | Yes | 24 | 80 |
| | No | 6 | 20 |
| 3. | Information which don't come on advertisement, do you explore that specially or not? | | |
| | Yes | 22 | 73.34 |
| | No | 8 | 26.34 |
| 4. | Do you buy that food product which is advertised by famous personalities? | | |
| | Yes | 1 | 3.34 |
| | No | 29 | 96.67 |
| 5. | Do you buy packaged fruit juices, which come in advertisements on T.V.? | | |
| | Yes | 18 | 60 |
| | No | 12 | 40 |
| 6. | Do you buy health drinks, for children, women & men which come in advertisements? | | |
| | Yes | 16 | 53.34 |
| | No | 14 | 46.67 |
| 7. | Do you purchase packed cooking oil which come in advertisements on TV ? | | |
| | Yes | 13 | 43.34 |
| | No | 17 | 56.67 |
| 8. | Do you buy healthy supplementary foods which come in advertisement? | | |
| | Yes | 15 | 50 |
| | No | 15 | 50 |
| 9. | Do you buy children food products which come in advertisements? | | |
| | Yes | 14 | 46.67 |
| | No | 16 | 53.34 |

| | | | |
|-----|---|----|-------|
| 10. | Do you buy instant mix food products come in advertisement? | | |
| | Yes | 25 | 83.34 |
| | No | 5 | 16.68 |

Sample respondents were asked about all the information related to that food product or not of buying food product which come on TV shows , there was positive response of about 80 per cent respondents (24 numbers). Maximum 73.34 per cent (22 numbers) respondents definitely explore the missing information, which they needed before purchasing. Rest 8 ladies (26.67%) were never tried for the same.

On asking about impact of famous personalities on their purchasing, maximum of 29 respondents (96.67%) did not influence. 60 per cent of respondents (18 numbers) bought the packaged fruit juices, which come in advertisements, while rest 40 per cent did not.

Nearly half of the respondents (53.34%) were in habit of buying health drinks for children, women & men which they only know by advertisements. Rest were not aware about health drinks. 56.67 per cent sample women were used to buy packed or unpacked cooking oil, which ever shopkeeper gives them. On the contrary, 43.34 per cent respondents always buy packed cooking oil, which they came to know by advertisements. The answers were in YES & NO ratio was 50:50.

When questioned to the sample about buying children food products which come in advertisements 14 respondents (46.67%) answered YES and 16 person's answer (53.34%) was in NO. 83.34 per cent respondents (25 numbers out of 30) were buying those instant mix food products which come in T.V. advertisements, while remaining 5 ladies were not buying any this type of product.

5. Summary and Conclusion

Thus, it can be concluded that today's consumer watch advertisements a lot and consider those into their personal life. Somehow, the purchase of various goods especially food articles depend very much on the advertisements. Sometimes, advertisements help in making consumers aware and informative, but many times leave major impression in making choices.

References

<http://en.m.wikipedia.org/wiki/consumer>

<http://economicctimes.indiatimes.co/defintion/advertising>

<http://www.yourarticallibrary.com-marketing/market-segmentation/consumer-behaviour-meaning-definion-and-natyreof-consumer-behaviour/32301/>

<http://m.wisegeek.com/what-are-the-effect-of-advertising-on-consumers.htm>

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Optimal Task Design for Intrinsically Motivated Workers with an Incomplete Contract

Keiki Kumagae*

This paper presents analysis of the optimal task design problem for intrinsically motivated workers within a firm with an incomplete contract theory. The authors study the control problem in the context of a search for projects and the interplay between optimal task design and intrinsic motivation. Our model is based on that reported by Bao and Wang (Journal of Economics 107 81-96, 2012), where optimal organization structure is discussed. Bao and Wang (2012) report that, because workers exert maximum effort to discover a project's information to implement their favorite project, firms invariably choose integration without bargaining. The main result of this paper is the observation that when intrinsic motivation is sufficiently high, the firm might choose separation, in contrast to results reported by Bao and Wang. The higher a worker's intrinsic motivation is, the higher the probability of choosing the firm management's favorite project becomes. Consequently, although intrinsic motivation increases the firm's profit, it decreases the worker's incentive to exert effort to be informed.

[Keywords : Task design, Incomplete contract, Intrinsic motivation]

1. Introduction

In Human Resource Management, it is important for firm managers to consider not only extrinsic motivation of workers such as rewards but also their intrinsic motivation. Most firm managers actively give information about the firm

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management strategy and goals, periodically conduct interviews with workers and set specific targets for achievements to induce intrinsic motivation from workers.

The task design problem in a firm has been discussed in economics. Lewis and Sappington (1997) and Khalil, Kim and Shin (2006) examine optimal task design to assign planning and implementation tasks to agents. However, no report of the relevant literature describes exploration of how worker's intrinsic motivation affects optimal task design.

As described in this paper, we analyze an optimal task design problem for intrinsically motivated workers within a firm. Whereas a firm usually assigns tasks to workers considering the scope of authority, characteristics of their tasks, and personalities of workers, task design also changes the intrinsic motivation of workers. The worker's level of self-determination increases if much authority of tasks is assigned to one worker. Increasing the level of self-determination improves job satisfaction. The worker is intrinsically motivated for a task. Consequently, workers having a feeling of high satisfaction work for that firm more altruistically.

Our model is based on that announced by Bao and Wang (2012), who study the control problem in the context of a search for projects. The firm management must decide on the allocation of control of two divisions to two workers. The firm management decides whether to have two separate divisions and give each worker some authority (separation), or to integrate the divisions with only one worker (integration). Each worker searches for information related to projects. Workers with authority can decide which project is implemented. In each division, when one agent is informed and the other is not, the agent being informed must agree to the informed agent's preferred project. The agent having authority can choose a favorite one if both agents have information. Bao and Wang (2012) particularly demonstrate that integration is always chosen without bargaining between agents because workers exert maximum effort to seek out the project's information to implement a favorite one in two divisions.

Our work differs from works reported in the relevant literature because our work rests on the assumption that the worker is intrinsically motivated by task design and that the worker comes to exhibit altruistic behavior. A worker with integrated authority has intrinsic motivation because of high levels of self-determination. Another necessary assumption is that the motivated worker chooses not only the worker's favorite project but also the firm management's favorite with a probability indicating the extent of the intrinsic motivation.

Furthermore, we introduce the worker's screening ability for correct evaluation of the project under integration. The worker in control has a superior role to that of the worker losing control under integration. The superior worker must evaluate the project proposed by the subordinate worker. For this study, another assumption is that the superior worker might erroneously reject the project offer. The model of the screening ability relies on some observations of De

Paola and Scoppa (2006), who conducted a comparison between hierarchical and decentralized organizations in agency theory, and who assumed that projects proposed by the agent are evaluated by the principal in a hierarchical organization. The principal makes erroneous judgments and sometimes rejects profitable proposals or approves bad ones.

The main results presented herein are that when intrinsic motivation is high and screening ability is low, a firm manager might choose separation, in contrast to results reported by Bao and Wang (2012). The higher a worker's intrinsic motivation is, the higher the probability of choosing the firm management's favorite project becomes. Consequently, although intrinsic motivation increases the firm's profit, it decreases the worker's effort incentive to search. Integration presents the important benefit of inducing maximum effort, as described by Bao and Wang (2012), but such a benefit might be lost in our model.

The result presented herein suggests implications for optimal task design in a firm. Firms usually want to assign many integrated tasks to the intrinsically motivated worker because he works for the firm's profit. However, once the worker notices that using altruistic behavior yields less benefit, the worker might lose incentive to greater effort. Therefore, integration is not always optimal for a firm.

Our work is related to studies reported by Makris (2009) and Delfgaauw and Dur (2008). They too assume that the worker is intrinsically motivated and study interaction of the optimal contracts and the extent of intrinsic motivation with a complete contract. As described by Makris (2009), an agent having warm-glow altruism emotion derives utility from part of the principal's profit. In a report of a study by Delfgaauw and Dur (2008), the agent feels pleasure in his personal contribution to the firm's goal. Therefore, he derives intrinsic utility from exertion of effort. In our model, the agent does not derive utility from intrinsic motivation, but increases altruistic behavior for the firm to model the relation between the pattern of task design and intrinsic motivation.

The work described herein is also related to research reported by Lewis and Sappington (1997): the principal assigns two tasks (acquiring valuable planning information and reducing the cost of projects) to agents in the task design problem literature. They show that it is optimal for the principal to separate the planning and implementation tasks by assigning these tasks to two agents because the principal can motivate the agent to exert effort to acquire and report the planning information truthfully without information rent by separating the tasks. Lewis and Sappington (1997) rely on the assumption that the principal can use complete contracts based on the cost of projects because the cost is observable and verifiable. As described in this paper, neither the effort exerted by agents nor the payoffs from implementing projects are verifiable. For that reason, the contract is incomplete.

The organization of the paper is the following. Section 2 presents the model. Section 3 discusses benchmark cases, whereas Section 4 solves the levels of effort in equilibrium and finds the optimal task design. Section 5 concludes this paper.

2. The Model

This study is based on the model presented by Bao and Wang (2012). A principal must hire agents to implement a project. We assume that all parties are risk neutral. The principal deals with two agents: A_1 and A_2 . The principal does not seek information of projects. Each agent seeks the information. Two divisions (D_1, D_2) each have $N - 3$ projects. Each project $n \in \{1, 2, 3, \dots, N\}$ is associated with a profit B_n to the principal and a private benefit b_n^i to A_i ($i = 1, 2$). For each party, at least one project's payoff is sufficiently negative. Consequently, when agents are uninformed about the project's information, no project is implemented. No project yields 0 payoffs to each party. Each player can receive a payoff from both D_1 and D_2 .

At private cost $g(e)$, he can perfectly obtain information about the payoffs with probability e_i . We assume that $g(e)$ is increasing and strictly convex ($g'(e) > 0, g''(e) > 0$). Let e_i denote the effort selected by A_i .

The principal's favorite project, F_p , yields profit B to the principal, b to agents. The agent A_i 's favorite project, F_i , yields profit B to the principal, b to A_i , and b to A_j ($i, j \in \{1, 2\}, i \neq j$). We assume that α, β are of $(0, 1)$. All parameters are common knowledge. We also assume that two or more projects yield equal payoffs. For simplicity $B + b + b > \alpha + b + b$ is assumed, which implies that the joint payoff for all three parties cannot be improved when F_p is implemented. Information related to the project's payoff is soft information. Therefore, the informed agents cannot report their information.

The principal decides to allocate the authority to choose the project implemented in each division to agents. If the principal gives one agent authority for D_1 and another authority for D_2 , then we say that the principal has chosen task separation. If the principal gives the same agent to the authority for both divisions, then the principal has chosen task *integration* (presented in Fig. 1). In each division, when one agent has information and the other does not, the agent with no information must agree to the informed agent's preferred project. When both agents are informed, the agent having the authority can choose a favorite project.

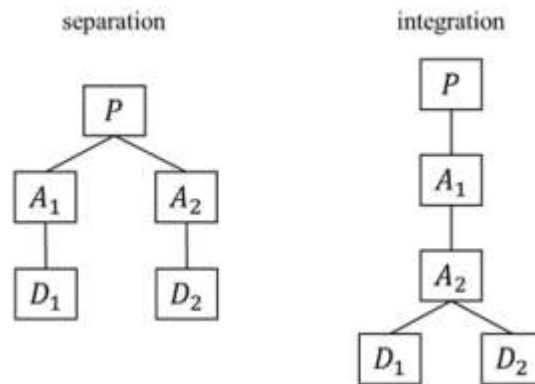


Fig. 1 : Pattern of Task Design

When the principal chooses integration, A_1 can use the discretion of the projects in two divisions. Furthermore, A_1 has responsibility for the firm or a feeling of satisfaction. Then, in our model, the agent is intrinsically motivated and displays altruistic behavior toward the firm. The informed agent then chooses F_p with probability θ ($0, 1$) and F_1 with probability $1 - \theta$. Parameter θ represents the extent of the agent's intrinsic motivation. Assume that θ is common knowledge.

By contrast, under integration, A_1 is a superior worker for A_2 . A_1 evaluates the proposed project made by A_2 . Assuming that t denotes the screening ability of A_1 . Then, A_1 approve the proposal (F_2) made by A_2 with probability t , whereas the worker erroneously rejects F_2 with probability $1 - t$. For simplicity, we assume that $1 - (1 - \theta) - t = 0$, which implies that the optimal levels of effort are the interior solution in section 4.1. We summarize the structure of this game in Fig. 2. The three values in parentheses in this figure are, respectively, the firm's payoff, A_1 's payoff, and A_2 's payoff when F_k or no project is implemented ($k \in \{1, 2, P\}$). Figure 2 is not the game tree.

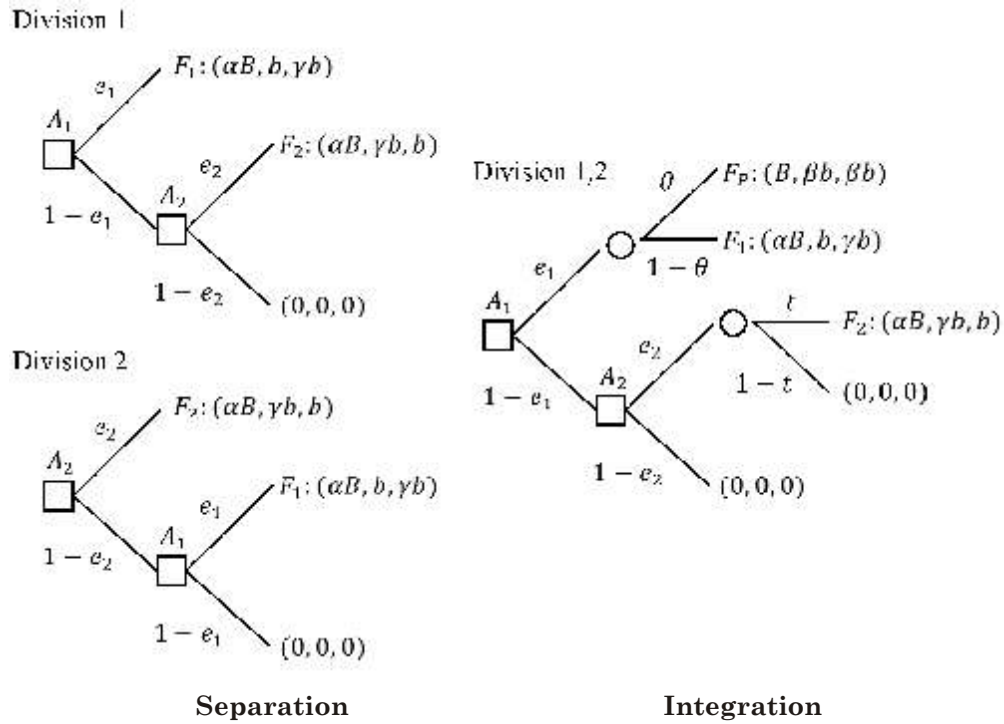


Fig. 2 : Structure of the Game in Each Task Design.

3. Benchmark Case without Asymmetric Information

As explained in this section, the principal can design contracts to ensure that her preferred project is implemented for both divisions when at least one agent obtains information with probability $1 - (1 - e_1)(1 - e_2) = e_1 + e_2 - e_1e_2$. In this case, no task design problem arises. The expected social welfare is

$$2(e_1 + e_2 - e_1e_2)(B + b + b) - g(e_1) - g(e_2).$$

Let e_1^{FB}, e_2^{FB} denote effort levels when the expected social welfare is maximized. We index the solution to this problem with a superscript FB meaning “first-best”. The first-order condition is

$$g'(e_1^{FB}) = 2(1 - e_2^{FB})(B + b + b), \quad \dots(1)$$

$$g'(e_2^{FB}) = 2(1 - e_1^{FB})(B + b + b), \quad \dots(2)$$

For simple calculation, it is apparent that their efforts are strategic substitutes. Because F_p is chosen by the principal when at least one agent is informed, the efforts of two agents are substitutes to save the sum of effort's costs.

4. Optimal Task Design

This section presents consideration of the case in which the information of projects is not verifiable and the contracts are incomplete. Letting $\frac{SP}{k}$ denote the expected payoff of player k under separation of control and letting $\frac{IN}{k}$ denote the expected payoff of player k under integration of control ($k = 1, 2, P$), we use superscripts *SP*, *IN*, respectively denoting “separation” and “integration”. The payoffs for the respective players are the following.

$$\frac{SP}{1} = \{e_1 b + (1 - e_1)e_2 b\} + \{e_2 b + (1 - e_2)e_1 b\} - g(e_1) \quad \dots(3)$$

$$\frac{SP}{2} = \{e_1 b + (1 - e_1)e_2 b\} + \{e_2 b + (1 - e_2)e_1 b\} - g(e_2) \quad \dots(4)$$

$$\frac{SP}{P} = \{e_1 B + (1 - e_1)e_2 B\} + \{e_2 B + (1 - e_2)e_1 B\} \quad \dots(5)$$

$$\frac{IN}{1} = 2\{e_1 [b + (1 -)b] + (1 - e_1)e_2 t b\} - g(e_1) \quad \dots(6)$$

$$\frac{IN}{2} = 2\{e_1 [b + (1 -)b] + (1 - e_1)e_2 t b\} - g(e_2) \quad \dots(7)$$

$$\frac{IN}{P} = 2\{e_1 [+ (1 -) B] + (1 - e_1)e_2 t B\} \quad \dots(8)$$

The levels of effort in equilibrium are given by the following first-order conditions.

$$g'(e_1^{IN}) = 2b(+ 1 - + t e_2^{IN}) \quad \dots(9)$$

$$g'(e_2^{IN}) = 2tb(1 - e_2^{IN}) \quad \dots(10)$$

$$g'(e_1^{SP}) = b[2 - (1 +)e_2^{SP}] \quad \dots(11)$$

$$g'(e_2^{SP}) = b[2 - (1 +)e_2^{SP}] \quad \dots(12)$$

It is apparent that the efforts of agents are strategic substitutes in this case, which implies that if one agent exerts higher effort and is informed, then the other has less incentive to search because the agent might receive the nonnegative payoff for no effort.

4.1 Level of Effort in Equilibrium

We now specify the cost function of effort so that $g(e) = be^2$, which is used by Bao and Wang (2012). When $1 - (1 -) - t > 0$ is satisfied, the value of right-hand side of the equations (9)-(12) is between 0 and 2b. Therefore, we can assume for simplicity that the effort levels in equilibrium are always between 0 and 1. We can ascertain their specified effort levels from simple calculation :

$$e_1^{IN} = \frac{1 - t^2 - (1 - \beta)}{1 - t^2} \quad \dots(13)$$

$$e_2^{IN} = \frac{(1 - \beta)t}{1 - t^2} \quad \dots(14)$$

$$e_1^{SP} = e_2^{SP} = e^{SP} = \frac{2}{3 + \beta} \quad \dots(15)$$

Next we consider the property of the effort levels above. Four related observations about the effort levels must be made. First, we consider the case without intrinsic motivation. If $\beta = 0$, then the agent has no intrinsic motivation under integration. Then, the efforts are $e_1^{IN} = 1, e_2^{IN} = 0$. Worker A_1 , if informed, can choose a favorite project in the two divisions. Therefore, that worker has much higher incentive to search. Worker A_2 saves the cost of effort by free riding on the information of A_1 (strategic substitute). This result obtained under the case of $\beta = 0$ is the same as that reported by Bao and Wang (2012).

Second, we investigate the interaction between the effort levels and probability t , with which A_1 approved F_2 proposed by A_2 . We obtain $e_1^{IN} / t < 0, e_2^{IN} / t > 0$ from simple calculation. One might intuit that A_2 exerts higher effort to propose his favorite project (F_2) because A_1 's screening ability is higher. Then, from strategic substitute, e_1^{IN} is decreasing. We have the following lemma:

Lemma 1 : The agent in control exerts less effort, while the agent losing control exerts greater effort under a higher level of the agent's ability (t).

Third, we examine the interaction between the effort levels and the extent of intrinsic motivation β . We have $e_1^{IN} / \beta < 0, e_2^{IN} / \beta > 0$. It is apparent that the agent with high intrinsic motivation exerts less effort because choosing the firm management's favorite project gives the worker less payoff after all. Then, worker A_2 exerts more effort from a strategic substitute. We therefore have the following.

Lemma 2 : The agent in control exerts less effort, whereas the agent losing control exerts greater effort with a higher level of the extent of intrinsic motivation (β).

Finally, we check the large/small relation between e_1^{IN} and e_2^{IN} . It is apparent that

$$e_1^{IN} - e_2^{IN} = \frac{1 - t^2}{(1 - \beta)(1 + t)} .$$

Consequently, in the case in which the screening ability (t) is sufficiently large to for \bar{t} to be between 0 and 1, when β is between $\bar{\beta}$ and 1, $e_1^{IN} < e_2^{IN}$ holds: The effort exerted by the agent in control is lower than the effort exerted by the agent losing control. The reasons are the following. First, when β is sufficiently large, A_1 loses incentive to search from lemma 2. Second, when t is sufficiently large,

A_2 exerts greater effort level from lemma 1. The result contrasts with that reported by Bao and Wang (2012), where the agent having two division's control chooses a maximized effort level and the agent losing control chooses minimized effort level (i.e. $e_1^{IN} = 1, e_2^{IN} = 0$). We have the following proposition:

Proposition 1 : If the screening ability of A_1 and the extent of intrinsic motivation is sufficiently large, then the effort chosen by the agent having control is less than the effort exerted by the agent losing control.

4.2 Optimal Task Design

We now derive the firm's expected payoffs in both integration and separation and consider the optimal task design for the firm. Substituting (13)-(15) into (5) and (8), respectively, the firm's payoffs are calculated as shown below.

$$P^{IN} = \frac{2(1-t^2)[\alpha + (1-\alpha)] [1-t^2 - (1-\alpha)] + (1-\alpha)^2 t^2}{(1-t^2)^2} B \quad \dots(16)$$

$$P^{SP} = \frac{8(2+\alpha)}{(3+\alpha)^2} B \quad \dots(17)$$

We first examine the optimal task design when the agent in control has no intrinsic motivation and always approves the project proposed by the agent without control (i.e. $\alpha = 0, t = 1$). Then, the difference between (16) and (17) is the following.

$$P^{IN} - P^{SP} = \frac{(1+\alpha)^2}{(3+\alpha)^2} > 0$$

Therefore, it is always optimal for the firm management to choose integration in this case because the firm management can obtain the payoff with certainty under integration: the agent in control exerts the maximum level of effort.

Next, we now consider a case in which there exists both intrinsic motivation and screening ability. Therefore, $\alpha, t \in (0, 1)$. It is difficult to calculate the difference between the respective payoffs. We therefore use the following parameter specification: $\alpha = \frac{1}{3}, \beta = \frac{1}{2}$ (Case 1) and $\alpha = \frac{2}{3}, \beta = \frac{1}{2}$ (Case 2). We can establish the following proposition :

Proposition 2 : In Case 1 $\alpha = \frac{1}{3}, \beta = \frac{1}{2}$, we always have $P^{IN} > P^{SP}$. In Case 2 $\alpha = \frac{2}{3}, \beta = \frac{1}{2}$, we obtain the following results :

(1) when the screening ability is higher $\sqrt{\frac{23 + \sqrt{7497}}{134}} < t < 1$, it is apparent

that $P^{IN} > P^{SP}$, and

A_2

(2) when the screening ability is lower $0 < t < \sqrt{\frac{23 + \sqrt{7497}}{134}}$, $\frac{IN}{P} > \frac{SP}{P}$ holds

under $0 < \hat{\theta} < 1$ and $\frac{IN}{P} > \frac{SP}{P}$ holds under $\hat{\theta} < 1$ ($\hat{\theta} \in (0, 1)$).

In Case 1, where $\hat{\theta}$ is lower than in Case 2, integration is always optimal ($\frac{IN}{P} > \frac{SP}{P}$). If A_1 chooses the firm's favorite project under integration, then the firm can receive B . However, under separation, the firm's payoff is at most B because A_1 does not implement the firm management's favorite project. Consequently, in the case in which $\hat{\theta}$ is lower, it is better for the firm to adopt integration.

In Case 2, we consider the case in which $\hat{\theta}$ is higher than that of Case 1. Then, when t is sufficiently large, integration is always an optimal task design. However, particularly when t is sufficiently small and $\hat{\theta}$ is sufficiently large, separation might be optimal. The reasons are the following. First, if t is small, then A_1 frequently rejects the project proposed by A_2 . Consequently, the firm does not receive positive payoffs. Second, if $\hat{\theta}$ is large, then A_1 has less of an incentive to search according to lemma 2. Consequently, the probability of implementing some project decreases. The result contrasts with that reported by Bao and Wang (2012), which presents optimality of the firm to choose integration in which the agent in control exerts the maximum effort level.

5. Conclusion

As described in this report, we show how the intrinsic motivation of workers affects the decision of whether to choose either integration or separation with an incomplete contract. To consider that, we introduce intrinsic motivation and the screening ability to the model of Bao and Wang (2012).

Results show that when intrinsic motivation is high and the screening ability is low, a firm might choose separation, in contrast to results reported by Bao and Wang (2012), where the principal invariably adopts integration (Proposition 2). An agent with high intrinsic motivation exerts low effort level (Lemma 2). The agent in control often rejects the project proposed by the agent losing control under a low level of screening ability. Then, the efficiency of integration discussed by Bao and Wang (2012) is lost.

The result presented herein has implications for optimal task design in a firm. The firm usually assigns many integrated tasks to the worker who is intrinsically motivated because the worker works for the firm management's profit. However, once the worker notices that altruistic behavior yields a lower personal return, the worker might lose incentive to undertake greater effort. Then, integration is not always optimal for the firm management. Recently, great discussion has arisen about prolonged work as a social problem in Japan. Long work hours can cause an employee's death from overwork: Karoshi. One cause

of the prolonged work hours is that too many tasks are integrated into the schedule of one worker. Our result indicates that it is favorable in terms of firm's profit to separate the tasks in the case conducted explained above. This can be regarded as a decrease in the length of working time.

Further study of the interaction between intrinsic motivation and the task design problem is expected to be of value to the field of Human Resource Management. We have assumed that the extent of intrinsic motivation is defined as the probability of choosing the firm's favorite project. If we alter the definition of intrinsic motivation, then we can get additional implications in Human Resource Management. For instance, we were able to investigate the case in which motivated agents intrinsically derive utility from exerting effort, as described by Delfgaauw and Dur (2008). These tasks are left as subjects for future research.

References

- Bao, T. and Wang, Y., "Incomplete Contract, Bargaining and Optimal Divisional Structure", *Journal of Economics*, 107, 2012, 81-96.
- Delfgaauw, J. and Dur, R., "Incentives and Workers' Motivation in the Public Sector", *Economic Journal*, 118(525), 2008, 171-191.
- De Paola, M. and Scoppa, V., "Organizational Design, Project Selection, and Incentives", *Journal of Institutional and Theoretical Economics*, 162(3), 2006, 424-449.
- Khalil, F., D. Kim, and D. Shin, "Optimal Task Design : To Integrate or Separate Planning and Implementation", *Journal of Economics and Management Strategy*, 15, 2006, 457-478.
- Lewis, T., and D. Sappington, "Information Management in Incentive Problems", *Journal of Political Economy*, 105, 1997, 796-821.
- Makris, M., "Incentives for motivated agents under an administrative constraint", *Journal of Economic Behavior and Organization*, 71, 2009, 428-440. ★

Effect of Venture Capital Exist through IPO on Enterprise Innovation : An Empirical Analysis on China's Technological Enterprises

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Venture capital exist through IPO could improve financing conditions of enterprises and increase funding for enterprise innovation. But it also could cause the distortion of venture investors' incentives and affect innovation performance of enterprises. Using the sample of the listed technological companies in China, considering the events of venture capital exist through IPO, the research empirically analyzed the effects of venture capital exist through IPO on enterprise innovation with the random effects panel regression and Poisson panel regression. The research documents that the offer amount of IPO, the holding period of venture capital, the number of shareholding venture capitals and the return of venture capital investment have significant positive correlation with the performance of enterprise innovation.

[**Keywords** : innovation; venture capital; technological enterprises; patents applications]

1. Introduction

As a high-investment and high-risk enterprise activity, enterprise innovation, especially the technological innovation, is normally faced with more financing constraints. It is easy to understand that financing has significant effects

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on the performance of enterprise innovation. Some related research found that some specific financing methods can significantly improve the performance of enterprise innovation.

Enterprise innovation requires large amount of funding, which makes the limited internal hard to provide long term sufficient financing to innovation. To the contrary, external financing is viewed as a better way to finance innovation. Ayyagari (2011) investigated the firm characteristics associated with innovation in public and private firms, and found that access to external financing is associated with greater enterprise innovation, which means, the companies tend to have more new products and technologies, knowledge transfers, and new production process. Acharya and Xu (2017) examined the relation between innovation and firm's financial dependence, and documents that public firms in external finance dependent industries tend to spend more on R&D and generate better patent portfolio.

Under the external financing, the direct financing methods, compared with the indirect financing methods, are believed to have higher efficiency in supporting enterprise innovation. Atnassov (2016) documents that firms that rely more on direct financing methods, such as issuing public debt and equity, innovate more and have higher quality of innovation. Aghion et al. (2013) built a manager career model to document that institutional ownership, a form of direct financing, is associated with more innovation, since it increases managerial incentives to innovate by reducing managers' career risk of risky innovation project.

As a typical external and direct financing method, venture capital is believed having significant effects on enterprise innovation. Florida and Kenney (1988) points out that venture capital plays a critical role in enterprise innovation process by providing funds and helping to organize embryonic technology-oriented networks. Kortum and Lerner (2000) analyzed the influence of venture capital on patented inventions, and proved that more venture capital activity is associated with higher patenting rates. But Florida and Kenney (1998) also indicate that some companies held by venture capitals might be moved into the IPO market without being afforded sufficient time to develop. As Gompers (1996) mentioned in his research, some venture capital tend to take companies public earlier to establish a reputation and raise capital for new funds. Especially the young venture capital tends to have shorter holding period and more underpriced at the IPO (Initial Public Offering). That means, the venture capital exist through IPO might affect the enterprise innovation.

Some research documents that IPO has significant effects on enterprise innovation. Bernsten (2015) argues that the quality of enterprise innovation appeared to be lower following the IPO since the managers would rely more on the external innovation. While Zhang et al. (2017) found that the IPO could provide more funds to promote the enterprise innovation, based the empirical analysis on

the data of China's listed firms. Few research directly discussed on the effect of venture capital exist through IPO on enterprise innovation so far. But we can easily find that the effect may vary with different features of venture capitals and the IPO from previous research.

We select the companies which were moved to public by venture capitals from the sample of the listed technological companies in China. We take the venture capital holding period, the offer amount of IPO, the number of shareholding venture capital and the return of venture capital investment as the indicator of the features of venture capital exist through IPO. We use R&D expenses, applications of patents (including invention and utility model patents) and valid patents as the measure of enterprise innovation. From the results of random effects panel regression and Poisson panel regression, we find that, in the event of venture capital exist through IPO, the offer amount of IPO has significant positive correlation with the performance of enterprise innovation; the holding period of venture capital and the number of venture investors have significant positive correlation with the counts of the application of invention; and the return of venture capital is significantly positively correlated with R&D expenditures and the counts of valid patents. We also conduct the robustness analysis to test the effects of variable selection and stock market segmentation, and found the results are consistent with the previous results.

2. Data, Variable Construction and Empirical Specification

2.1 Measuring Innovation Performance

The previous researches normally applied innovation input, output and efficiency as the indicators of the performance of enterprise innovation. The R&D expensed and the number of R&D personnel are used as the measures of innovation input (Kortum and Lerner, 2000; Lin, 2012; Xu et al., 2017). The count of patents applications, the valid patents and the patents citations are used as the measures of innovation output (Atanassov, 2016; Acharya and Xu, 2016; Bernstein, 2015); the ratio of innovation input to output and the generality and originality of patents are used as the measures of innovation efficiency (Hirshleifer et al., 2013; Bernstein, 2015; Atanassove, 2016).

We chose innovation input and output as the indicators of enterprise innovation performance. The R&D expense of enterprise is selected as the measure of innovation input, and the natural logarithm of the measure is used in regression, which is represented as RD. The count of applications of invention patents, patents (including invention and utility model patents), valid patents are selected as the measures of innovation output, which are represented as Invention, Patent and Valid. In the random effects panel regression, we use the natural logarithms of these measures; and in the Poisson panel regression, we use these measures as variables directly.

Table-1: Description of the measures of innovation performance

| Variables | Definition of variables |
|-----------|---|
| RD | $\ln(\text{R\&D expenses of the enterprise at the end of fiscal year})$ |
| Patent | The count of application of invention and utility model patents $\ln(1 + \text{the count of applications of invention and utility model patents})$ |
| Invention | The count of application of invention patents $\ln(1 + \text{the count of applications of invention patents})$ |
| Valid | The count of valid invention and utility model patents $\ln(1 + \text{the count of valid invention and utility model patents})$ |

2.2 Measuring the features of venture capital exist through IPO

The longer venture capital holding period normally means more steady financing support to the enterprise, which could benefit its innovation operation. That means, the enterprise could have more time to develop to mature before going public. So we assume that the enterprise with the longer venture capital holding period has better innovation performance. In the empirical analysis, we chose the average holding period of venture capitals before their exist through IPO as the indicator of venture capital holding period, and the natural logarithm of the measure is used in regression, which is represented as Holding.

As a typical direct financing method, IPO raises the necessary funding for enterprise, which could provide more funding to its innovation operation. So it is reasonable to assume that the offer amount of IPO has significant effects on enterprise innovation. That means, the performance of enterprise innovation tend to more superior when the offer amount of IPO is larger. In the empirical analysis, we chose the offer amount of IPO as an indicator of the features of venture capital exist through IPO, and we use the natural logarithm of the measure, represented as IPO, in regression.

Joint ownership of the enterprise could take risk diversification for the shareholding venture capitals. More shareholding venture capitals probably could ease the anxiety of venture capital manager, which could help keep the investment stable and benefit the enterprise innovation. So we assume higher number of shareholding venture capitals is associated with better performance of innovation. We chose the count of shareholding venture capitals of each firm as the measure, and take the natural logarithm of the measure, represented as VC, in regression.

The optimal timing of IPO is when the expected profitability of the firm rises high enough, or its market value rises faster than its private value (Pastor and Taylor, 2009). It is reasonable to predict that when the firm acquires disruptive innovation, the firm's expected profitability increases rapidly and makes it the optimal timing of IPO. So we assume higher return of venture capital investment (calculated as the book value of the exist divided by the initial investment) reflects

higher innovation capacity of the firm. We use the average return of venture capital investment as the measure, and take the natural logarithm, represented as Return, in regression.

Table-2 : Description of measures of venture capital exist through IPO

| Variables | Definition of variables |
|-----------|--|
| Holding | ln(the average holding period of venture capitals) |
| IPO | ln(the offer amount of IPO) |
| VC | ln(1+the count of shareholding venture capitals) |
| Return | The average return of venture capital investment |

2.3 Other Financial Variables

We choose several financial variables as the control variables in regression, including the variable Age, Leverage, Intangible/Assets, EBITDA/Assets and Q.

Table-3 : Description of other financial variables

| Variables | Definition of variables |
|-------------------|--------------------------------|
| Age | ln(1+the age of the firm) |
| Leverage | total liabilities/total assets |
| Intangible/Assets | Intangible assets/total assets |
| EBITDA/Assets | EBITDA/total assets |
| Q | Tobin Q |

The data of the events of venture capital exist through IPO and its features is from WIND, and the data of patents, R&D expenses, and other financial variables is from CSMAR.

2.4 Empirical specification

Refer to the regression model Acharya and Xu (2016) used, we estimate the following equation in the empirical analysis:

$$Innovation_{it} = \alpha + X_i + Z_{it} + u_i \quad \dots(1)$$

where $innovation_{it}$ is the performance of enterprise innovation variables, including *RD*, *Patent*, *Invention*, *Valid*; X_i is the set of the features of venture capitals exist through IPO, including *Holding*, *IPO*, *VC* and *Return*; Z_{it} is the set of other financial variables, including *Age*, *Leverage*, *Intangible/Assets*, *EBITDA/Assets* and *Q*; u_i captures the firm random effects. It should be noted that the variables *Patent*, *Invention* and *Valid* are natural logarithms of the measures in regression.

Since the counts of patents are typical count data, it is reasonable to use Poisson regression (Cameron and Trivedi, 1998). Refer to the method used in

Atanassov (2016), we also apply the following Poisson panel regression equation in empirical analysis:

$$Innovation_{it} = \exp\{X_i + Z_{it} + u_i\} \quad \dots(2)$$

where the variables Patent, Invention and Valid are used in regression as count data.

3. Empirical Results

3.1 Descriptive Statistics

We construct three data samples by the measures of innovation, including the R&D expenses data sample, applications of patents (patents and inventions) data sample and valid patents data sample. The max observation is 2533, and the min observation is 1842. We assume the missing values in the samples are missing at random, so we ignore the missing value in regression.

Table-4 : Descriptive statistics

| Panel A : R&D expenses data sample | | | | |
|---|----------------|------------|------------|-------------|
| | Average | Min | Max | Obs. |
| RD (million) | 60.13 | 0.73 | 1561.59 | 2533 |
| Holding (day) | 1006 | 29 | 4772 | 2533 |
| VC | 2.11 | 1 | 21 | 2550 |
| IPO (million) | 699.17 | 77.52 | 12991.89 | 2550 |
| Invest | 9.37 | 0.35 | 189.37 | 2096 |
| Age (year) | 10.92 | 1 | 27 | 2550 |
| Leverage | 0.30 | 0.01 | 2.86 | 2550 |
| Intangible/Assets | 0.04 | 0.00 | 0.60 | 2546 |
| EBITDA/Assets | 0.05 | -1.92 | 0.28 | 2550 |
| Q | 3.12 | 0.37 | 29.17 | 2477 |
| | Average | Min | Max | Obs. |
| Patent | 21.55 | 0 | 873 | 2289 |
| Invention | 10.35 | 0 | 377 | 2289 |
| Holding (day) | 1008 | 29 | 4772 | 2187 |
| VC | 2.11 | 1 | 21 | 2289 |
| IPO (million) | 722.44 | 77.52 | 9320.03 | 2289 |
| Invest | 9.66 | 0.35 | 189.37 | 1842 |
| Age (year) | 10.55 | 1 | 27 | 2289 |
| Leverage | 0.31 | 0.01 | 0.85 | 2289 |

| | | | | |
|-------------------|---------|-------|---------|------|
| Intangible/Assets | 0.04 | 0.00 | 0.60 | 2287 |
| EBITDA/Assets | 0.05 | -0.36 | 0.28 | 2289 |
| Q | 2.96 | 0.37 | 20.79 | 2232 |
| | | | | |
| | Average | Min | Max | Obs. |
| Valid | 50.39 | 0 | 1798 | 2527 |
| Holding (day) | 1014 | 29 | 4772 | 2414 |
| VC | 2.11 | 1 | 21 | 2527 |
| IPO(million) | 708.90 | 77.52 | 9320.03 | 2527 |
| Invest | 9.51 | 0.35 | 189.37 | 2025 |
| Age (year) | 10.68 | 1 | 27 | 2527 |
| Leverage | 0.32 | 0.01 | 2.86 | 2527 |
| Intangible/Assets | 0.04 | 0.00 | 0.60 | 2525 |
| EBITDA/Assets | 0.05 | -1.92 | 0.28 | 2527 |
| Q | 3.00 | 0.37 | 20.79 | 2459 |

3-2 Basic Results

We apply the random effect regression model and random effect Poisson panel regression model in regression, and we use maximum likelihood estimation in random effect regression. Table 5 is the summary of the basic results. From model (1) to model (4), the results are based on the regression using equation (1), which is the random effect regression model; from model (5) to model (7), the results are based on the regression using equation (2), which is the random effect Poisson regression model. In regression, model (1) uses R&D expenses data sample (variable RD), model (2) and model (5) use applications of patents data sample (variable Patent), model (3) and model (6) use applications of patents data sample (variable Invention), model (4) and model (7) use valid patents data sample (variable Valid).

The regression results indicate that the independent variable IPO has significant positive correlation with all the dependent variables, which means, the offer amount of IPO is positively correlated with the R&D expenses, applications of patents and inventions, and valid patents. The independent variables Holding and VC have significant positive correlation with the dependent variable Invention. That means, with the increases of venture capital holding period and the number of shareholding venture capitals, the firms tend to have more applications of inventions, indicating their higher capacity of disruptive innovation. The independent variable Invest is significantly positively correlated with the dependent variables RD, which means, higher return of venture capital investment leads to high R&D expenses and more valid patents.

Table-5 : Summary of results

| | Model specification | | | | | | |
|-------------------------------|---------------------|----------------------|--------------------|---------------------|-----------------------|----------------------|----------------------|
| | ML (1) | ML (2) | ML (3) | ML (4) | Poisson (5) | Poisson (6) | Poisson (7) |
| Holding | 0.049 (0.78) | 0.027 (0.37) | 0.149** (2.06) | -0.076 (-0.71) | 0.127 (1.50) | 0.259*** (2.76) | -0.097 (-0.81) |
| VC | -0.002 (-0.02) | 0.148 (1.44) | 0.252** (2.47) | 0.047 (0.31) | 0.137 (1.23) | 0.308** (2.36) | 0.105 (0.80) |
| IPO | 0.715*** (13.41) | 0.270*** (4.11) | 0.288*** (4.44) | 0.353*** (3.8) | 0.495*** (7.32) | 0.616*** (7.82) | 0.451*** (5.11) |
| Invest | 0.005* (1.72) | -0.003 (-0.98) | 0.001 (0.27) | 0.001 (0.28) | -0.001 (-0.31) | 0.005 (0.88) | 0.016** (2.52) |
| Age | 0.839*** (16.26) | 0.234*** (3.27) | 0.210*** (2.92) | 2.124*** (36.85) | 0.507*** (16.63) | 0.631*** (15.51) | 2.458*** (106.44) |
| Leverage | 1.672*** (14.67) | 0.442** (2.29) | 0.131 (0.68) | 1.001*** (7.91) | 0.627*** (8.21) | 0.041 (0.38) | 0.840*** (17.29) |
| Intangible/ Assets | 1.235*** (3.31) | 0.593 (0.96) | 0.266 (0.43) | 2.080*** (4.80) | 2.048*** (9.14) | 2.490*** (9.49) | 1.066*** (5.40) |
| EBITDA/ Assets | 1.899*** (9.10) | 1.573*** (2.91) | 0.727 (1.32) | 0.297 (1.34) | 2.921*** (15.44) | 2.247*** (8.50) | 0.331*** (3.87) |
| Q | 0.027** (4.92) | -0.038*** (-3.46) | -0.15 (-1.35) | 0.002 (0.29) | -0.048*** (-11.36) | -0.025*** (-4.43) | -0.013*** (-5.10) |
| | 1976 | 1748 | 1748 | 1918 | 1748 | 1748 | 1918 |
| Log-likelihood | -1588.96 | -2252.10 | -2271.40 | -1829.39 | -10779.80 | -7391.23 | -10443.35 |
| P-value, ² test | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Note : This table reports the results of regression. ***, ** and * denote significance at 1%, 5% and 10%, respectively.

The results verified our previous hypothesis that with larger offer amount of IPO, longer holding period, more shareholding venture capitals and higher return of venture capital investment, the firms tend to have better performance of enterprise innovation.

3.3 Robustness Test

The data samples include the firms listed on Shenzhen SME board, Shenzhen GEM and Shanghai main board. The firms listed on Shenzhen SME board and Shenzhen GEM are small and middle-sized enterprises, and these firms usually

have significant difference with the firms listed on the main board. So we conduct the sample which only includes the firms listed on Shenzhen SME board and Shenzhen GEM to perform the regression. And the results are consistent with our basic regression results. We also replace the applications of patents to the granted applications of patents to perform the regression, and get the similar results.

4. Conclusion

Venture capital exist through IPO is an efficient method for firms to get more funding for their enterprise innovation. But the distortion of venture capital investors' incentives might make the firms go to public without sufficient time to develop. So under some circumstances, venture capital exist through IPO could hurt the enterprise innovation.

To test the effect of venture capital exist through IPO on enterprise innovation, we use the data sample of China's technological enterprises to empirically test the relation between the performance of enterprise innovation with the features of venture capital exist through IPO. We choose R&D expenses, application of patents and valid patents as the measures of the performance of enterprise innovation, and the offer amount of IPO, venture capital holding period, the number of shareholding venture capitals and the return of venture capital investment as the measures of the features of venture capital exist through IPO. We apply the random effect panel regression and random effect Poisson panel regression in the empirical analysis, respectively. In the robustness analysis, we also consider the effects of variable selection and stock market characteristics on the results.

The research documents that, in the event of venture capital exist through IPO, the offer amount of IPO has significant positive correlation with the performance of enterprise innovation; the holding period of venture capital and the number of shareholding venture capitals have significant positive correlation with the counts of the applications of invention; and the return of venture capital is significantly positively correlated with R&D expenditures and the counts of valid patents.

The results basically prove that venture capital exist through IPO can improve enterprise innovation performance. First, larger offer amount of IPO could increase more funding for enterprise innovation, and leads to more R&D expenditures, patents applications and valid patents. Second, longer holding period of venture capital and more shareholding venture capitals indicated more efficient and stable investment in enterprises, so their innovation capabilities, especially in incremental innovation, which is normally represented as the count of invention, tend to be strengthened. Third, the return of venture capital reflects the timing of IPO, so the higher return rate could be viewed as the sign of higher capacity of enterprise innovation, which means, the enterprises tend to have more R&D expenditures and valid patents.

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References

- Acharya, V. & Xu, Z., “Financial dependence and innovation: The case of public versus private firms”, *Journal of Financial Economics*, 124(2), 2017, 223-243.
- Aghion, P., Reenen, J. V. & Zingales, L., “Innovation and Institutional Ownership”, *American Economic Review*, 103(1), 2013, 277-304.
- Atanassov, J., “Arm’s Length Financing and Innovation: Evidence from Publicly Traded Firms”, *Management Science*, 62(1), 2016, 128-155.
- Ayyagari, M., “Firm Innovation in Emerging Markets”, *Journal of Financial and Quantitative Analysis*, 46(6), 2011, 1545-1580.
- Bernstein, S., “Does Going Public Affect Innovation”, *Journal of Finance*, 2015, 70(4), 2015, 1365-1403.
- Cameron, A. C. & Trivedi, P. K., *Regression Analysis of Count Data*, New York : Cambridge University Press, 1998.
- Florida, R. L. & Kenney, M., “Venture capital-financed innovation and technological change in the USA”, *Research Policy*, 17(3), 1988, 119-137.
- Gompers, P. A., “Grandstanding in the venture capital industry”, *Journal of Financial Economics*, 42(1), 1996, 133-156.
- Guo, R. J. & Zhou, N., “Innovation capability and post-IPO performance”, *Review of Quantitative Finance & Accounting*, 46(2), 2014, 1-23.
- Hirshleifer, D., Hsu, P. H. & Li, D., “Innovative efficiency and stock returns”, *Journal of Financial Economics*, 107(3), 2013, 632-654.
- Kortum, S. & Lerner, J., “Assessing the Contribution of Venture Capital to Innovation”, *Rand Journal of Economics*, 31(4), 2000, 674-692.
- Lin, X., “Endogenous technological progress and the cross-section of stock returns”, *Journal of Financial Economics*, 103(2), 2012, 411-427.
- Pástor, L. & Taylor, L. A., “Veronesi P. Entrepreneurial Learning, the IPO Decision, and the Post-IPO Drop in Firm Profitability”, *Review of Financial Studies*, 22(8), 2009, 3005-3046.
- Xu, H., Shi, H. & Jin, Y., “The determinants of IPO pricing: past performance or technology innovation? Evidence from CHINEXT market”, *Journal of Financial Research*, 442(4), 2017, 191-206.
- Zhang, J., Li, H. & He, H., “IPO and firm innovation: an empirical study based on Chinese patent data”, *Journal of Financial Research*, 443(5), 2017, 160-175. ★

BRICS Countries in Current Economic Scenario

H. K. Singh*, F. B. Singh* and Vaibhav**

In contemporary economic scenario the regional trade agreements have gathered enormous importance to sail the global economics to opulence. India has been putting in practice so many bilateral and multilateral agreements to trace out the market share in nearby region and throughout the geography. In this connotation, BRICS has been recognized as one of the most important associations for the purpose of mutual economic cooperation not just limited to economic development but extending to political and cultural harmony and development too. Keeping the significance in mind, the research article aims at examining the probable differences caused by its existence in the diversified sector of BRICS economy. For the purpose, demographic traits, industrial overviews, and agricultural overviews have been taken into consideration.

[**Keywords** : BRICS Countries, Economic scenario, Socio-economic development, Mutual economic cooperation]

1. Introduction

The term “BRICS” was initially formulated in 2001 by economist Jim O’Neill, of Goldman Sachs, in a report on growth prospects for the economies of Brazil, Russia, India and China - which together represented a significant share of the world’s production and population. In 2006, the four countries initiated a regular informal diplomatic coordination, with annual meetings of Foreign Ministers at the margins of the General Debate of the UN General Assembly (UNGA). This successful interaction led to the decision that the dialogue was to be carried out at

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the level of Heads of State and Government in annual Summits. As of the First Summit, held in Yekaterinburg in 2009, the depth and scope of the dialogue among the Members of BRICs - which became BRICS in 2011 with the inclusion of South Africa - was further enhanced. More than an acronym that identified countries emerging in the international economic order, BRICS became a new and promising political diplomatic entity, far beyond the original concept tailored for the financial markets.

After the Yekaterinburg Summit, five annual Summits were held (Brasilia, 2010; Sanya, 2011; New Delhi, 2012; Durban, 2013; and Fortaleza, 2014). The leaders of the member countries have been holding at least one annual meeting. During the period since its formation, BRICS has evolved in an incremental manner, in areas of consensus amongst its members, strengthening its two main pillars: (i) coordination in multilateral form, with a focus on economic and political governance; and (ii) cooperation between members.

2. Economic Overviews

In the recent past, some large economies, such as, Brazil, Russia, India, China and South Africa (BRICS) have acquired a vital role in the world economy as producers of goods and services, receivers of capital, and as potential consumer markets. The BRICS economies have been identified as some of the fastest growing countries and the engines of the global recovery process, which underscores the changed role of these economies. Even in the G-20 countries' forum, BRICS are playing a formidable role in shaping macroeconomic policy after the recent financial crisis. At present, these five countries encompass over 40 per cent of the world's population and account for nearly 25 per cent of total global GDP in terms of Purchasing Power Parity (PPP). If one compares the GDP in PPP terms, four economies figure among the top ten, with China, India, Russia, Brazil, and South Africa in 2nd, 4th, 6th, 8th, and 26th places, respectively (Table-1). In terms of contribution to growth of PPP-adjusted global GDP of the world, these five economies accounted for 55 per cent.

Table-1 : Overview of BRICS

| Country | Rank in World | GDP (PPP bn) | GDP (\$ bn) | | Share in World GDP (%) | | Per Capita GDP (\$) | |
|--------------|---------------|--------------|-------------|-------|------------------------|------|---------------------|--------|
| | | | 1990 | 2010 | 1990 | 2010 | 1990 | 2010 |
| Brazil | 8 | 2,172 | 508 | 2,090 | 3.3 | 2.9 | 3,464 | 10,816 |
| Russia | 6 | 2,223 | — | 1,465 | — | 3 | — | 10,437 |
| India | 4 | 4,060 | 326 | 1,538 | 3.1 | 5.4 | 378 | 1,265 |
| China | 2 | 10,086 | 390 | 5,878 | 3.9 | 13.6 | 341 | 4,382 |
| South Africa | 26 | 524 | 112 | 357 | 0.9 | 0.7 | 5,456 | 7,158 |

Source : BRICS and the World Order : A Beginner's Guide-2011

The BRICS countries' gaining strength from their economic reform processes, buoyed by newly emerging confidence, reached a few milestones during 2001-08. Some of the most important milestones achieved during this period include China joining the World Trade Organization (WTO) in 2001, and opening up a process of modernization of its industries and services (2001); Brazil kick-starting a period of unprecedented economic prosperity (2003); China overtaking Germany as the third-largest economy (2007); and Brazil joining China and the Persian Gulf states by becoming a global creditor for the first time, as well as introducing a sovereign wealth fund to invest excess capital (2008).

Table-2 : General Information on BRICS Countries 2015

| Country | Area of Territory (1000 sq.km) | Capital City | Mid-year Population (million persons) | Population Density (persons per sq. km.) | National Currency |
|--------------|--------------------------------|--------------|---------------------------------------|--|-------------------|
| Brazil | 8516 | Brasília | 204 (1) | 24.0 | Real - R\$ |
| Russia | 17,125 (2) | Moscow | 146 | 8.6 | Rouble - Rub |
| India | 3,287 | New Delhi | 1,254 | 396 | Rupee |
| China | 9,600 | Beijing | 1,371 | 143 | Renminbi - RMB |
| South Africa | 1,221 | Pretoria | 55 | 44.2 | Rand - ZAR |

Source : BRICS JSP-2016

The table reveals that, Russia was the biggest country with 17,125 sq. km. area, while China extends in 9600 sq. km. and Brazil, India and South Africa have their extension in 8516, 3287 and 1221 sq. km. area respectively. Population wise China has been found having highest population of 1371 million, whereas, that in India, Brazil, Russia and South Africa is 1254, 204, 146 and 55 million respectively. It has also been found that, population density is highest in India i.e. 396 persons per sq. km. and Russia has lowest density among these economies, i.e. 8.6 persons per sq. km.

3. Socio-Economic Development in BRICS

Socio-economic development is a process that seeks to identify both the social and the economic needs within a community, and seek to create strategies which will address those needs in ways that are practical and in the best interests of the community over the long run. The general, idea is to find ways to improve the standard of living within the area while also making sure the local economy is healthy and capable of sustaining the population present in the area. Socio-economic development occurs in neighborhoods in metropolitan areas, sections of smaller cities and towns, and even in rural settings.

There are a number of factors which should be considered as part of any socio-economic development effort. Understanding the current circumstances that

prevail in the area is the first step toward regional development. By assessing the potential of human capital in the area, allowing for the current unemployment rate and when laws and regulations are currently in place that may be impeding the introduction of new industry into the area, it is possible to begin developing a plan that will ultimately mean more jobs, stable employment for more households, and more money flowing through the local economy.

Table-3 : Comparison of Economic and Social Indicators of BRICS Countries

| Population | Year | Value (million persons) | Male (%) | Female (%) | Crude Birth Rate | Crude Death Rate | Infant Mortality Rate | Maternal Mortality Rate |
|--------------|------|-------------------------|----------|------------|------------------|------------------|-----------------------|-------------------------|
| Brazil | 2015 | 204 | 49.4 | 50.6 | 14.2 | 6.1 | 13.8 | — |
| Russia | 2015 | 146 | 46.3 | 53.7 | 13.3 | 13.1 | 6.5 | 10.8 |
| India | 2015 | 1254 | 51.8 | 48.2 | 21.4 | 7.0 | 40.0 | 167.0 |
| China | 2015 | 1371 | 51.2 | 48.8 | 12.1 | 7.1 | 8.9 | 21.0 |
| South Africa | 2015 | 55 | 48.2 | 51.7 | 22.7 | 9.6 | 34.4 | — |

Source : BRICS JSP-2016

Crude Birth Rate (per 1 000 persons)

Crude Death Rate (per 1 000 persons)

Infant Mortality Rate (per 1 000 live births)

Maternal Mortality Rate (per 100 000 live births)

It is evident from the table that, population wise India is second largest country with 1254 million population, while China is largest populous country with 1371 million population. Likewise, India has the highest male populous country consisting of 51.8 percent of male population, whereas, China consists of 51.2 percent of male population. Russia has been traced as highest female populous country with 53.7 percent of female population. Except India and China, female population has been found higher than male in all three countries i.e. Brazil, Russia and South Africa. The table reveals India has highest crude birth rate of 21.4 followed by South Africa CBR of 22.7, while China has been found having lowest CBR of 12.1. Whereas, highest crude death rate was in Russia i.e. 13.1, while lowest CDR is found in Brazil i.e. 6.1. Infant and Maternal mortality rate have been found highest in India i.e. 40.0 and 167.0 respectively.

Utility is created (Production) for the satisfaction of his needs. Lord Keynes was of the view that a stimuli to investment comes via increase in consumption. When investment increases, income increases which leads to increase in consumption. The basis of this consumption is labour. These economies are more prone to labour driven market.

Table-4 : Labour and Unemployment Position

| Country | Year | Labour Force (%) | Unemployment Rate (%) | GDP Current Prices/Billion US\$) | Share of Public Expenditure on Education as % of GDP | Public Expenditure on Health as % of GDP |
|--------------|------|------------------|-----------------------|----------------------------------|--|--|
| Brazil | 2015 | 66.5 | 6.9 | 1,772 | 5.2 | 4.9 |
| Russia | 2015 | 52.5 | 5.6 | 1,332 | 3.8 | 3.6 |
| India | 2015 | 39.5 | 2.2 | 2,035 | 3.0 | 1.3 |
| China | 2015 | 56.3 | 4.1 | 11,006 | 4.2 | 5.5 |
| South Africa | 2015 | 38.4 | 25.3 | 313 | 6.9 | 4.1 |

Source : BRICS JSP-2016

Table shows that the highest labour force is in Brazil i.e. 66.5 percent, whereas, India is having lowest labour force i.e. 39.5 percent. However, China, Russia and South Africa comprise 56.3, 52.5 and 38.4 percent of labour force respectively. Likewise, South Africa has highest unemployment rate i.e. 25.3 percent, while India is having lowest unemployment rate of 2.2 percent, whereas, Brazil, Russia and China have unemployment rate of 6.9, 5.6 and 4.1 percent respectively. When GDP is accessed, China is found having highest GDP with 11,006 Billion, while, South Africa has been found having lowest GDP 313 billion US\$. Whereas, GDP of India is 2,035 Billion US\$. As a percentage of GDP, share of public expenditure on education was 6.9 percent in South Africa which is highest in BRICS, whereas, that on education has been found lowest in India i.e. 3.0 percent. Public expenditure on health as percentage of GDP is found highest in China i.e. 5.5 percent followed by Brazil with 4.9 percent of share while lowest i.e. 1.3 percent in India.

4. Industrial Production Scenario

Industrial development is necessary for modernization of agriculture. In India, agriculture is traditional and backward. The cost of production is high and productivity is low. India needs tractors, threshers, pump-sets and harvesters to modernize agriculture. To increase productivity, chemical fertilizers, pesticides and weedicides etc are needed. These are all industrial products. Without industrial development, these goods cannot be produced. Agricultural products like jute, cotton, sugarcane etc. are raw materials. To prepare finished products like flex, textiles, and sugar etc. India needs industrialization. So, industrial development is necessary for modernization of agriculture.

Developing countries, especially at an early stage of industrialization, have more opportunities to pursue inclusive industrial development with a potential for rapid growth and limited environmental damage. The take-off of labour-intensive industries exporting to major world markets could boost both output and employment, thus promoting sustained and inclusive growth. And the limited output volume and concentration on less polluting activities tend to make manufacturing less damaging for the environment than they will become at a later stage. As countries acquire skills and expand their infrastructure, the opportunities for growth and employment generation rise in other industries but usually proceed by drawing in increasing amounts of production factors, as well as natural resources and energy. Most industries at the middle-income stage are resource intensive and have relatively poor emission performance. So countries emerging from the low-income stage have good prospects for continuing the path of fast and inclusive development, but they start facing sustainability challenges.

Table-5 : Output of Selected Industrial Product

| Country | 2000 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Production of Petroleum | | | | | | | | | | | |
| Brazil (mn tons) | 62.0 | 87.2 | 88.5 | 92.0 | 98.7 | 104.0 | 106.5 | 104.6 | 102.4 | 114.1 | 123.3 |
| Russia (mn tons) | 324 | 481 | 491 | 488 | 495 | 506 | 512 | 519 | 522 | 526 | 533 |
| India (mn tons) | 32.4 | 34.0 | 34.1 | 33.5 | 33.7 | 37.7 | 38.1 | 37.9 | 37.8 | 37.5 | -- |
| China (mn tons) | 163.0 | 184.8 | 186.3 | 190.4 | 183.5 | 203.0 | 202.9 | 207.5 | 209.9 | 211.4 | 214.6 |
| South Africa (mn kl) | 21.0 | — | 26.0 | — | — | — | — | — | — | — | — |
| Electricity Production (Billion Kilowatt/Hours) | | | | | | | | | | | |
| Brazil | 349.0 | 419.3 | 449.0 | 463.0 | 463.0 | 516.0 | 533.0 | 552.5 | 570.0 | 590.5 | 560.8 |
| Russia | 877.8 | 995.8 | 1015.3 | 1040.4 | 992.0 | 1038.0 | 1054.9 | 1063.3 | 1059.1 | 1064.2 | 1063.4 |
| India | 554.5 | 752.5 | 813.1 | 840.9 | 906.0 | 965.7 | 1051.4 | 1108.5 | 1175.6 | 1256.0 | — |
| China | 1355.6 | 2865.7 | 3281.6 | 3466.9 | 3714.7 | 4207.2 | 4713.0 | 4987.6 | 5431.6 | 5649.6 | 5810.6 |
| South Africa | 210.7 | 253.8 | 263.5 | 258.3 | 249.6 | 259.6 | 262.5 | 257.9 | 256.1 | 254.7 | 249.7 |

Source : BRICS JSP-2016

The table reveals that the production of petroleum in 2015 was highest in Russia i.e. 533 million tons, and lowest i.e. 324 million tons in 2000. China was second in petroleum production i.e. 163.0 million tons in year 2000 which is lowest and 214.6 million tons was highest in the year 2015. India is fourth in this segment and it produced its highest in 2011 38.1 million tons in the year 2011 while lowest was 32.4 million tons during 2000. It's clear from the above table that the Russia was leading player in petroleum production. Likewise in the area of electricity production China was leading player in this segment, its highest production was 5810.6 billion kw/hours in the year 2015 whereas lowest in the year 2000 i.e.1355.6

billion kw/hours the trend was increasing during 2000-2015. Russia was second in this segment its highest production was 1064.2 billion kw/hours in the year 2014 while lowest i.e.877.8 billion kw/hours in the year 2000.

Energy is global industry, vital for economic development, and as such, has strong political and social implications. The world's largest emerging economies known as BRICS-Brazil, Russia, India, China, and South Africa- are in top 10 global energy consumers and are home to 40 percent of the world's population.

5. Agriculture and Animal Husbandry

Agricultural sector plays a strategic role in the process of economic development of a country. It has already made a significant contribution to the economic prosperity of advanced countries and its role in the economic development of less developed countries is of vital importance. In other words, where per capita real income is low, emphasis is being laid on agriculture and other primary industries.

In the word of Dr. Bright Singh, "Increase in agricultural production and the rise in the per-capita income of the rural community, together with the industrialization and urbanization, lead to an increased demand in industrial production."

Animal Husbandry and Dairying play an important role in development of BRICS economy. Animal Husbandry, Dairying and Fisheries sectors play an important role in economy and in the socio-economic development of the country. These sectors also play a significant role in supplementing family incomes and generating gainful employment in the rural sector, particularly, among the landless laborers, small and marginal farmers and women, besides providing cheap nutritional food to millions of people.

Table-6 : Position of Agriculture, Forestry, Animal Husbandry and Fishery

| Country | 2000 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Area of Cultivated Land (million hectares) | | | | | | | | | | | |
| Brazil | 50 | 61 | 62 | 65 | 65 | 65 | 67 | 67 | 71 | 75 | — |
| Russia | 124 | 122 | 122 | 122 | 122 | 121 | 121 | 122 | 122 | 122 | — |
| India | 156 | 155 | 156 | 156 | 155 | 156 | 156 | 155 | — | — | — |
| China | 130 | 130 | 130 | 122 | 135 | 135 | 135 | 135 | 135 | 135 | — |
| South Africa | — | — | — | — | — | — | — | 12 | — | — | — |
| Production of Cereal (million tons) | | | | | | | | | | | |
| Brazil | 45 | 57 | 67 | 77 | 68 | 73 | 75 | 87 | 98 | 98 | 103 |
| Russia | 65 | 78 | 82 | 108 | 97 | 61 | 94 | 71 | 92 | 105 | 105 |

| | | | | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| India | 186 | 203 | 216 | 220 | 203 | 226 | 242 | 239 | 246 | 235 | 236 |
| China | 405 | 451 | 456 | 478 | 482 | 496 | 519 | 539 | 553 | 557 | 572 |
| South Africa | 14 | 9 | 9 | 15 | 15 | 15 | 13 | 14 | 14 | 17 | 12 |
| Production of Meat (1,000 tons) | | | | | | | | | | | |
| Brazil | 10326 | 17349 | 18517 | 19472 | 19532 | 20749 | 1575 | 22036 | 23248 | 23772 | 24062 |
| Russia | 4446 | 5278 | 5790 | 6268 | 6719 | 7167 | 7519 | 8090 | 8544 | 9070 | 9484 |
| India | 1851 | 2302 | 4011 | 4280 | 4566 | 4869 | 5514 | 5948 | 6235 | 6691 | — |
| China | 60139 | 70890 | 68657 | 72787 | 76497 | 79258 | 79651 | 83872 | 85350 | 87068 | 86250 |
| South Africa | 1554 | 2627 | 2724 | 2787 | 2811 | 2978 | 2965 | 2962 | 3030 | 3147 | 3289 |
| Catch of Fish (1,000 tons) | | | | | | | | | | | |
| Brazil | 667 | 779 | 783 | 791 | 825 | 785 | 803 | — | — | — | — |
| Russia | 3776 | 3264 | 3417 | 3333 | 3728 | — | — | — | — | — | — |
| India | 5655 | 6869 | 7127 | 7616 | 7852 | 8231 | 8666 | 9040 | 9579 | 10072 | — |
| China | 11607 | 9240 | 9200 | 9511 | 9567 | 9870 | 10222 | 11618 | 11730 | 12509 | 12929 |
| South Africa | — | — | — | — | — | — | — | — | — | — | — |

Source : BRICS JSP-2016

Table shows that the maximum cultivated land was 156 million hectares in India during 2000-2012 which is highest in BRICS. While China was second in this segment which had maximum was 135 million hectares during year 2000-2014. Whereas Russia was comprises maximum 124 million hectares in the year 2014 and Brazil was fourth in this segment it's maximum i.e. 75 million hectares was in 2014.

China has been found leading producer of cereals i.e. 572 million tons in the year 2015, while lowest was in the year 2000 i.e. 405 million tons. India was second in this segment with its highest production of 246 million tons in the year 2013, while lowest i.e. 186 million tons in the year 2000. Whereas, Russia, Brazil and South Africa occupied third, fourth and fifth position respectively.

Similarly, production of meat is recorded highest in 2014 in China i.e. 87068 thousand tons, while lowest in 2000 with production of 60139 thousand tons. However the lowest producer among all in 2000 was Russia with 4446 thousand tons. In 2015 also, China recorded highest production, whereas Brazil positioned second with its highest production of 24062 thousand tons during 2015. Brazil recorded lowest production in 2011 i.e. 1575 thousand tons. Russia was third in this section with its maximum production of 9484 thousand tons in the year 2015. India occupied fourth position in the section its highest production of 6691 thousand tons in the year 2014, while India's lowest production has been recorded

in 2000 with 1851 thousand tons of cereals production. And South Africa had last position in BRICS.

Apart from this, in the area of fish catching, China stood at leading position in fish catching with 12929 thousand tons in the year 2015, while that in China has been found lowest in year 2007 with 9200 thousand tons. India has been found second in this segment with 10072 thousand tons in the year 2014, and that in India is recorded lowest in 2000 with that of 5655 thousand tons. Russia and Brazil occupied third and fourth position respectively, whereas no data in this regard could be fetched in case of South Africa for the period of 2000-2015.

6. Conclusion

Present Study divulges that the BRICS countries has played very vital role in global economy. However China was leading in the industrial production, agriculture, forestry, and animal husbandry. In comparison of other BRICS nations China was perform well in socio-economic development its GDP was highest in among the other BRICS countries i.e. Brazil, Russia, India, and South Africa.

The role of Brazil, Russia, India, China and South Africa (BRICS) as emerging protagonists in international development cooperation is significantly and rapidly changing. Over the last decade, BRICS have increased their financial as well as technical assistance and established distinct ways and means of economic cooperation, especially through south south-cooperation with Low Income Countries (LIC).

Over the last decade, BRICS have increased their financial as well as technical assistance and established distinct ways and means of economic cooperation with developing countries. The progressive relevance of BRICS in economic respects is not yet reflected in political respects, which is why BRICS are seeking change in the architecture of international (development) politics.

Increased globalization has meant that BRICS has become an important source of global growth and political influence. BRICS economies have grown rapidly with their share of global GDP rising from 11 per cent in 1990 to almost 30 per cent in 2014. BRICS account for over 40 per cent of the world population, hold over US\$4 trillion in reserves, and account for over 17 per cent of global trade.

Financial markets in the BRICS countries have similarly expanded in a rapid manner. For example, in the 20 years until 2010, Brazil's market capitalization increased from a very low 4 per cent of GDP to 74 per cent, India from 12 per cent to 93 per cent, Russia and China from almost zero to 70 per cent and 81 per cent, respectively. In South Africa, market capitalization has more than doubled from 123 per cent to 278 per cent. According to S&P Global Market Intelligence global bank rankings, banks from these five countries figured among the top 100 banks in the world, with the top 4 banks headquartered in China.

BRICS are not among the most prosperous countries according to per capita income. India has only recently moved from LIC to MIC status and all BRICS are facing serious disparity and poverty challenges themselves. However, through their strong economic dynamics as well as territorial and demographic dimensions BRICS are influencing global economic development to a great extent.

References

- Bell, Holly. A., "Status of the 'BRICS' : An Analysis of Growth Factors", *International Research Journal of Finance and Economics*, 69, 2011 (ISSN 1450-2887).
- BRICS, *BRICS Joint Statistical Publication*, Various Issues, Ministry of External Relations.
- European Parliament's Committee on Development, *The Role of BRICS in the Developing World*, Committee Report, Belgium, 2012.
- Govt. of India, Ministry of Finance, *The BRICS Report*, New Delhi : Oxford University Press, 2012.
- Griffith-Jones, Stephany, *A BRICS Development Bank : A Dream Coming True*, Geneva, Switzerland : UNCTAD, 2014.
- ILO, *BRICS and the ILO : An Overview*, Geneva, Switzerland : ILO, 2014.
- KPMG, *Think BRIC - Comparative Study*, UK, 2009.
- Mathur, Sajal & Dasgupta, Meghna, *BRICS: Trade Policies, Institutions and Areas of Deepening Cooperation*, New Delhi : IIFT, 2013.
- Mottet, Laetitia, *Cooperation and Competition among the BRICS Countries and Other Emerging Powers*, French Centre for Research on Contemporary China, 2013.
- Mminele, Daniel, *The Role of BRICS in the Global Economy*, Germany : Düsseldorf, 2016.
- Singh, P. Suresh & Dube, Memory, *BRICS and the World Order : A Beginner's Guide*, CUTS Centre for International Trade, 2011, 3.
- Varma, Aditi, *Is BRICS still the Growth Driver of the World*, Lucknow : IIM, 2011.
- Wilson, Dominic., Burgi, Constantin & Carlson, Stacy, "A Progress Report on the Building of the BRICS", *Brics Monthly*, Issue No. 11/07, 2011. ★

A Comparative Descriptions between Parent and Teacher on Character Strengths of Young Children (3-5 Years Old)

Hwang, Hea Ik* and Reena Park**

The purpose of this study was to compare descriptions of parents and teacher on character of young children. In total, 275 young children aged three to five years, attending childcare center and preschool in Korea. For comparing the descriptions between parents and teachers on character strengths of young children, we found the results of frequency analysis and chi-square test. The results are as follows; First, both parents and teachers described kindness with the highest frequency but the ranking is different. Second, there are significant differences on creativity, curiosity, love of learning, vitality, love, kindness, citizenship, leadership, humility, prudence, and self-regulation in descriptions between parents and teachers.

[**Keywords** : Character of young children, Character education for young children, Positive psychology]

1. Background/Objectives and Goals

In present, public school education emphasis character education to make the welfare of society. Character education is an effort to build virtues on people by developing personal character qualities. To develop personal character qualities, government has invented diversity of character education relevant to each area.

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Developing Character qualities is important to young children for happiness and growing happy person. According to positive psychology, well-being is a general term for the condition of an individual and it consists of five elements: positive emotion, engagement, positive relationship, meaning, accomplishment. The first step to have these elements is developing individual's characteristic (Seligman, 2002/2011). Especially, character strengths of hope, zest, love are associated with happiness among young children (Park and Peterson, 2006). That is, young children could have positive emotion, engagement, positive relationship, meaning, accomplishment, and happy when they are developing their character strengths. Positive emotions, although feeling, also have long-lasting consequences. From the perspective of the broaden-and-build theory, positive emotions are vehicle for individual growth and social connection: By building people's personal and social resources, positive emotions transform people for the better, giving them better lives in the future (Fredrickson, 2001). Thus, we need to develop character strengths for well-being. Also, early childhood is proper period to develop character qualities. The frontal lobe of the brain controls the function of humanity and morality. These frontal lobes grow very rapidly between the age of three and six. Moreover, the behavioral dispositions and habits formed in early childhood persist throughout one's life, for these reasons, we need to develop character strengths of very young children.

In Korea, the present studies investigate character qualities among children based on the classification of character strengths (Peterson and Seligman, 2004): For example, *An Analysis of Elementary School Students; character strengths and virtues as described by their parents* (Moon et al., 2008), *The Effects of Parent-Child Agreement Regarding Children's Character Strengths* (Park and Kim, 2015), *The Research on Character Strengths of Popular Child* (Kim et al., 2014), *The Influence of Children's Character Strength upon School Happiness* (In and Kim, 2012), and *Development and Validation of Korean Inventory of Character Strengths for Children* (Kim et al., 2015) have proceeded. However, there are no researches among very young children of characters in Korea.

Individual differences in some of the components of good character exist among even very young child (Park and Peterson, 2006). For understanding about their character qualities, we investigated character strengths among very young children (Park and Hwang, 2015). However, young children were needed adults such as parent and teacher, because they are not able to access their character strengths by themselves. So, we compared to descriptions of parents and teachers on character strengths between the age of three and five before developing character strengths scale for young children.

2. Methods

Respondents were a random sample of parents and teachers who provided basic demographic information and open-ended descriptions of their children or

students between the ages 3 to 5. Respondents were recruited from daycare centers and preschool in Korea. Following a brief demographic questions, the respondents were provided with the following instruction:

We are interested in your child’s personal characteristics and individual qualities. What can you tell us so that we might know your child well? Even small details are of interest. Please type your answer in the box below. An answer of at least several hundred of words would be most useful us, but you can write as much as you wish. Thank you! (Park and Peterson, 2006)

We obtained a couple of descriptions of 275 children from their parent and teacher. The results must obtain descriptions of both parent and teacher if not it would be deleted, so here we all of the data. Respondents first completed a brief demographic questionnaire. The results are shown in Table-1.

Table-1 : Sample characteristics of subjects(n=550)

| Respondent | N | % |
|-------------------|----------|----------|
| Parent | 275 | 50% |
| Teacher | 30 | 50% |
| Age of child | | |
| 3 years | 83 | 32.2 |
| 4 years | 97 | 35.3 |
| 5 years | 95 | 34.5 |
| Gender of child | | |
| Male | 123 | 44.7 |
| Female | 152 | 55.3 |

Written descriptions include total 3412 words, averaging 6.26 words from a parent and 6.15 words from a teacher.

The content of descriptions were coded in the classification of character strengths (Peterson and Seligman, 2004). Traits were not coded if they described healthy or appearance not characteristic, or if they were presented in a negative way. The character strength of curiosity was not only coded from mention of kindness but also from mention of interest, questions, novelty-seeking, attempt or openness to experience. The coding scheme was broadened to include behavioral trends that reflected the strength of interest (Park and Peterson, 2006). Parents and teachers rarely described young children as social or emotional intelligence, but they would say “he expresses herself well”, or “she has great empathy”. Diverse descriptions about character strengths were found in the process of coding descriptions. Whereas there was no description about fairness of young children (see Table-2).

Table-2 : Example of coding

| Character strength | Examples of descriptions |
|------------------------|---|
| Creativity | has a unique thinking, has rich imagination |
| Curiosity | has many questions, attempts to everything |
| Open-mindedness | is very sensible, see reason |
| Love of learning | has a strongly inquiring mind |
| Perspective | has a comprehensive understanding, has good powers of observation |
| Bravery | is courageous child, act from belief |
| Persistence | is very diligent, is good at waiting |
| Integrity | is very up-front, enjoy the confidence of her friends |
| Vitality | is very passionate, is enthusiastic about everything |
| Love | cherished family, show deep affection for sister |
| Kindness | likes helping people, has warm-heart. |
| Social intelligence | expresses herself well, has great empathy |
| Citizenship | is observant of rules, has strong sense of duty |
| Fairness | no description |
| Leadership | guide her friends, heads the play team |
| Forgiveness | has broad-minded, is always tolerant |
| Humility | respect people and their idea, Is very polite |
| Prudence | is considerate of other people, is watchful |
| Self-regulation | tries to do by herself, is good role models |
| Appreciation of beauty | keep the leaves precious, is deeply moved at music |
| Gratitude | always says thank you |
| Hope | thinks positively |
| Humor | always tries to make laugh |
| Spirituality | prays at every night |

We found the results of frequency analysis and chi-square test by SPSS 18.0 for comparing the descriptions between parents and teachers on character strengths of young children.

3. Results

In responses of parents and teachers about their children or students, both parents and teachers described kindness as young child's strength with the highest frequency. However, the ranking is different. Teachers wrote in turn, kindness, vitality, curiosity, citizenship, hope, and persistence while parents wrote kindness, curiosity, vitality, persistence, citizenship, and hope. That is, the difference was

emerged in the frequency of description between parents and teachers group. Especially, parents described the importance of spirituality, but teachers did not mention (see Table-3).

Table-3 : Character strengths of 3-5years old (n=275)

| Virtues | Character strengths | Parents | Teachers |
|----------------------|----------------------------|----------------|-----------------|
| Wisdom and Knowledge | Creativity | 90(16.4%) | 85(15.5%) |
| | Curiosity | 171(31.1%) | 146(26.5%) |
| | Open-mindedness | 15(2.7%) | 17(3.1%) |
| | Love of learning | 63(11.5%) | 51(9.3%) |
| | Perspective | 50(9.1%) | 29(5.3%) |
| Courage | Bravery | 40(7.3%) | 59(10.7%) |
| | Persistence | 138(25.1%) | 109(19.8%) |
| | Integrity | 93(16.9%) | 105(19.1%) |
| | Vitality | 157(28.5%) | 149(27.1%) |
| Humanity | Love | 19(3.5%) | 12(2.2%) |
| | Kindness | 178(32.4%) | 167(30.4%) |
| | Social intelligence | 94(17.1%) | 73(13.3%) |
| Justice | Citizenship | 124(22.5%) | 133(24.2%) |
| | Fairness | 0(0.0%) | 0(0.0%) |
| | Leadership | 36(6.5%) | 47(8.5%) |
| Temperance | Forgiveness | 7(1.3%) | 11(2.0%) |
| | Humility | 60(10.9%) | 88(16.0%) |
| | Prudence | 84(15.3%) | 88(16.0%) |
| | Self-regulation | 12(2.2%) | 21(3.8%) |
| Transcendence | Appreciation of beauty | 18(3.3%) | 16(2.9%) |
| | Gratitude | 52(9.5%) | 71(12.9%) |
| | Hope | 107(19.5%) | 122(22.2%) |
| | Humour | 87(15.8%) | 86(15.6%) |
| | Spirituality | 4(0.7%) | 0(0.0%) |
| Total | | 275(50%) | 275(50%) |

According to the results of chi-square test between the descriptions of parent and teacher on each child, there are significant differences on creativity, curiosity, love of learning, vitality, love, kindness, citizenship, leadership, humility, prudence, and self-regulation, while there are no significant difference on open-mindedness, perspective, bravery, persistence, integrity, social intelligence, forgiveness, appreciation of beauty, gratitude, hope, and humour (see Table-4).

Table-4 : Results of difference verification

| | | | Parents | | Total | 2 |
|------------------|---------|----------------|----------------|----------------|-----------------|----------|
| | | | No Description | Description | | |
| Creativity | Teacher | No description | 140 (73.7%) | 50 (26.3%) | 190 (100.0%) | 11.48*** |
| | | description | 45 (52.9%) | 40 (47.1%) | 85 (100.0%) | |
| | Total | | 185 (67.3%) | 90 (32.7%) | 275 (100.0%) | df = 1 |
| Curiosity | Teacher | No description | 61 (47.3%) | 68 (52.7%) | 129 (100.0%) | 9.264** |
| | | description | 43 (52.9%) | 103 (70.5%) | 146 (100.0%) | |
| | Total | | 104 (67.3%) | 171 (62.2%) | 275 (100.0%) | df = 1 |
| Open-mindedness | Teacher | No description | 244 (94.6%) | 14 (5.4%) | 258 (100.0%) | .006 |
| | | description | 16 (94.1%) | 1 (5.9%) | 17 (100.0%) | |
| | Total | | 260 (94.5%) | 15 (5.5%) | 275 (100.0%) | df = 1 |
| Love of learning | Teacher | No description | 179 (79.9%) | 45 (20.1%) | 224 (100.0%) | 5.44* |
| | | description | 33 (64.7%) | 18 (35.3%) | 51 (100.0%) | |
| | Total | | 212 (77.1%) | 63 (22.9%) | 275 (100.0%) | df = 1 |
| Perspective | Teacher | No description | 203 (82.5%) | 43 (17.5%) | 246 (100.0%) | .77 |
| | | description | 22 (75.9%) | 7 (24.1%) | 29 (100.0%) | |
| | Total | | 225 (81.8%) | 50 (18.2%) | 275 (100.0%) | df = 1 |
| Bravery | Teacher | No description | 185 (85.6%) | 31 (14.4%) | 216 (100.0%) | .03 |
| | | description | 50 (84.7%) | 9 (15.3%) | 59 (100.0%) | |
| | Total | | 235 (85.5%) | 40 (14.5%) | 275 (100.0%) | df = 1 |

| | | | | | | |
|---------------------|---------|----------------|----------------|----------------|-----------------|----------|
| Persistence | Teacher | No description | 84 (50.6%) | 82 (49.4%) | 166 (100.0%) | .10 |
| | | description | 53 (48.6%) | 56 (51.4%) | 109 (100.0%) | |
| | Total | | 137 (49.8%) | 138 (50.2%) | 275 (100.0%) | df =1 |
| Integrity | Teacher | No description | 117 (68.8%) | 53 (31.2%) | 170 (100.0%) | 1.39 |
| | | description | 65 (61.9%) | 40 (38.1%) | 105 (100.0%) | |
| | Total | | 182 (66.2%) | 93 (33.8%) | 275 (100.0%) | df =1 |
| Vitality | Teacher | No description | 68 (54.0%) | 58 (46.0%) | 126 (100.0%) | 11.61*** |
| | | description | 50 (33.6%) | 99 (66.4%) | 149 (100.0%) | |
| | Total | | 118 (42.9%) | 157 (57.1%) | 275 (100.0%) | df =1 |
| Love | Teacher | No description | 247 (93.9%) | 16 (6.1%) | 263 (100.0%) | 6.39* |
| | | description | 9 (75.0%) | 3 (25.0%) | 12 (100.0%) | |
| | Total | | 256 (93.1%) | 19 (6.9%) | 275 (100.0%) | df =1 |
| Kindness | Teacher | No description | 50 (46.3%) | 58 (53.7%) | 108 (100.0%) | 9.47** |
| | | description | 47 (28.1%) | 120 (71.9%) | 167 (100.0%) | |
| | Total | | 97 (35.3%) | 178 (64.7%) | 275 (100.0%) | df =1 |
| Social intelligence | Teacher | No description | 135 (66.8%) | 67 (33.2%) | 202 (100.0%) | .35 |
| | | description | 46 (63.0%) | 27 (37.0%) | 73 (100.0%) | |
| | Total | | 181 (65.8%) | 94 (34.2%) | 275 (100.0%) | df =1 |

| | | | | | | |
|-------------|---------|----------------|-----------------|----------------|-----------------|----------|
| Citizenship | Teacher | No description | 89 (62.7%) | 53 (37.3%) | 142 (100.0%) | 7.15** |
| | | description | 62 (46.6%) | 71 (53.4%) | 133 (100.0%) | |
| | Total | | 151 (54.9%) | 124 (45.1%) | 275 (100.0%) | df =1 |
| Fairness | Teacher | No description | 275 (100.0%) | 0 | 275 (100.0%) | .a |
| | | description | 0 | 0 | 0 | |
| | Total | | 275 (100.0%) | 0 | 275 (100.0%) | df =1 |
| Leadership | Teacher | No description | 205 (89.9%) | 23 (10.1%) | 228 (100.0%) | 10.58*** |
| | | description | 34 (72.3%) | 13 (27.7%) | 47 (100.0%) | |
| | Total | | 239 (86.9%) | 36 (13.1%) | 275 (100.0%) | df =1 |
| Forgiveness | Teacher | No description | 258 (97.7%) | 6 (2.3%) | 264 (100.0%) | 1.98 |
| | | description | 10 (90.9%) | 1 (9.1%) | 11 (100.0%) | |
| | Total | | 268 (97.5%) | 7 (2.5%) | 275 (100.0%) | df =1 |
| Humility | Teacher | No description | 153 (81.8%) | 34 (18.2%) | 187 (100.0%) | 4.53* |
| | | description | 62 (70.5%) | 26 (29.5%) | 88 (100.0%) | |
| | Total | | 215 (78.2%) | 60 (21.8%) | 275 (100.0%) | df =1 |
| Prudence | Teacher | No description | 141 (75.4%) | 46 (24.6%) | 187 (100.0%) | 9.74** |
| | | description | 50 (56.8%) | 38 (43.2%) | 88 (100.0%) | |
| | Total | | 191 (69.5%) | 84 (30.5%) | 275 (100.0%) | df =1 |

| | | | | | | |
|------------------------|---------|----------------|----------------|----------------|-----------------|-------|
| Self-regulation | Teacher | No description | 245 (96.5%) | 9 (3.5%) | 254 (100.0%) | 5.36* |
| | | description | 18 (85.7%) | 3 (14.3%) | 21 (100.0%) | |
| | Total | | 263 (95.6%) | 12 (4.4%) | 275 (100.0%) | df =1 |
| Appreciation of beauty | Teacher | No description | 243 (93.8%) | 16 (6.2%) | 259 (100.0%) | .99 |
| | | description | 14 (87.5%) | 2 (12.5%) | 16 (100.0%) | |
| | Total | | 257 (93.5%) | 18 (6.5%) | 275 (100.0%) | df =1 |
| Gratitude | Teacher | No description | 168 (82.4%) | 36 (17.6%) | 204 (100.0%) | .82 |
| | | description | 55 (77.5%) | 16 (22.5%) | 71 (100.0%) | |
| | Total | | 223 (81.1%) | 52 (18.9%) | 275 (100.0%) | df =1 |
| Hope | Teacher | No description | 99 (64.7%) | 54 (35.3%) | 153 (100.0%) | 1.90 |
| | | description | 69 (56.6%) | 53 (43.4%) | 122 (100.0%) | |
| | Total | | 168 (61.1%) | 107 (38.9%) | 275 (100.0%) | df =1 |
| Humor | Teacher | No description | 132 (69.8%) | 57 (30.2%) | 189 (100.0%) | .61 |
| | | description | 56 (65.1%) | 30 (34.9%) | 86 (100.0%) | |
| | Total | | 188 (68.4%) | 87 (31.6%) | 275 (100.0%) | df =1 |
| Spirituality | Teacher | No description | 271 (98.5%) | 4 (1.5%) | 275 (100.0%) | .a |
| | | description | 0 | 0 | 0 | |
| | Total | | 271 (98.5%) | 4 (1.5%) | 275 (100.0%) | df =1 |

In this study, we examined comparative difference between the descriptions of parents and teachers on each young child.

First, both parents and teachers did not describe fairness about young children's characteristic. In the study on character strengths of Korean child; 7-8 years (Moon et al., 2008), parents did not report fairness on their child, it was interpreted that parents did not have a chance to observe fairness about their child. However, this study examined descriptions of parents as well as teachers, so we inferred another reason. That is, finding fairness is difficult among young children. Fairness refers to considering everything that has effects on a situation (Lee and Kim, 2003), through distributive justice development theory (Damon, 1977), fairness is completed at last stage of the theory. Therefore it's difficult to find fairness on young children in self-centered period who do not consider others and external environments.

Second, Parents reported spirituality but teacher didn't. We interpreted that teacher could not have a chance or pay attention to find spirituality of their students, because curriculum and content of education were not included about spirituality contents.

Third, Parents and teachers, all described kindness as character strength of their child with highest frequency, they described kindness, vitality, curiosity, citizenship, hope, and persistence in common, although the ranking is different. From this, we could infer that it is not different the perceptions of parents and teachers on character strengths of young children. However, there were several differences about young child between descriptions of parent and teacher. Following researches about differences in an assessment between parent and teacher (Kang and Cho, 2008; Go and Hwang, 2013; Hwang, 2006; Hwang, 2008), it would be caused by several reasons. As the environments of family and daycare or preschool are different, there are many differences from opportunities of observation, behaviors of children, and expectations for children.

In this study, we examined the perceptions of parents and teachers about character strengths of young children, and the significant differences were found in descriptions between parents and teachers. Thus, we need integrated and diversified research about both parent's and teacher's perceptions for understanding to the character strengths of a child.

References

- Damon. W., *The Social World of the Child*, San Francisco : Jossey. Bass, 1977.
- Fredrickson, B. L., "The role of positive emotions in positive psychology: The broaden- and-build theory of positive emotions", *American Psychologist*, 56(3), 2001, 218-226.
- Hwang. Hye-Jung, "Agreement between Parents' and Teachers' Ratings of Preschoolers' Emotional and Behavioral Problems", *Korea Journal of Child Care and Education*, 45, 2006, 339-359.

- Hwang. Yoon-Se, "Relation between Children Creativity by Mother's and Teacher's Evaluation and Theory of Mind", *Korea Journal of Child Care and Education*, 53, 2008, 147-172.
- In, B. & Kim, I., "The influence of Children's Character strength upon School Happiness", *Journal of Wellness*, 7(1), 2012, 81-95.
- Kang. Hyun-Kyung., Cho. Hyung-Sook, "A Comparison between Parents' and Teachers' Ratings on Preschoolers' Behavioral Problems", *Early Childhood Education Research & Review*, 12(2), 2008, 171-193.
- Go. Hyun. & Hwang. Jeong-Ryeon, "Analysis of socialization for child's gender role perceived by kindergarten teacher and mother", *Korean Journal of Early Childhood Education*, 33(2), 2013, 213-236.
- Kim, K., Ha, Y., Kim, E., Kim, K., Han, S., Yang, G., "Development and Validation of Korean Inventory of Character Strengths for Children (KICS)", *The Journal of Elementary Education*, 28(1), 2015, 1-25.
- Kim, K., Park, J., Kim, E., "The Research on Character Strengths of Popular Child", *The Korean Journal of Elementary of Counseling*, 13(3), 2014, 331-347.
- Lee, E., Kim, Y., *Social Education for Young Children*, Seoul : Yangseuwon, 2003.
- Moon, Y., Won, H., Paek, S., Ahn, S., "An Analysis of Elementary School Students; Character Strengths and Virtues as Described by their Parents in Korea", *The Korean Journal of the human development*, 15(4), 2008, 17-35.
- Park, S. & Kim, J., "The Effects of Parent-Child Agreement Regarding Children's Character Strengths : Focusing on Children's Life Satisfaction, School-Adjustment, Self-Efficacy and Self-Esteem", *The Journal of the Korean Association of Psychotherapy*, 7(2), 2015, 69-87.
- Park, N., & Peterson, C., "Character strengths and happiness among young children : Content analysis of parental descriptions", *Journal of Happiness Studies*, 7(3), 2006, 323-341.
- Park, R., Hwang, H., "A study on the character of young children as perceived by parents and teachers", *The Journal of Eco Early Childhood Education & Care*, 14(3), 2015, 45-67.
- Peterson, C. & Seligman, M. E. P., *Character Strengths and Virtues : A Handbook and Classification*, New York : Oxford University Press; Washington DC : American Psychology Association, 2004.
- Seligman, M. E. P., *Authentic Happiness*, New York : Free Press, 2002.
- Seligman, Martin E. P., *Flourish : A Visionary New Understanding of Happiness and Well-being*, Sydney : William Heinemann, 2011. ★

Antimicrobial Property of Peach Leaves Against Washing

Sushma Rani* and Vivek Singh**

The Prunus persica L. Batsch (family Rosaceae) is a deciduous tree. Leaves and the bark of the Peach tree have been used by traditional herbalists to treat gastric and stomach irritations and abdominal tenderness, irritation or congestion. The Peach leaf extracts are also rich in purified glucans, which may protect against environmental toxins. Antimicrobial activity is being considered to be an important and inevitable property especially for cellulosic fabrics used in direct contact with human body. Antimicrobial textiles can improve functionality of textiles articles, especially garments, worn close to the skin. The plant extract containing active substances can be used effectively to make the textiles microbial resistance and to safeguard the fabric from damage by synthetic antimicrobial agents also. The effect of peach leaves extract treatment was tested against washing. Therefore, research on environment friendly antimicrobial agents based on natural products for textile application is gaining worldwide interest.

[**Keywords** : Antimicrobial activity, Microbes, Prunus persica, Textiles]

1. Introduction

The *Prunus persica L. Batsch* is a deciduous tree with lanceolate tapering leaves and pink flowers. In 19th century, cultivation of Peaches took place in India. Peach is the widely popular and delicious fruit, native to China, from where it spread to rest of the world and grown throughout the warm temperate regions.

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Peach is a temperate fruit rich in proteins, sugar, minerals and vitamins. Peach fruit have a broad range of nutrients vital for the healthy functioning of the body. It has a wealth of essential nutrients and antioxidants which are valuable in pregnancy and helps in strengthening the immune system.

Peach leaves were used by traditional herbalists for healing sores and wounds, treatment of coughs, bronchitis and abdominal disorders. Tea made from Peach leaves is good kidney cleanser. In Ayurveda, juice of Peach leaves is used for the treatment of worms. The bark and leaves of the Peach tree have been used to treat gastric and stomach irritations and abdominal tenderness and congestion. The extract is found to be useful for chronic diarrhoea, dysentery, and chronic hepatitis. Peach tree parts have reported for its useful medicinal properties like antioxidant anti-acetyl cholinesterase, anti-inflammatory, hypermenorrhoea, dysmenorrhoea, leiomyoma, infertility, anti-tumour promoter and anti-oketsu syndrome (stagnation of blood circulations), anthelmintic, laxative, sedative, antimalarial, anticoagulant, antifungal, and anti-allergic (Anonymous, 2015). The Peach leaf extract is rich in purified α -glucans, which may protect against environmental toxins and microbes.

Microorganisms can be found almost everywhere in the environment. For their growth and multiplication, the minimum nutritional requirements are water, a source of carbon, nitrogen and some inorganic salts. These are normally present in natural environment. Textiles by virtue of characteristics and proximity to human body provide an excellent medium for adherence, transfer and propagation of infection causing microbial species (Gupta and Bhaumik, 2007). Cotton fabric has been used for centuries due to its versatile nature such as absorption and comfort but it is susceptible to microbial growth (Gao and Craston, 2008). Therefore, it is very essential to finish all apparels by antimicrobial action to check the bacterial development on fabrics without abolishing desirable features of fabrics. These Antimicrobial treated fabrics are used in medicinal garments, carpets, napkins, sanitary, socks, disposable wipers. Lastly the use of antimicrobial finishing treatment to avoid bad smell in intimate apparel, underclothing, socks and sporty wear is a vital market requirement.

Most of the consumers are very conscious about our hygiene and cleanliness. Therefore, the demand of antimicrobial treated fabric is increasing. Climatic changes and increasing pollutants in the environment also necessitate the antimicrobial treated clothes to protect the body. Hence, there is a great demand for antimicrobial treatment based on non-toxic and eco-friendly bioactive compounds. Natural herbal products can be useful for antimicrobial treatments since there is a tremendous source of plant with antimicrobial composition to be effective in bringing out herbal antimicrobial treatments on textile. These herbal substances can also be used as renewable sources at household levels.

Although certain natural antimicrobial agents are available, Natural herbal products such as Peach tree extracts treatment can be used for anti-microbial

finishes since there is a tremendous source of medical plants with anti-microbial composition to be effective in bringing out herbal textiles.

Peach leaves extract has anti-microbial activity against various micro-organisms. Peach leaves is used to provide anti-bacterial effects when it is applied on bandages, surgical masks, gowns, apparel, nappies, and tampons and so on. The present study was conducted for the application of Peach leaves extract treatment with respect to washing on cotton fabric for microbial resistance with following specific objective :

- » To check the efficacy of antibacterial treatment against washing.

2. Materials and Methods

Two types of materials namely cotton woven fabric and leaves of Peach tree were procured. The cotton fabric in grey state was selected and preliminary data was taken. For better absorption of the extract i.e. desizing and scouring was done on the fabric. Peach tree (Shaan-E-Punjab) leaves were collected, washed, shade dried and grinded to make into a fine powder. Extract was prepared by cold aqueous maceration. Peach leaves extract was analyzed for yield percentage and antibacterial property at different concentrations. Application of treatment on desized and scoured cotton woven fabric was carried by exhaust method.

The efficacy of Peach leaves extract treatment against growth of cellulose degrading bacteria i.e. *Bacillus* spp. on washed samples with respect to their treated samples was analyzed. The samples were inoculated with *Bacillus* spp. separately. The percent reduction on 0 day soon after 24 hrs. of inoculation and also on 7th day, 14th day, 21st day and 28th day of inoculation was observed for both 107 and 108 dilution factors.

3. Results and Discussion

3-1 Efficacy of Peach Leaves Extract Treatment with respect to Washing

The data in Table-1 regarding efficacy of Peach leaves extract treatment against washing depicted that on 0 day, there was 100 percent reduction i.e. no bacterial growth was observed soon after 24 hrs. of inoculation of *Bacillus* spp. In washed fabric, on 7th day 84 percent reduction with 1.6×10^9 with mean CFUs for dilution factors 107 and 108 against 91 percent reduction with 9×10^8 mean CFUs in treated fabric. There was 78 percent reduction in growth of *Bacillus* spp. with 2.2×10^9 with mean CFUs for dilution factors 107 and 108 against 83 percent reduction with 1.7×10^9 mean CFUs in treated fabric on 14th day. There was 71 percent reduction with 2.9×10^9 mean CFUs for 107 and 108 dilution factors in washed fabric against 75 percent reduction with 2.5×10^9 mean CFUs in 107 and 108 dilution factors in treated fabric on 21th day. On 28th day 61 percent reduction with 3.9×10^9 with mean CFUs for dilution factors 107 and 108 in washed fabric against 65 percent reduction with 3.5×10^9 mean CFUs in treated fabric was observed.

The Peach leaves extract treated samples exhibited cent percent wash durability after 24 hours of inoculation in washed samples (one wash). After 24 hrs. it gradually decreased and on 28th day it reduced to 61%. Thus, there was continuous decrease in the antibacterial activity with an increase in incubation period after washing but even then the antibacterial treatment was actively retained in washed samples even on 28th day.

Table-1 : Efficacy of Peach leaves extract treatment with respect to washing at different incubation periods

| Cellulose degrading bacteria | Bacillus spp. | | | | | | | | | |
|------------------------------|----------------------------|--------|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 0 Day (soon after 24 hrs.) | | 7 th Day | | 14 th Day | | 21 th Day | | 28 th Day | |
| Incubation Period | Unwashed | Washed | Unwashed | Washed | Unwashed | Washed | Unwashed | Washed | Unwashed | Washed |
| Fabric | | | | | | | | | | |
| Colony count | 0 | 0 | 9 × 10 ⁸ | 1.6 × 10 ⁹ | 1.7 × 10 ⁹ | 2.2 × 10 ⁹ | 2.5 × 10 ⁹ | 2.9 × 10 ⁹ | 3.5 × 10 ⁹ | 3.9 × 10 ⁹ |
| Percent reduction (%) | 100 | 100 | 91 | 84 | 83 | 78 | 75 | 71 | 65 | 61 |
| Controlled | Confluent growth | | | | | | | | | |

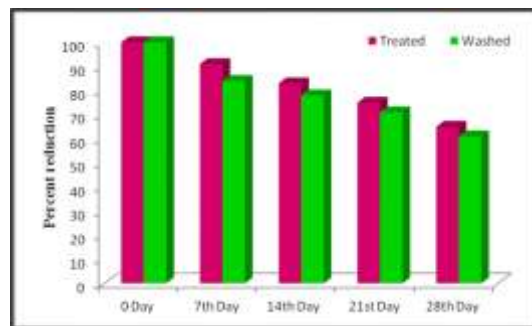


Fig. 1 : Efficacy of Peach leaves extract treatment with respect to washing at different incubation periods

The effectiveness of Peach leaves extract treatment against washing was assessed by bacterial colony count of *Bacillus* spp. after one wash. The treated washed samples were compared to treat unwashed samples. It was clearly noticed that as the incubation period increased the number of bacterial colonies also increased on the washed samples. The colony counts in washed samples were found to be much higher than the colony counts in unwashed samples. This may be due to washing away of treatment from the surface of the fabric. Sathianarayanan et al. (2010) reported in case of Tulsi extract treated fabric, in each wash cycle the

antibacterial activity decreases gradually and at the end of 15th wash cycle the percent reduction value reaches to 55 and 51.5 for gram-positive and gram-negative bacteria, respectively.



Plate 1 : Efficacy of Peach leaves extract treatment with respect to washing at different incubation periods

Similar results are reported by Hooda et al. (2013) where they assessed the efficacy of Aloe vera finish on scoured wool fabric after different number of washing cycles and found that on 20 washing cycles, percentage reduction value decreased to 78.13% and 82.81 % for scoured wool fabric treated with 3g/l and 5g/l Aloe vera extracts respectively.

4. Conclusion

The efficacy of Peach leaves extract treatment after washing was analyzed against growth of cellulose degrading bacteria i.e. *Bacillus* spp. There was decrease in percent reduction with an increase in incubation period. The percent reduction decreased continuously from 100% to 61% on 28th day.

References

- Anonymous, (2015) <http://www.organicfacts.net/health-benefits/fruit/health-benefits-of-peach.html>. Retrieved on 23.01.2016.
- Gao, Y. and Cranston, R., "Recent advances in antimicrobial treatments of textiles", *Textile Research Journal*, 78(1), 2008, 68-72.
- Gupta, D. and Bhaumik, S., "Antimicrobial treatments for textile", *Indian Journal of Fibre and Textile Research*, 32, 2007, 254-263.
- Hooda, S., Khambra, K., Yadav, N. and Sikka, V. K., "Antimicrobial activity of herbal treated wool fabric", *American International Journal of Research in Formal, Applied & Natural Sciences*, 3(1), 2013, 66-69.
- Sathianarayanan, M. P., Bhat, N.V., Kokate, S. S. and Walunj, V. E., "Antibacterial finish for cotton fabric from herbal products", *Indian Journal of Fiber & Textile Research*, 35(3), 2010, 50-58. ★

An Evaluative Study of Awareness Programme on Dairy Farming (APDF) in Indira Gandhi National Open University (IGNOU)

Bhanu Pratap Singh* and Amit Kumar Srivastava**

India is the largest producer of milk in the world, but productivity of livestock in India is still dismally low. To enhance the productivity of animals, breed improvement and better management practices are required. This is the reason that dairy farming is emerging in a big way in the recent years. Employment for inclusive and sustainable livelihoods in agriculture sectors are being offered by universities at national and international level and Indira Gandhi National Open University (IGNOU) is one of them. The present paper is an attempt to evaluate awareness programme on dairy farming (APDF) in Indira Gandhi National Open University (IGNOU). It has been concluded that the IGNOU is playing a vital role in fulfilling the dreams of society to provide quality education at the doorsteps of the learners by developing its distance education system. The learners of IGNOU are having very positive attitude towards awareness programme on dairy farming (APDF) in India.

[**Keywords** : Livestock, Dairy farming, Agricultural policy, Distance education mode]

1. Introduction

Before independence, the large majority of people were illiterate about global warming and climate change, global soil depletion, biodiversity loss and role of

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formal institutions, international and national institutions like WTO, WHO, FAO etc in monitoring and regulation of agricultural policy at national and international level. Therefore, in order to ensure awareness and education of agriculture and related field, distance education system capable of supplementing the role of conventional system has been evolved. In present, the programmes for skill development, employment for inclusive and sustainable livelihoods in agriculture sectors are being offered by universities at National and International level and Indira Gandhi National Open University (IGNOU) is one of them. The school of Agriculture (SOA) of IGNOU has developed total 20 Programmes ranges from Ph.D to certificate and non credit based programme, Awareness Programme on Dairy Farming (APDF) is one of non credit programme, which was developed in Collaboration with the Ministry of Rural Development (MoRD), Government of India. The programme imparts knowledge and technical proficiency in Dairy Farm Management Practices, Animal Healthcare, Fodder Production and Clean Milk Production etc. It also encourages entrepreneurship among the youth for self-employment.

In last seventy years India had made tremendous progress in the field of education, though mostly quantitative in nature. Before independence, education was available only to the elites in society, and a large majority of poor and marginalized people remained illiterate. Therefore, in order to insure access and education of a reasonably good quality, some alternative system capable of supplementing the role of conventional system and distance education is one of such alternatives. The distance education mode was adopted by many universities to meet the ever-growing demand of those students who lacked means to pursue higher education through the regular stream. Also, there were economic constraints. Consequently, many universities in India in various regions started correspondence courses or programs by providing notes. The success of these courses led to the establishment of Indira Gandhi National Open University, which is now rated as one of the best distance courses university in the world. The term Distance Education received a formal recognition in 1982 when the four decades old International Council for Correspondence Education was renamed as the International Council for Distance Education. The old concept of distance education was exclusively associated with print material, while the new concept of distance education include supplementary material being used through non-print media, also such as radio, television, computers, laptops, Cd's, through projectors, video lessons and satellites.

At present, there is 1300 Open and Distance Learning Institutions (ODLs) of different types and sizes located in 127 countries. The number of distance learners is approximately 100 million at the higher education level. It is expected to reach 120 million by 2025 A.D. (Dhanarajan 1996). In India, the Open and Distance Learning System (ODL) through IGNOU at the national level and 14 State Open Universities (SOUs) at the State levels has taken root in the country. This is in

addition to more than 300 Institutes/Directorates of Open and Distance Education located in the conventional system, which are also a part of the open learning system in India. The inherent flexibility of the system, particularly its potential to reach a large number of learners simultaneously with relevant Programmes, enables it to cater to the needs of a varied clientele. In the present time of era, the parents play important role as a guide or mentor to help their wards for choosing the course/programme of study. The present study is focused on the awareness of parents of ODL learners towards new trends of education like inclusion of ICT, Media and other new technology in Education. Since the ODL system in present time has emerged as a vibrant and dynamic component of Higher Education in the India. It provides access to quality education to about 24.7 percent of the total population of learners in Higher Education sector. Before independence, the large majority of people were illiterate about global warming and climate change, global soil depletion, biodiversity loss and Role of Formal institutions, International and National Institutions WTO, WHO, FAO etc in monitoring and regulation of Agricultural policy at national and international level. Therefore, in order to ensure awareness and education of Agriculture and related field, distance education system capable of supplementing the role of conventional system has been evolved. In present, the programmes for Skill Development, Employment for Inclusive and Sustainable Livelihoods in Agriculture sectors are being offered by universities at National and International level and Indira Gandhi National Open University(IGNOU) is one of them.

2. About Awareness Programme on Dairy Farming of IGNOU

The Awareness Programme on Dairy Farming (APDF) is non-credit based 2 months awareness programme in Dairy Farming and run by School of Agriculture (SOA) and was launch first time in Bihar State Co-operative Milk Producers' Federation Limited (COMPFED), Bihar and Rajasthan Cooperative Dairy Federation (RCDF), Rajasthan on pilot basis and enrolled 513 and 534 highest students respectively in 2006-07. The Course Duration is 2 Months, Course Fee is Rs. 1,100 and its Eligibility for admission does not required any formal qualification.

This non-credit programme was developed in Collaboration with the Ministry of Rural Development (MoRD), Government of India. The programme imparts knowledge and technical proficiency in Dairy Farm Management Practices, Animal Healthcare, Fodder Production and Clean Milk Production etc. It also encourages entrepreneurship among the youth for self-employment.

The main objective of the programme is to :

- » Imparting knowledge and technical proficiency in Dairy Farm Management Practices, Animal Healthcare, Fodder Production and Clean Milk Production.

- ▶ Development of the necessary human resource for dairy farming system on scientific lines and encouraging entrepreneurs among the youth for self-employment through Dairy Farming.

Module Details : The study materials have been developed in the form of 14 modules. The study material consists of small modules (15-20 pages each) about 14 in number on different aspects of dairy farming in a box. Only printed study materials are available in Hindi language. However, the translated study materials (soft copy) are available in - English, Telugu, Assamese and oria languages. Six Video films on the subject are also available for this programme.

The modules are :

| | |
|---|--|
| Introduction | Animal Housing and Shelter |
| Animal Breeding | Health Management |
| Reproduction | Animal Disease Prevention and Control |
| Calving and Calf Rearing | Disposal of Dung and Dairy Waste Materials |
| Animal Nutrition/Feed and Fodder Management | Dairy Farm Equipment |
| Milk Production | Dairy Farm Economics and Accounting and |
| Milk Testing, milk Handling and Storage | Role of different Agencies in Dairying Developments. |

Tentative Counselling Schedule : This programme has 16 counselling sessions (covering all 14 modules) normally organized during the weekends (Saturdays and Sundays) over a period of 2 months.

Pre-post-test questionnaire : Since it is a non-credit programme, and only participation certificate is issued from the school, formal evaluation component is not there. Instead, to evaluate the knowledge gained, a pre-test will be conducted on the first day of counselling and the same questionnaire will be used (post-test) on the final day of counselling. This file contains questions and answers for the use by study centre.

Feedback form : In order to improve the quality of the programme, a feedback form is attached to get the inputs from the learners/participants.

Practical facilities and academic counsellor : This gives the details about the practical facilities required at the study centre as well as the qualification of the academic counsellors for the programme. Since it is a non-credit programme, there are no specific course title or course codes in this programme. The counsellors can be empanelled as academic counsellors for the whole programme. The programme code is APDF and the study materials code (for getting from MPDD) is NEX-001.

Fee sharing Minutes of 18th School Board meeting SOA : Since it is a non-credit programme, there are no counselling norms available with the school.

The School has taken approval from its 18th School Board for 50:50 fee sharing between study/training centre and the university.

Application form and prospectus : There is no separate prospectus or application form for this programme.

The study centres can be identified in Veterinary university/dairy federation/ animal husbandry departments and where regular study centres running for related programmes like **Certificate in Poultry Farming (CPF), Diploma in Dairy Technology (DDT), Diploma in Meat Technology (DMT) and Diploma in Fish Products Technology (DFPT).**

The batches are arranged as given below :

1st Batch: January - February, 2nd Batch: April - May

3rd Batch: July - August, 4th Batch: October - November

There is one month off between each batch (March, June, September and December).

1 & 2 Batches are given January Enrolment Numbers.

3 & 4 Batches are given July Enrolment Numbers.

Qualification for Counsellors : Qualification for counsellors are B.V.Sc. & A.H./M.V.Sc./Ph. D./ B.Sc. (Animal/Dairy Science)/ M.Sc. (Animal/Dairy Science), B.Sc. (Agri.)/M.Sc. (Agri.)/Any graduate with experience in Dairy Management/ Farming.

Requirement for Conducting Practical Classes at Study Centres : The following facilities may be available or could be arranged for demonstration at nearby dairy farm and dairy society :

1. Artificial Insemination equipments
2. Dehorning equipments, Dehorning equipments
3. Deworming, Vaccination
4. Colostrum feeding equipments
5. Demonstration of various types of feeds and fodders available in the region
6. Clean Milk Production
7. Cooling of Milk
8. Milk Testing, Handling and Storage
9. Animal Housing and Shelter for various categories of dairy animals
10. Disposal of dung and waste materials
11. Milking Machine, Chaff cutter

3. Significance of the Study

Based on recent agricultural development of India, this is the most important and significant step for recognizing and strengthening of the Open and Distance

Education in our country. Today, it is the most need of the Governments to provide the education to all needy persons for making the “Well Human Capital” for growth and development of the nation. For this cater, Open and Distance Educational Universities and Institutions are leading majorly and alternatively to achieve the target. It is essential that Distance Learners are instructed, helped and trained to take up the access and use of multi-media services to their effective participating in the Open and Distance Education. It also helps the IGNOU learners to make the best achievement and well skills in all situations of the life. This Study also arouses keen interest in the researcher as he is an insider in the academics of the IGNOU handling its educational programmes. The present study, therefore, shall be more authentic and realistic in its findings, conclusions and suggestion. Also, it is being helpful to the society to make aware about open and distance learning, its programme and its functioning. The school of Agriculture (SOA) of IGNOU has developed total 20 Programmes ranges from Ph.D to certificate and non credit based programme, Awareness Programme on Dairy Farming (APDF) is one of non credit programme, which was developed in Collaboration with the Ministry of Rural Development (MoRD), Government of India. The programme imparts knowledge and technical proficiency in Dairy Farm Management Practices, Animal Healthcare, Fodder Production and Clean Milk Production etc. It also encourages entrepreneurship among the youth for self-employment.

4. Objectives of Study

1. To Study the enrolment trend of awareness programme on dairy farming (APDF) offered by IGNOU in India.
2. To study of attitude of students towards the awareness programme on dairy farming (APDF) offered by IGNOU.

5. Research Methodology

5.1 Sampling

Sampling is the selection of research sample for the research purpose. The sample of study has been consisting of learners registered at Study Centres under the jurisdiction of Indira Gandhi National Open University, Regional Centre, Aligarh, Uttar Pradesh. The data was collected from the Regional Centre Aligarh. Due to time & resource constraints researchers could collect 35 responses studying in ADPF programme of IGNOU study centre-47042 Saahaj Milk Production Limited, Aligarh under Regional Centre Aligarh.

5.2 Tool

Total 06 items of Questionnaire of Awareness towards Open & Distance Education and use of Multi-Media were related to six (06) parameters. The six parameters are :

- Modules of Awareness Programme on Dairy Farming (APDF)
- Academic contents of Awareness Programme on Dairy Farming (APDF)
- Practical classes of Awareness Programme on Dairy Farming (APDF)
- Theory Counselling session of Awareness Programme on Dairy Farming (APDF)
- Pre-test of Awareness Programme on Dairy Farming (APDF)
- post-test as a learning outcome of Awareness Programme on Dairy Farming (APDF)

The test items was based on rating scale of five point i.e. Strongly-agree, Agree, Disagree, Strongly -disagree, Neutral.

5.3 Statistical Technique Used

The following statistical techniques are used for analysis of data: Mean value, Standard Deviation (S.D) and 'T' value with graphical representation are used to as statistical techniques for analysis and interpretation.

6. Data Analysis and Interpretation

Analysis and interpretation of data dealt with analysis of the raw scores with the help of statistical techniques, organization of analyzed data in tabular form and discussion or interpretation of the result. In the present study an attempt has been made to present the findings of the study objective wise. For it validation of hypothesis has been presented, hypothesis wise, on the basis of it conclusion have been made and presented in the study.

Objective-1 : To study the enrolment trend of Awareness Programme on Dairy Farming (APDF) offered by IGNOU in India. Based upon the above objective, the data has been collected from School of Agriculture, IGNOU New Delhi and analyzed.

Table-1 : Enrolment data of Awareness Programme on Dairy Farming (APDF) from 2006 to till date:

| S. No. | Venue | Session/Period | Enrolments |
|--------|--|--------------------------|------------|
| 1. | Bihar State Co-operative Milk Producers' Federation Limited (COMPFED), Bihar | 2006-2007 | 513 |
| 2. | Rajasthan Cooperative Dairy Federation (RCDF), Rajasthan | 2006-2007 | 534 |
| 3. | Farmers Training Centre, Ranchi, Jharkhand | 2012-13 | 150 |
| 4. | Ayurved Research Foundation, Sonapat, Haryana | 14-05-2012 to 14-07-2012 | 11 |
| 5. | Ayurved Research Foundation, Sonapat, Haryana | 25-08-2012 to 25-10-2012 | 9 |

| | | | |
|-----|--|--------------------------|-----|
| 6. | Ayurved Research Foundation, Sonapat, Haryana | 01-04-2013 to 31-05-2013 | 14 |
| 7. | Ayurved Research Foundation, Sonapat, Haryana | 01-08-2013 to 31-10-2013 | 12 |
| 8. | Ayurved Research Foundation, Sonapat, Haryana | 01-12-2013 to 28-04-2014 | 24 |
| 9. | MP State Livestock and Poultry Development Corporation, Bhopal, MP | January 2014 session | 152 |
| 10. | Ayurved Research Foundation, Sonapat, Haryana | 01-04-2014 to 30-06-2014 | 21 |
| 11. | MP State Livestock and Poultry Development Corporation, Bhopal, MP | July 2014 session | 45 |
| 12. | MP State Livestock and Poultry Development Corporation, Bhopal, MP | January 2015 session | 279 |
| 13. | Visakha Dairy, Vishakhapatnam, Andhra Pradesh | 03-01-2015 to 22-02-2015 | 25 |
| 14. | Visakha Dairy, Vishakhapatnam, Andhra Pradesh | 04-04-2015 to 24-05-2015 | 25 |
| 15. | MP State Livestock and Poultry Development Corporation, Bhopal, MP | July 2015 session | 11 |
| 16. | Ayurved Research Foundation, Sonapat, Haryana | 04-07-2015 to 23-08-2015 | 46 |
| 17. | Visakha Dairy, Vishakhapatnam, Andhra Pradesh | 04-07-2015 to 29-08-2015 | 25 |
| 18. | Ayurved Research Foundation, Sonapat, Haryana | 01-10-2015 to 30-11-2015 | 24 |
| 19. | Visakha Dairy, Vishakhapatnam, Andhra Pradesh | 03-10-2015 to 29-11-2015 | 25 |
| 20. | Visakha Dairy, Vishakhapatnam, Andhra Pradesh | 02-01-2016 to 28-02-2016 | 15 |
| 21. | Visakha Dairy, Vishakhapatnam, Andhra Pradesh | 02-04-2016 to 29-05-2016 | 17 |
| 22. | MP State Livestock and Poultry Development Corporation, Bhopal, MP | July 2016 session | 8 |
| 23. | Visakha Dairy, Vishakhapatnam, Andhra Pradesh | 02-07-2016 to 28-08-2016 | 23 |
| 24. | Ayurved Research Foundation, Sonapat, Haryana | 04-08-2016 to 03-10-2016 | 17 |
| 25. | Ayurved Research Foundation, Sonapat, Haryana | 26-09-2016 to 25-11-2016 | 15 |
| 26. | Visakha Dairy, Vishakhapatnam, Andhra Pradesh | 01-10-2016 to 20-11-2016 | 27 |

| | | | |
|------|--|--------------------------|----|
| 27. | MP State Livestock and Poultry Development Corporation, Bhopal, MP | January 2017 session | 35 |
| 28. | Saahaj Dairy, Aligarh, UP | January 2017 session | 28 |
| 29.. | Visakha Dairy, Vishakhapatnam, Andhra Pradesh | 07-01-2017 to 05-03-2017 | 20 |
| 30. | Visakha Dairy, Vishakhapatnam, Andhra Pradesh | 08-04-2017 to 28-05-2017 | 26 |
| 31. | Ayurvet Research Foundation, Sonapat, Haryana | 02-02-2017 to 01-04-2017 | 4 |
| 32. | Visakha Dairy, Vishakhapatnam, Andhra Pradesh | July 2017 session | 51 |
| 33. | Saahaj Dairy, Aligarh, UP | July 2017 session | 7 |

Based on above data, the analysis given in the below table :

Table-2 : Year/Session wise Number of Student enrolled in ADPF Programme

| Year/Session | No of Student enrolled in ADPF Programme |
|--------------|--|
| 2006-07 | 1047 |
| 2012-13 | 196 |
| 2013-14 | 197 |
| 2014-15 | 374 |
| 2015-16 | 171 |
| 2016-17 | 253 |
| Total | 2238 |

The graphical interpretation of above results may be represented as given below :

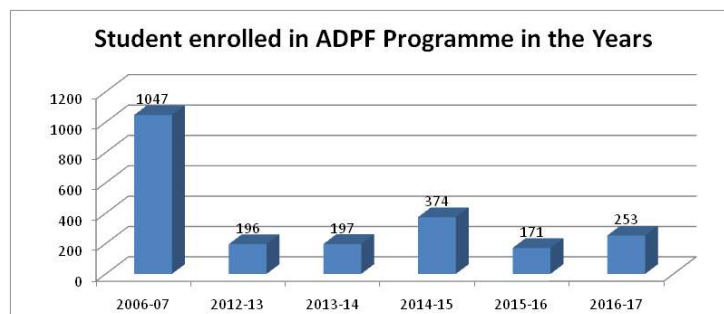


Figure-1

As per above data and graphical interpretation, the following result may be concluded :

1. As per the above table, it is found that in initial stage the maximum numbers of 1047 students enrolled in Bihar (513) and Rajasthan (534) in the year of 2006-07.

2. As per the above table, it is found that the minimum numbers of 171 students enrolled in the year of 2006-07.
3. As per the above table, it is found that total 2238 learners have been enrolled in ADPF programme. It can be assumed that at least 2238 families are being trained or skilled in Dairy Farming sectors through Open and Distance Learning (ODL) System.
4. It is remarkable that near to 46.78% learners were enrolled in 2006-07 only.

Objective-2 : To Study of attitude of students towards the Awareness Programme on Dairy Farming (APDF) offered by IGNOU.

The data by using Questionnaire containing 06 items on attitude towards Awareness Programme on Dairy Farming (APDF) has been collected from 35 learners with the help of Programme Incharge of IGNOU SC-47042P Saahaj Milk Production Limited, Aligarh. The Questionnaire containing 06 items on attitude towards Awareness Programme on Dairy Farming (APDF) above discussed six parameters.

The test items was based on rating scale of five point i.e. Strongly-agree, Agree, Disagree, Strongly -disagree, Neutral. Based upon the above objective, the data collected is framed in the table and analyzed as given below :

Table-3 : Attitude of students towards the Awareness Programme on Dairy Farming (APDF) offered by IGNOU

| S. No. | Statements | Attitude of Students | | | | | | | | | |
|--------|---|----------------------|-------|-------|-------|---------|-------|----------|-------|-------------------|-------|
| | | Strongly Agree | % | Agree | % | Average | % | Disagree | % | Strongly Disagree | % |
| 1. | The all 14 Modules of APDF address desired/ expected knowledge and training about the course/programme | 16 | 45.72 | 17 | 48.57 | 2 | 05.71 | | | | |
| 2. | The Academic contents of APDF are as per the syllabus of programme | 14 | 40.00 | 16 | 45.72 | 2 | 05.71 | 2 | 05.71 | 1 | 02.86 |
| 3. | Practical classes of APDF contains all desired/ expected field based practice opportunities and knowledge | 16 | 45.72 | 13 | 37.14 | 3 | 08.57 | 1 | 02.86 | 2 | 05.71 |
| 4. | Theory Counselling session of APDF contains all desired/ expected theoretical/ practical knowledge | 15 | 42.85 | 16 | 45.72 | 1 | 02.86 | 2 | 05.71 | 1 | 02.86 |

| | | | | | | | | | | | |
|---|--|----|-------|----|-------|---|-------|---|-------|---|-------|
| 5. | Pre-test of APDF gives the road map of the programme and access the previous knowledge of learner | 14 | 40.00 | 15 | 42.85 | 3 | 08.57 | 1 | 02.86 | 2 | 05.71 |
| 6. | Post-test as a learning outcome of APDF is a learning outcome of the programme and evaluate the overall performance of the learner | 17 | 48.57 | 14 | 40.00 | 2 | 05.71 | 1 | 02.86 | 1 | 02.86 |
| Average Percentage of Attitude of Learners in respect of APDF | | | 43.81 | | 43.33 | | 6.19 | | 3.33 | | 3.33 |

The investigator has tried to examine the extent of attitude of Distance learners enrolled in APDF programme towards the Awareness Programme on Dairy Farming (APDF) offered by IGNOU. The following observations are made based on responses:

1. The 45.72% learners of IGNOU were strongly agreed, 48.57% learners of IGNOU agreed that all 14 Modules of Awareness Programme on Dairy Farming (APDF) address desired/expected knowledge and training about the course/ programme. 05.71.34% learners of IGNOU were averagely agreed with the statement. No student was disagreed and strongly disagreed with the statement.
2. The 40.00% learners of IGNOU were strongly agreed, 45.72% learners of IGNOU agreed that the Academic contents of Awareness Programme on Dairy Farming (APDF) are as per the syllabus of programme. 05.71% learners of IGNOU were averagely agreed with the statement. Only 05.71% learners of IGNOU were disagreed and 02.86% strongly disagreed with the statement.
3. The 45.72% learners of IGNOU were strongly agreed, 37.14% learners of IGNOU agreed that Practical classes of Awareness Programme on Dairy Farming (APDF) contains all desired/ expected field based practice opportunities and knowledge. 08.57% learners of IGNOU were averagely agreed with the statement. Only 02.86% learners of IGNOU were disagreed and 05.71% strongly disagreed with the statement.
4. The 42.85% learners of IGNOU were strongly agreed, 45.72% learners of IGNOU agreed that Theory Counselling session of Awareness Programme on Dairy Farming (APDF) contains all desired/ expected theoretical/practical knowledge. 02.86% learners of IGNOU were averagely agreed with the statement. Only Theory Counselling session of Awareness Programme on Dairy Farming (APDF) contains all desired/expected theoretical/practical knowledge. Only 05.71% learners of IGNOU were disagreed and 02.86% strongly disagreed with the statement.

5. The 44.00% learners of IGNOU were strongly agreed, 42.85% learners of IGNOU agreed that Pre-test of Awareness Programme on Dairy Farming (APDF) gives the road map of the programme and access the previous knowledge of learner. 08.57% learners of IGNOU were averagely agreed with the statement. Only 02.86% learners of IGNOU were disagreed and 05.71% strongly disagreed with the statement.
6. The 45.57% learners of IGNOU were strongly agreed, 40.00% learners of IGNOU agreed that post-test as a learning outcome of Awareness Programme on Dairy Farming (APDF) is a learning outcome of the programme and evaluate the overall performance of the learner. 05.71% learners of IGNOU were averagely agreed with the statement. Only 02.86% learners of IGNOU were disagreed and 02.86% strongly disagreed with the statement.

Based on above analysis the opinions of researchers by interpretation of above results concludes that

1. It is clearly shows 94.29% learners of IGNOU were more or less agreed and only 05.71% learners of IGNOU were found average that all 14 Modules of Awareness Programme on Dairy Farming (APDF) address desired/expected knowledge and training about the course/ programme.
2. It is clearly shows 97.04% learners of IGNOU were more or less agreed and only 02.96% learners of IGNOU were found more or less disagreed that the Academic contents of Awareness Programme on Dairy Farming (APDF) are as per the syllabus of programme..
3. It is clearly shows 91.43% learners of IGNOU were more or less agreed and only 08.57% learners of IGNOU were found more or less disagreed that Practical classes of Awareness Programme on Dairy Farming (APDF) contains all desired/ expected field based practice opportunities and knowledge.
4. It is clearly shows 91.43% learners of IGNOU were more or less agreed and only 08.57% learners of IGNOU were found more or less disagreed that Theory Counselling session of Awareness Programme on Dairy Farming (APDF) contains all desired/expected theoretical/practical knowledge.
5. It is clearly shows 91.42% learners of IGNOU were more or less agreed and only 08.58% learners of IGNOU were found more or less disagreed that Pre-test of Awareness Programme on Dairy Farming (APDF) gives the road map of the programme and access the previous knowledge of learner.
6. It is clearly shows 94.28% learners of IGNOU were more or less agreed and only 05.72% learners of IGNOU were found more or less dis-agreed that post-test as a learning outcome of Awareness Programme on Dairy Farming (APDF) is a learning outcome of the programme and evaluate the overall performance of the learner.

The result may also be represented graphically as under :

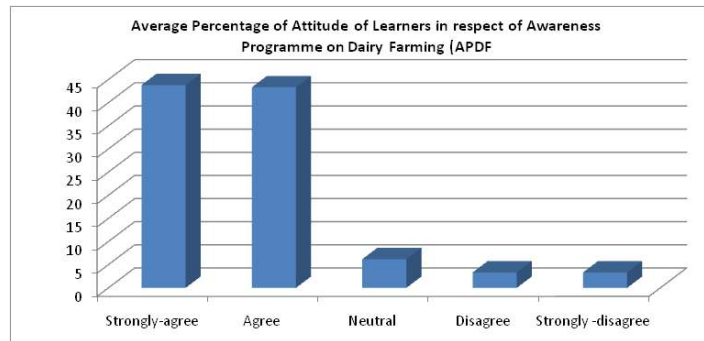


Figure-2

As per data, the learners of IGNOU are having positive attitude, 94.29% learners of IGNOU were more or less agreed all 14 Modules of Awareness Programme on Dairy Farming (APDF) address desired/expected knowledge and training about the course/ programme.97.04% learners of IGNOU were more or less agreed that the Academic contents of Awareness Programme on Dairy Farming (APDF) are as per the syllabus of programme.91.43% learners of IGNOU were more or less agreed that Practical classes of Awareness Programme on Dairy Farming (APDF) contains all desired/ expected field based practice opportunities and knowledge. 91.43% learners of IGNOU were more or less agreed that Theory Counselling session of Awareness Programme on Dairy Farming (APDF)contains all desired/ expected theoretical/practical knowledge.91.42% learners of IGNOU were more or less agreed that Pre-test of Awareness Programme on Dairy Farming (APDF) gives the road map of the programme and access the previous knowledge of learner.94.28% learners of IGNOU were more or less agreed that post-test as a learning outcome of Awareness Programme on Dairy Farming (APDF) is a learning outcome of the programme and evaluate the overall performance of the learner.

7. Conclusion

Through this painstaking Research Survey the Investigator has come to the conclusion that IGNOU is fulfilling the purpose of their establishment. The learners of IGNOU are having very positive attitude towards Awareness Programme on Dairy Farming (APDF) offered by IGNOU in India. The Awareness Programme on Dairy Farming (APDF) was launched first time in Bihar State Co-operative Milk Producers' Federation Limited (COMPFED), Bihar and Rajasthan Cooperative Dairy Federation (RCDF), Rajasthan on pilot basis and enrolled 513 and 534 highest students respectively in 2006-07. As per data, the learners of IGNOU are having positive attitude, 94.29% learners of IGNOU were more or less agreed all 14 Modules of Awareness Programme on Dairy Farming (APDF)address desired/expected knowledge and training about the course/ programme. 97.04% learners of IGNOU were more or less agreed that the Academic contents of Awareness Programme on Dairy Farming (APDF) are as per

the syllabus of programme.91.43% learners of IGNOU were more or less agreed that Practical classes of Awareness Programme on Dairy Farming (APDF) contains all desired/ expected field based practice opportunities and knowledge. 91.43% learners of IGNOU were more or less agreed that Theory Counselling session of Awareness Programme on Dairy Farming (APDF) contains all desired/ expected theoretical/practical knowledge.91.42% learners of IGNOU were more or less agreed that Pre-test of Awareness Programme on Dairy Farming (APDF) gives the road map of the programme and access the previous knowledge of learner.94.28% learners of IGNOU were more or less agreed that post-test as a learning outcome of Awareness Programme on Dairy Farming (APDF) is a learning outcome of the programme and evaluate the overall performance of the learner. As per the above table, it is found that in initial stage the maximum numbers of 1047 students enrolled in Bihar (513) and Rajasthan (534) in the year of 2006-07. As per the above table, it is found that the minimum numbers of 171 students enrolled in the year of 2006-07. It is also found that total 2238 learners have been enrolled in ADPF programme. It can be assumed that at least 2238 families are being trained or skilled in Dairy Farming sectors through Open and Distance Learning (ODL) System. It is remarkable that near to 46.78% learners were enrolled in 2006-07 only. Thus, we conclude that the IGNOU is playing a vital role in fulfilling the dreams of Society to provide quality education at the doorsteps of the learners by developing its distance education system.

References

- Dhanarajan,G., *Perspectives on open and distance learning : Open Educational Resources: An Asian perspective*, Vancouver : COL and OER Asia, 2013.
- CRK Murthy, “Programmes for professional Development in Distance Education: Perception and view of International students”, *IJOL*, March 2003, 13, 2004, 283-291.
- C. Villi, (2003): “Study on knowledge, attitude perception & expectations (KAPE) of women learners of open university”, *IJOL*, 12(i), 2003, 95-100.
- David Olugbenga Ojoand Felix Kayode Olakulehin, “Attitudes and Perceptions of Students to Open and Distance Learning in Nigeria”, *The International Review of Research in Open and Distance Learning*, 7(1), 2006.
- IGNOU, *Common Prospectus 2017*, IGNOU, Maidan Garhi, New Delhi : IGNOU.
- IGNOU, *Primary Data Source, School of Agriculture (SOA)*, IGNOU, Maidan Garhi, New Delhi : IGNOU.
- Manashee Gogoi and Mukut Hazarika, “Awareness and attitude of the college Students towards Open and Distance Learning”, *Journal of All India Association for Educational Research*, 21(2), 2009, 61-65.
- Santosh Panda and Sanjaya Mishra, “E-Learning in a Mega Open University: Faculty attitude, Barriers and Motivators”, *Educational Media International*, 44(4), December 2007, 323-338. ★

Role of Panchayati Raj Institutions (PRIs) in Rural Development of Uttarakhand

Rajesh Chandra Paliwal*

Overall development of country is the main objective of Indian government since its independence. In the earlier Plans the main thrust for development was laid on Agriculture, Industry, Communication, Education, Health and Allied sectors but soon it was realized that the all-round development of the country is possible only through the development of rural India. Keeping this in view, Panchayati Raj Institutions have been introduced under the 73rd Amendment Act of the Constitution of India in 1992. Rural Development includes measures to strengthen the democratic structure of society through the Panchayati Raj Institutions (PRIs). It also includes measures to improve the rural infrastructure, improve income of rural households and delivery systems pertaining to education, health & safety mechanisms. The Panchayats are expected to play an important role in rural development in India, particularly after independence. Plan documents of both the central and state governments and various committees have emphasized the importance of these bodies in the polity. The present paper is an attempt to evaluate the role of role of panchayati raj institutions (PRIs) in rural development of Uttarakhand. It has been shown that the government in spite of providing huge amount of funds remains unsuccessful in fostering the growth of rural India. There is a need to keep a strict watch over the utilization of fund by Gram Panchayat.

[Keywords : Rural development, Panchayati raj institutions, Planning, Local government]

Rural development in a predominantly agrarian country like India is sine qua non, of national development. India, even after six decades of development efforts,

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has essentially a rural-oriented economy with 74 per cent of its population living in its villages. However the share of rural sector in national income is less than 45%. Rural economy is characterized by low income levels, unemployment, poor quality of life and weak human capital base. Mahatama Gandhi rightly observed : “India cannot rise to her full potential without revitalization of rural India.” Rural development can arrest the pace of rural migration to urban areas and in an open globalised and liberalized economy it could work as a shock absorber for the national economy as was observed during global meltdown. Rural development was badly effected during structural adjustment due to incompetence and vulnerability of rural economy in the face of stiff competition. It is in this context that rural development came centre stage of national planning. However, sustainable rural development requires a strong rural local government to ensure participation and decision making by its own people. In the first five year plan when the need for more participation of local people and involvement of locally elected bodies was most felt it was said, “only a village organization representing the community as a whole can provide the necessary leadership”. Article 40 in Para iv of the constitution of India states that “The state shall take steps to organize village panchayats and endow them such powers and authority as may be necessary to enable them to function as a unit of self-government.” In the initial years of planned development community development programme and National Extension services were started but this experience was failed due to lack of participation and apathy of rural people in programmes bureaucratically oriented in nature. It is therefore that on the recommendation of Balwant Rai Mehta committee (1957) the three tier system of PRI - Gram sabha and gram panchayat at the village level, panchayat samiti at the block level and the Zila parishad at the district level in which panchayat samiti was like a pivot around which planning and development of the rural area was to develop, came into existence .The 73rd amendment of the constitution in 1992 with a view to grant a constitutional status to PRIs and to bring about uniformity envisages the establishment the three tier system of panchayats as a unit of local self govt in all states and union territories, making constitution of gram sabha as mandatory, reservation of seats for SC/ST and women, panchayat elections to be held regularly and constitution of state finance commission and district planning committees. The govt. of India observed the year 1999-2000 as the year of Gram sabha as recognition of Gram sabha potentially the most decentralized agency. The relationship between the Gram sabha and Gram panchayat is the same as between the legislature and government. It was conceived that the comprehensive development of villages is possible through the success of panchayats and therefore PRIs have to work in close cooperation with each other and all social and economic activities of the village are to be governed through panchayats.

Panchayats have been the backbone of Indian villages since the beginning of the recorded history. Mahatma Gandhi, the father of nation and staunch advocate

of 'Gram Swaraj' rightly observed, "Power resides in the people, they can use it any time.....A society must be built in which every village has to be self sustained and capable of managing its own affairs."

Similarly, rural development has been a key objective in Indian planning from its inception in 1950-51 when first five year plan was implemented however its sub objectives like rural employment generation and poverty alleviation were coined in later years. It is at this time that the need of local participation and local self govt. were greatly felt. During the first five year plan community development programme and National Extension Service was implemented to give the opportunity for public participation at community level however it could not achieve its desired objective. Balwant Rai Mehta committee (1957) who examined the community development programme recommended the three tier system of panchayati raj and emphasized for effective administrative decentralization and suggested that this system should be under the control of elected bodies.

Ashok Mehta Committee (1978) recommend for district level decentralization but under popular supervision. Consequently with the disbursement of central assistance to the states on Gadgil formula the process of decentralized planning was commenced in India. Dr.G.V.K. Rao committee (1980) suggested for the 'village planning Forum' which could be constituted to facilitate in improving the local level planning.

The Patel Committee (1992) set up by National Development Council also emphasized on decentralization of funds and power and recommended on micro planning with the active involvement of rural people. Panchayati Raj Act was passed in parliament in Dec.1992 which is recognized as the major milestone in the history of local self government in India. Following the recommendations of L.M. Singhvie committee, constitutional provisions, relating to the establishment, powers, functions and responsibilities of the panchayats have been introduced through the 73rd amendment in 1993 which compelled the state govt. to hold elections after every five years through general elections and follow the mandatory provisions in respect of reservation of seats. In addition the panchayats have been made accountable to its electorate through the forum of Gram sabha in respect of every action. It is worthwhile to mention here that while state govt. are expected to devolve all powers and authority as listed in XIth schedule to panchayats, the primary responsibility of local level of planning has been bestowed upon the panchayats.

The first decade after 73rd amendment did not witness remarkable initiatives by central and state departments and panchayats were mostly viewed as the extension counters of the Block development offices. (ibid) Government of India created a separate ministry of panchayati Raj with an objective of primarily overseeing the implementation of part IX of the constitution. Subsequently the newly formed ministry organized seven round table discussions throughout the country and resolved the matters relating to the scope and future of panchayati Raj.

Despite many deficiencies in their working PRIs has a strong base in India with the elected representatives of 233251 village panchayats, 6105 taluq panchayats and 539 Zila panchayats building the true foundation of Indian democracy. Panchayats as they exist today are legal bodies duly authorized for planning and administration. The basic purpose of their working is to change the system of governance. Now the PRI are at the core of decentralized development process, involved in every poverty alleviation programme and has a great role to play in micro planning for rapid socio-economic progress in rural areas with their mass participation making the development as sustainable.

The State of Uttaranchal was created on 9th November 2000 by combining the districts of Uttarkashi, Chamoli, Rudrapur, Pauri, Tehri, Dehradun, Pithoragarh, Champawat, Nainital, Almora, Bageshwar, Hardwar and Udham Singh Nagar. The districts have been grouped into two distinct divisions on the basis of homogeneity, contiguity and socio-cultural affinity. These are the Garhwal Division and the Kumaon Division. Uttarakhand has a population of 1,00,86,292 and rural population is 70,36,954. The state has 13 districts, 49 tehsils, 95 blocks, 670 nayaya panchayat and 7555 Gram Panchayat. The Largest District is Pauri where 15 Block, 49 ward Zila Panchayat, 432 Chetra Panchayat, 6924 ward Gram Panchayat and 1222 of Gram Panchayat. and 16,414 villages with about 78% of the population of the state living in rural areas. About 36% of the state's population is younger than 15 years and only 5% is aged 65 or above. The overall literacy rate is as high as 72%. The state, being a hilly one, is the most sparsely populated state in the country with a population density of 159 per sq. kms. The poor road connectivity, difficult hilly terrain (93% of area in hills), small scattered settlements lack of infrastructure and human power contribute to problems of access to health service delivery. Given the poor paying capacity and scattered location of settlements in hilly districts, the population is almost entirely dependent on the public health delivery system while the presence of the private sector tends to be concentrated in the plains.

Table shows the details picture of Uttarakhand panchayat :

Table-1 : District wise Ward Information of Gram Panchayat, Chetra Panchayat and Zila Panchayat In Uttarakhand

| Sr. No. | District Code | Name of District | No. of Block | No. of ward Zila Panchayat | No. of ward chetra Panchayat | No. of ward Gram Panchayat | No. of Gram Panchayat |
|---------|---------------|-------------------|--------------|----------------------------|------------------------------|----------------------------|-----------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1. | 1 | Almora | 11 | 48 | 405 | 6770 | 1146 |
| 2. | 2 | Udham Singh Nagar | 7 | 32 | 273 | 3353 | 494 |

| | | | | | | | |
|-----|----|---------------|----|----|-----|------|------|
| 3. | 3 | Champawat | 4 | 15 | 130 | 1848 | 295 |
| 4. | 4 | Nainital | 8 | 26 | 257 | 3328 | 495 |
| 5. | 5 | Pithoragarh | 8 | 35 | 299 | 4139 | 682 |
| 6. | 6 | Bageshwar | 3 | 19 | 120 | 2483 | 397 |
| 7. | 7 | Uttarkashi | 6 | 23 | 204 | 2826 | 517 |
| 8. | 8 | Chamoli | 9 | 27 | 249 | 3629 | 626 |
| 9. | 9 | Tehri Garhwal | 9 | 45 | 350 | 5941 | 1011 |
| 10. | 10 | Dehradun | 6 | 33 | 240 | 3187 | 715 |
| 11. | 11 | Pauri | 15 | 49 | 432 | 6924 | 1222 |
| 12. | 12 | Rudrapur | 3 | 19 | 116 | 2133 | 323 |
| 13. | 13 | Haridwar | 6 | 42 | 220 | 3653 | 316 |

Source : www.ua.nic.in

Table-2 : Demographic Features of Uttarakhand

| | |
|--------------------------------|---|
| Uttarakhand Total Population | 1,00,86,292 |
| Total Rural Population | 70,36,954 |
| SC Population in rural area | 18,92,516 (18.76%) |
| ST Population in rural area | 2, 91,903 (2.89%) |
| Sex Ratio | 963 Women Per 1000 Man |
| Literacy | 79.63% |
| Percentage of rural population | 69.76% |
| Highest Village Gram Panchyat | 1. Gram Panchyat Kuti (Pithoragarh) 13000 feet 2. Gram Panchyat Niti (Chamoli) 12500 feet 3. Gram Panchyat Ausala (Uttarkashi) 12000 feet |

Source : www.ua.nic.in

This is largely hilly state of India and except 02 districts of Udham Singh Nagar and Haridwar major geographical area of the state is comprised of mountains, forests and rivers. Nearly 44% area is covered under thick forests. The state which has international boundaries with China in the north and Nepal in the east, is endowed with natural resources vis a vis forests with varied vegetation, minerals, medicinal and aromatic plants, rivers, pleasant climate with natural beauty of long range of Himalayan peaks , national parks and religious places of national and international importance , tourist, travel and trekking roots, natural lakes and ponds and recognized among eight rich regions of biodiversity in the world.

In this context this Paper would be able to examine the working of the PRIs in hill region of Uttarakhand in order to explore the vibrant role of local self govt. in the true spirit of the democratic decentralization.

A study involving both economic and non economic impact of PRI on rural development. The former measures the economic empowerment of the stakeholders in the form of increase in employment and income and consequent reduction in poverty level, increase in production and productivity, value addition, assets creation, increased profit margins, use of technology and innovations, diversification of rural economy and development of local enterprise and entrepreneurs etc. The latter on the other hand is associated with social, educational, political, cultural empowerment of poor men and women hitherto excluded from the benefits of growth. Through panchyati raj institution Uttrakhand women empower and they can participate in Meetings and give more suggestion to related to development issue. But in the more Interior areas of hill and plains the rural people not aware about the welfare programmes they can say that they don't know how can get the benefits of governments programmes. Through MNREGA they can get job. One Major Problem is the Block office so far distance and there is no local transport. But Through PRI they can do the work related rural development and aware about the political system. women of hill area more aware about the Panchyati Raj System and they can understand the all the condition of his area. The hill society has a prolonged tradition of close community living and harmony with its natural environment. Traditional village Panchayats and forest Panchayats have performed well in bringing social welfare and delivering justice to the people. Law and order even today is managed in the rural areas of the mountainous part by combining revenue and police administration. The people belonging to the area are trusted everywhere for their honesty, hard work, communal harmony, and tradition of community living. In case of social hierarchy of rich and poor and asset distribution, class-gaps do not exist so sharply as is the case in other states of India. Distribution of land is almost equal. Only about 13 percent of the total geographical area is under cultivation, owned by the individual households. Under the decentralized system of development, provincial government will have to transfer common property rights of the land to the local self- governments. In fact, most of the land under government control including reserve forests of today needs to be transferred to the village and urban local self governments to be managed, protected and developed by themselves without any bureaucratic interference. Similarly, the property rights in case of water resources also need to be given back to these local self-governments. In the Uttarakhand context a large number of elected representative need training to perform their function since most of them are illiterate and know little about their roles and responsibilities, programs and system. monitoring system is must at block level to monitor Gram sabha and block level. E-Panchyat will be implemented in District level, Block Level and Village level to e-Governance.

Formation of district level and sub district levels of panchyats to deliver basic minimum needs to the citizen at the grass root level.

Effective coordination among departments and between the union and state government should create facilitating environment that can sustain member's faith and confidence in the Gram sabha and present immense opportunity.

Evolving a process of decentralized development remains the only hope for the local people who can be used not only to ensure collective property rights over their natural resources of Jal, Jangal, Zamin, but also bring in economic prosperity and social harmony. Department should collect data which help in estimating the number of toilets needed in rural areas. It should further be estimated as to how much construction is possible in one year. The reviews of the number of constructed toilets and allotted amount shall be done more frequently. People participation is must to develop the rural policies.

PPP model can be adopted for better utilization. The development programmes shall be carried out throughout the year in a phased & planned manner. Involvement of local professionals or NGOs can be done to ensure better outputs. Thus, we can say that due to the negligence of system the rural areas remain under developed. The government in spite of providing huge amount of funds remains unsuccessful in fostering the growth of rural India. There is a need to keep a strict watch over the utilization of fund by Gram Panchyat.

References

- Biju, M. R., *Dynamics of New Panchayati Raj System : Reflections & Retrospections*, New Delhi : Kanishka Publishers, Distributors,1998.
- Department of Panchyati Raj in Uttarakhand, www.ukpr.gov.in/
- Ghosh, R. & Pramanik, A..K., *Panchayat System In India : Historical, Constitutional & Financial Analysis*, New Delhi : Kanishka Publishers, Distributors,1999.
- Mathew George, et al. (eds.), *Status of Panchayati Raj in the States and Union Territories of India*, New Delhi : Concept Publishing Company, 2000.
- Patel, Amrit and Mahendra Patel, *Empowering Gram Sabha to Harness its Development Potential*, available at : <https://indiamicrofinance.com/gram-sabha-development.html>

Www.ua.nic.in

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Efficacy Testing of Tie and Dye Booklet

Rajdeep Kaur* and Sandeep Bains**

Tie and dye, is a resist-dyeing process for creating attractive coloured designs on fabrics. This is achieved by knotting, binding, folding or sewing certain parts of the cloth in such a way that the dye cannot penetrate into these areas when the cloth is dyed. It is a hand process by which intricate and attractive patterns can be produced. It is a village craft carried on mostly by women in villages of India. The workers are known as Bandhanaris who grow their nails of thumbs or fore fingers for tying the knots on cloth. Designs can be tied in different ways. A booklet on the tie and dye was prepared to inculcate the art among the art lovers. Further the efficacy of the booklet was tested on 80 students of Government schools (40 urban and 40 rural schools) of Ludhiana district. Pre knowledge testing and post knowledge testing was done. During pre- knowledge testing, it was found that there was a high knowledge gap which reached up to 2.00 WMS. Both rural and urban respondents had 100% knowledge gap in marking design on fabric, technique of random texturing, type of dye, pretreatment of fabric, preparation of dye bath and use of combination of various techniques. During post knowledge testing, the respondents were again administered the same questionnaire to check their knowledge level regarding tie and dye. It was found that the mean knowledge score of the respondents was high. It ranged between 1.75 to 2.00 WMS, which led to negligible knowledge gap. The knowledge gap clearly shows the effectiveness/efficacy of the booklet. The booklet was found to be efficient for learning techniques of tying.

[**Keywords** : Dye, Knowledge, Technique, Tie, Test]

1. Introduction

Tie and dye is a modern term invented in the mid 1960s in the United States but recorded in writing in an earlier form in 1941 as tied-and-dyed and in 1909 as

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tied and dyed by Charles E. Pellew, for a set of ancient resist dyeing techniques, and for the products of these processes (Ebert, 2013). The tie and dye or bandhani textiles have had a continuous history in India, as shown by their recurrence in written and visual documents at intervals over the centuries particularly from the 12th century onwards. It is difficult to trace the origins of this craft to any particular area in India. According to some references it first developed in Jaipur in the form of leheriya. But it is widely believed that it was brought to Kutch from Sindh by Muslim Khatris who are still the largest community involved in the craft. Bandhani was introduced in Jamnagar. This city has now become one of the principal centers of bandhani, creating new patterns and experimenting with colours. A bandhani garment was considered auspicious with Leheriya design which is a popular tie and dye design for the bride. One also finds the maids in the Ajanta wall paintings created almost 1500 years ago, wearing blouses of tie and dye patterns.

The African, Indian, and Japanese words, adire, bandhana, and shibori, meaning to tie and dye, have been used for centuries. In this procedure the cloth is tied with a thread of thickness greater than that of the cloth. This process typically consists of folding, twisting, pleating, or crumpling fabric or a garment and binding with string or rubber bands, followed by application of dye(s). After the tied cloth is dyed and dried, the ties and knots are opened. As a result, different colourful patterns on the cloth are produced. The art of tie and dye is most popular in various regions of Gujarat, Kathiawar and Rajasthan. It is often used for T-shirts, dresses, skirts, and other garments and also in furnishings like pillow covers, table cloths, bed sheets etc.

The manipulations of the fabric prior to application of dye are called resists, as they partially or completely prevent the applied dye from colouring the fabric. More sophisticated tie-dyes involve additional steps, including an initial application of dye prior to the resist, multiple sequential dye and resist steps, and the use of other types of resists (stitching, stencils) and discharge. Unlike regular resist-dyeing techniques, tie-dye is characterized by the use of bright, saturated primary colours and bold patterns. These patterns, including the spiral, mandala, and peace sign, and the use of multiple bold colours, have become clichéd since the peak popularity of tie-dye in the 1960s and 1970s. The vast majority of currently produced tie-dyes use these designs, and many are mass produced for wholesale production. However, a new interest in more sophisticated tie-dye is emerging in the fashion industry, characterized by simple motifs, monochromatic colour schemes, and a focus on fashionable garments and fabrics other than cotton. Tie and dye is a village craft carried on mostly by women in villages of India. Designs can be tied in different ways. They are set in stylized floral pattern or motifs of lotus flowers, dancing women and elephants or smart geometrical patterns.

2. The Present Study

Learning this art requires practical knowledge. Demonstrations, lectures, group discussions etc can be useful. Booklets, if appropriately prepared, can also be used to train many concepts to different groups of people. Studies are available on using one of these methods or comparing them with other training methods in teaching a variety of issues on the effectiveness of these teaching methods. However, an effort has been made to develop booklet in a way, which imparts sufficient knowledge to the reader as well as the pictorial presentations make the reader easy to grasp the idea. This study intends to test the efficacy of prepared booklet on Tie and Dye. To evaluate how well a booklet communicates information is to ask a number of students to read the booklet and then test these students on the contents of the booklet.

3. Methodology

The purpose of this study was to determine the understanding level of the respondents. Pre and post knowledge testing about tie and dye among grade 8th and 10th students was done. A questionnaire was developed for this purpose. Before building the questionnaire, the booklet was carefully read and all discrete facts, concepts and the implications suggested for them, were listed. These units of information were then cast in the form of question answers.

These tests were developed to assess information, acquisition and retention of knowledge by the respondents. The efficacy of the booklet was tested on 80 students of two government schools, one urban and one rural which were selected for the study. Within each school, students were randomly selected to serve as subjects. Pre testing of the respondents was done. The students were given the booklet and had one week to get familiarized with concept and techniques of tie and dye. After reading each respondent was asked to prepare sample of size 10x10 inches in three colours using different techniques listed in the booklet. During post testing, they were then given the questionnaire and were asked to complete it in 30 minutes.

4. Results and Discussion

4.1 Socio-economic Profile of the Respondents

The data in table-1 indicates that nearly half (55%) of the rural respondents were from the age group of 11-13 years, while majority (70%) of the urban respondents were from age group of 14-16 years. Only 5 per cent of the urban respondents were above 17 years of age. All the respondents were females from both the schools. Equal number of respondents were taken from class VIII and X from both rural and urban schools who opted for craft/Home Science as a vocational course. The data pertaining to the grades of the students in Crafts/ Home Science

showed that majority (92.5% and 95% of rural and urban respondents respectively) scored 'A' grade, while the rest scored 'B' grade in the subject. Further it was found that 90% of the rural respondents' fathers and 85% of the urban respondents' fathers were skilled workers, while the rest were either in service or business. Looking into the job profile of the respondents' mothers, it was observed that majority (75% rural and 80% urban) of them were housewives, while 20 per cent of rural and 10 per cent of urban respondents' mothers were engaged in unskilled work at their nearby localities. Only 5% rural and 10% urban respondents' mothers were in service. The annual family income of all the respondents was the maximum of Rs one lakh per annum. It was also noticed that the students preferred painting, dancing, singing, watching TV as their hobbies. The interest in painting showed their inclination towards this art.

Table-1 : Socio economic characteristics of the respondents n=80

| Characteristics | No. of Respondents | | | |
|---------------------|--------------------|------|------------|-----|
| | Rural (40) | | Urban (40) | |
| | n | % | n | % |
| Age group | | | | |
| 11-13 yrs | 22 | 55 | 10 | 25 |
| 14-16 yrs | 18 | 45 | 28 | 70 |
| 17 yrs and above | 0 | 0 | 2 | 5 |
| Sex | | | | |
| Male | 0 | 0 | 0 | 0 |
| Female | 40 | 100 | 40 | 100 |
| Level of Education | | | | |
| VIII class | 20 | 50 | 20 | 50 |
| X class | 20 | 50 | 20 | 50 |
| Marks in craft/ HSc | | | | |
| A grade | 37 | 92.5 | 38 | 95 |
| B grade | 3 | 7.5 | 2 | 5 |
| Father's occupation | | | | |
| Service | 2 | 5 | 4 | 10 |
| Business | 2 | 5 | 2 | 5 |
| Skilled worker | 36 | 90 | 34 | 85 |
| Mother's occupation | | | | |
| Service | 2 | 5 | 4 | 10 |
| Housewife | 30 | 75 | 32 | 80 |
| Unskilled worker | 8 | 20 | 4 | 10 |

4.2 Pre-knowledge Testing of Respondents

The knowledge level of respondents in tie and dye was tested through an interview schedule. During the pretest the respondents provided correct answers, for only a few of the questions relating to the fabric to be used for tie and dye. Table-2 reveals that there was a high knowledge gap which reached up to WMS of 2.00. Both rural and urban respondents had 100% knowledge gap in marking design on fabric, technique of random texturing, type of dye, pretreatment of fabric, preparation of dye bath and use of combination of various techniques. They had high knowledge gap ranging between WMS 1.53 to 1.97 regarding colour combinations, number of colours to be used in one product, material required for tying, steps of tie and dye, techniques of folding fabric, pleating, knotting, tritik, ingredients used for dyeing, procedure of dyeing, precautions while dyeing. The least knowledge gap was WMS 0.45 and 0.75 for the knowledge regarding the fabric to be used for tie and dye by rural and urban respondents respectively.

Table-2 : Pre-knowledge testing of respondents

n=80

| Knowledge regarding different activities | Incorrect (0) | | Partially correct (1) | | Correct (2) | | Mean knowledge score | | Knowledge gap | |
|--|---------------|-------|-----------------------|-------|-------------|-------|----------------------|-------|---------------|-------|
| | Rural | Urban | Rural | Urban | Rural | Urban | Rural | Urban | Rural | Urban |
| Colour combinations | 38 | 33 | 2 | 7 | — | — | 0.05 | 0.17 | 1.95 | 1.82 |
| No of colours to be used in one product | 37 | 36 | 2 | 2 | 1 | 2 | 0.10 | 0.15 | 1.90 | 1.85 |
| Fabric to be used | — | — | 18 | 30 | 22 | 10 | 1.55 | 1.25 | 0.45 | 0.75 |
| Material required for tying | 36 | 39 | 4 | 1 | — | — | 0.10 | 0.02 | 1.90 | 1.97 |
| Marking design on fabric | 40 | 40 | — | — | — | — | 0.00 | 0.00 | 2.00 | 2.00 |
| Steps of tie and dye | 35 | 38 | 5 | 2 | — | — | 0.12 | 0.05 | 1.87 | 1.95 |
| Technique of folding fabric | 38 | 39 | 2 | 1 | — | — | 0.05 | 0.02 | 1.95 | 1.97 |
| Technique of random texturing | 40 | 40 | — | — | — | — | 0.00 | 0.00 | 2.00 | 2.00 |
| Technique of knotting | 33 | 36 | 7 | 4 | — | — | 0.17 | 0.10 | 1.82 | 1.90 |
| Technique of pleating | 35 | 37 | 5 | 3 | — | — | 0.12 | 0.07 | 1.87 | 1.92 |
| Technique of tritik | 40 | 40 | — | — | — | — | 0.00 | 0.00 | 2.00 | 2.00 |
| Ingredients used for dyeing | 30 | 29 | 9 | 11 | 1 | — | 0.27 | 0.27 | 1.72 | 1.72 |
| Type of dye | 40 | 40 | — | — | — | — | 0.00 | 0.00 | 2.00 | 2.00 |

| | | | | | | | | | | |
|----------------------------------|----|----|----|----|---|---|------|------|------|------|
| Pretreatment of fabric | 40 | 40 | — | — | — | — | 0.00 | 0.00 | 2.00 | 2.00 |
| Preparation of dye bath | 40 | 40 | — | — | — | — | 0.00 | 0.00 | 2.00 | 2.00 |
| Procedure of dyeing | 33 | 37 | 7 | 3 | — | — | 0.17 | 0.07 | 1.82 | 1.92 |
| Precautions while dyeing | 22 | 21 | 18 | 19 | — | — | 0.45 | 0.47 | 1.55 | 1.53 |
| Use of combination of techniques | 40 | 40 | — | — | — | — | 0.00 | 0.00 | 2.00 | 2.00 |

4.3 Post-knowledge Testing of Respondents

After providing booklets to all the respondents, the respondents were again administered the same questionnaire to check their knowledge level regarding tie and dye. Table-3 indicates that the mean knowledge score of the respondents was high. It ranged between WMS 1.75 to 2.00 leading to negligible knowledge gap. The knowledge gap clearly shows the effectiveness/ efficacy of the booklet.

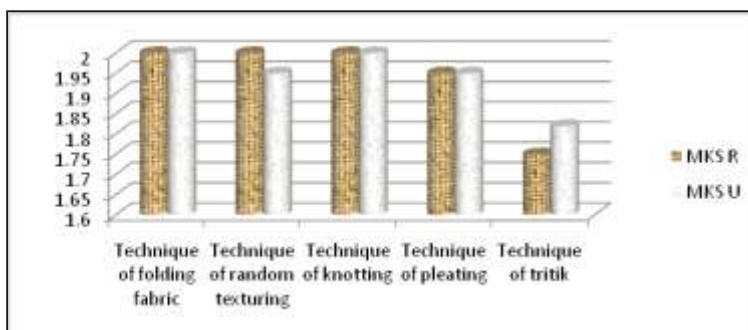
Table-3 : Post-knowledge testing of respondents after getting booklets on Tie and Dye

| Knowledge regarding different activities | Incorrect (0) | | Partially correct (1) | | Correct (2) | | Mean knowledge score | | Knowledge gap | |
|--|---------------|-------|-----------------------|-------|-------------|-------|----------------------|-------|---------------|-------|
| | Rural | Urban | Rural | Urban | Rural | Urban | Rural | Urban | Rural | Urban |
| Colour combinations | — | — | — | — | 40 | 40 | 2.00 | 2.00 | 0.00 | 0.00 |
| No of colours to be used in one product | — | — | 1 | — | 39 | 40 | 1.95 | 2.00 | 0.05 | 0.00 |
| Fabric to be used | — | — | — | — | 40 | 40 | 2.00 | 2.00 | 0.00 | 0.00 |
| Material required for tying | — | — | 2 | 1 | 38 | 39 | 1.95 | 1.97 | 0.05 | 0.03 |
| Marking design on fabric | — | — | 3 | 2 | 37 | 38 | 1.92 | 1.95 | 0.08 | 0.05 |
| Steps of tie and dye | — | — | 2 | 3 | 38 | 37 | 1.95 | 1.92 | 0.05 | 0.08 |
| Technique of folding fabric | — | — | — | — | 40 | 40 | 2.00 | 2.00 | 0.00 | 0.00 |
| Technique of random texturing | — | — | — | 1 | 40 | 39 | 2.00 | 1.95 | 0.00 | 0.05 |
| Technique of knotting | — | — | — | — | 40 | 40 | 2.00 | 2.00 | 0.00 | 0.00 |
| Technique of pleating | — | — | 1 | 2 | 39 | 38 | 1.95 | 1.95 | 0.05 | 0.05 |
| Technique of tritik | — | — | 11 | 7 | 29 | 33 | 1.75 | 1.82 | 0.25 | 0.18 |
| Ingredients used for dyeing | — | — | — | 1 | 40 | 39 | 2.00 | 1.95 | 0.00 | 0.05 |
| Type of dye | — | — | — | — | 40 | 40 | 2.00 | 2.00 | 0.00 | 0.00 |

| | | | | | | | | | | |
|----------------------------------|---|---|---|---|----|----|------|------|------|------|
| Pretreatment of fabric | — | — | — | 1 | 40 | 39 | 2.00 | 1.95 | 0.00 | 0.05 |
| Preparation of dye bath | — | — | — | 1 | 40 | 39 | 2.00 | 1.95 | 0.00 | 0.05 |
| Procedure of dyeing | — | — | — | — | 40 | 40 | 2.00 | 2.00 | 0.00 | 0.00 |
| Precautions while dyeing | — | — | 4 | 5 | 36 | 35 | 1.90 | 1.87 | 0.10 | 0.13 |
| Use of combination of techniques | — | — | - | 1 | 40 | 39 | 2.00 | 1.95 | 0.00 | 0.05 |

Some respondents faced difficulty in some techniques of tie and dye which was recorded. Fig 1 shows the response of respondents for the difficulty level of the techniques of tie and dye. It is evident from the figure that even after the administration of the booklet, tritik technique was found to be the most difficult for the respondents.

Fig.-1 : Difficulty level of the techniques



MKS - Mean Knowledge Score, R - Rural, U - Urban

After learning the art of tie and dye respondents showed their interests in developing apparel and life style products. Seeing to their interests they were asked regarding articles which they can prepare using this technique. It was noticed that the respondents preferred preparing dupattas, suit, curtains, bedsheets, cushion covers, table covers, napkins by using the tie and dye technique.

5. Conclusion

Using the booklet greatly improved knowledge regarding tie and dye techniques, which remained high after the practical conduct. Education with the booklet was efficacious for teaching school students about tie and dye. It may tend to help in capacity building of the rural masses as it can be taken up as an enterprise, thus helping in financial upliftment.

References

Ebert, Erin, *Sense of Fashion : Tie-dye gets Modern*, Savanna Now. Morris Publishing, Inc. (Retrieved 16 November 2013). ★

Mahatma Gautama Buddha as a Pertinent Teacher : Reflections from the Vinaya Pitaka

Pintu Kumar*

Why are terrorists (being a human), the young and energetic youths acting in a ridiculous and frustrated way? Didn't they go school/college to learn and behave like a human? These questions led us to think about our present education system, a more career-oriented than focused personality development. It seems to me that the current professional and routinized teachers focus more on the needs of the market, state, and self and they are not able to make teaching and learning more social, attractive, engaging, and appealing for students. The highly digital students of the twenty-first century are easily becoming restless and for many, the only new escape routes lie along the dangerous roads of drugs, sexual experimentation, terrorism, and outburst of senseless violence. Does the Buddhist tradition have an answer or any possible clues and guidelines? How far is the Buddha's method of teaching relevant in this age of instruction with high technologies? The article explores the possible answer and traces the significance of the Buddha as a teacher exhibited in the Pali Vinaya Pitaka particularly for the teachers and in general for the twenty-first-century educational system.

[**Keywords** : Buddhist pedagogy, professional, sattha, anusasana, Sakayanirutti, Dhamma]

1. Introduction

The Pali canonical texts often reflect the images of the Buddha such as, "An Arhat fully awakened....abounding in wisdom and goodness, happy with knowledge of the worlds, unsurpassed as a guide to mortals willing to be led, the

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teacher of gods and men” (Digha Nikaya, II.8, III.1.2.). Gautama Buddha is more famous as a mahatma than a teacher. Most of us merely know him by his religious and spiritual life, teachings, preaching, and sermons. The Buddha was not only an initiator of a new sect in India, i.e., Buddhism but also, he was an erudite, simple, and charismatic teacher. Gautama was wandering and preaching in this material world after the enlightenment for the rest of life. In this course, the Buddha came into regular contact of ordinary folks, groups of people, wicked people, villagers, educated and illiterates, holy saints, philosophers and so on to learn, share, and teach his ultimate knowledge. He not only talked, shared, and conveyed his complex ideas but also always tried to make it understandable, and engaging in the contemporary standard, and pure dialect. In this way, we can suppose him as a successful and skillful teacher reflected through the increasing expansion of his thoughts and the construction of monasteries. Later South Asian Buddhist monasteries adopted educational ideas, pedagogy, and methods of the Buddha and these mahaviharas served as both reputed educational and religious institutions. It is easy to be a reformer, but it looks hard to change the heart of millions without being a perfect, accessible, powerful preacher, and teacher like Mahatma Gautama Buddha. Syrkin (1984) said, “the Buddha’s characteristics describe him as a salutary preacher, an incomparable tutor (sarathi) of men, and teacher (sattha) of gods and men etc. reflected from his didactical methods constituting the essence of the canonical scripture.” It seems like there is a need to face relatively unexplored aspect of the Buddha’s personality as a teacher in the present global, material, and professional education system.

2. Objectives

When we start peeping into the teaching activities of schools, colleges, and universities, the emerging crisis within the education system strikes our intellectual reasoning. Today’s educational system is getting affected increasingly by the demands of self, state, and market, which intensified the task of teachers in carrying out their responsibilities efficiently and effectively. Teachers became more formal, professional, routinized, and focused on increasing number of publications and project completions to get promotions. The teaching became focused on courses, which are mostly lacking any emotional, moral, personality, and social teaching. Somewhere the mentorship and informal relationship with students are lacking behind, putting formal education in serious trouble. Deresiewicz (2014) rightly opines that at present students starve for validation, for connection, for care- for (let’s not be shy about saying it) parental figure other than their parents, which is a necessary part of growing up. It is somewhere related to the increasing youth unrest in America, Europe, and Asia. This may be explained in diverse ways. Students are quickly becoming restless, and for many, the only attractive escape routes lie along the dangerous roads of drugs, sexual experimentation, terrorism, and outburst of senseless violence. The contemporary

education system is producing thousands of unemployed youths every year. We often read in newspapers that the criminals/terrorists have educated the person and they are going forward to join ISIS, MOSSAD, ISI and other terrorist's organization in increasing number. The contemporary abnormal and inhuman events of violence and terrorist attacks in schools and colleges reflect the failure of our education system, for example, we often read in the newspaper about the event of gunfire in schools and colleges of America, mostly by the ex-students. Why is education taking a turn for the worse? Liu and Tee (2014) say that today students' lifestyle, everyday language, hobbies and attitude towards life reflect a post-modern outlook- anything goes. This 'anything goes' attitude welcomes anything that brings instant pleasure, avoids pain, and as much as possible excludes anything that requires self-reflection, moral discipline, and social responsibility. Students are enjoying active virtual connectivity with family and friends and occasional professional email conservations with teachers through modern gadgets of communication and information technology. In other words, they became far from the social living realities and the physical interactions. In this twenty-first century, students' mind-sets are changing fast. It means that there is a need for corresponding change in pedagogy or the methods of teaching. The article explores the significance of the Buddha's pedagogy mainly for the teachers and in general for the twenty-first-century educational system. This study investigates those principles and practices of the Buddha, which could hold the key to the solution of many educational ills of our times. How far is the Buddha as a teacher relevant in this age of teaching with high technologies? How can we introduce and connect students to the social living realities? What kind of approach can teachers adapt so that students acquire the needed knowledge in the right ways, develop the proper skill and cultivate the correct values?

3. Review of Literature

The teacher and its pedagogy are fundamentally constitutive of the contemporary education system, which they are a part, crossing over from the private sphere to shape the personality. The way the Buddha's teaching is held and given is more important than on their content, or perhaps more important in the context of today's educational crisis. Not only is the Buddha's pedagogy ousted by modern education but also the attempts made to revive it are also critically analyzed. The formal aspect of the Vinaya has attracted many German scholars, e.g., Oldenburg, Frauwallner, Schlingloff, Huber, and others. The recollection of the Buddha's teachings from the Buddhist canon keeps coming till today in monographs but lack the references to the Buddha's methods of teaching. The books related to the history of early Buddhism and monachism have an occasional reference to the Buddha's role as teacher and discipliner such as Oldenburg, 1904; Oldenburg, 1882; Dutt, 1960; Dutt, 1971, etc. Recent studies such as Lopez, 2001; Thubten, 2004; Bodhi, 2005; Gombrich, 1996 have shown little interest in briefing

the Buddha's methods of teaching reflected from the whole Pali canon. The absence of serious and focused analysis of the Buddha as a teacher in the current intellectual writings is surprising.

The teaching of the Buddha has codified in full detail in suttas in prose and verse in the Pali-Tripitaka, i.e., the Vinaya, the Sutta and, the Abhidhamma which is also based on the instruction (anusasana) of the Buddha. The Vinaya Pitaka altogether available in six different versions but the Pali version is a particularly interesting text for the investigation of the Buddha's pedagogy for several reasons. *First*, the Pali Vinaya Pitaka is the earliest, authentic and complete stratum of Buddhist literature, composed between the mahaparinirvata of the Buddha and the pre-Asoka period in the First Buddhist Council at Raajagraha. *Second*, The Vinaya means distinction, instruction, discipline, removal, etc. The Vinaya Pitaka is the first to show the program of teaching and the whole of the path as outlined in the early Buddhist community. *Third*, it does not only discuss the first fully ordained monks but also explains the course of development under which monks may progress toward arhatship depends on teaching dhamma in the right way. *Fourth*, the utterance of the Buddha mentioned in the Vinaya, where the teachings were promulgated through the medium of Sakayanirutti, i.e., the mode of expression or a language of his expression. *Fifth*, there was a tradition of studying the Vinaya during the time of the Buddha to become a real monk by mastering and practice it in their daily life. The Theravada Vinaya Pitaka has three divisions namely Suttavibhanga, Khanddhaka, and Parivara. Suttavibhanga consists of Parajika and Pavittiya. Khanddhaka contains two books Mahavagga and Cullavagga. I. B. Horner says that Parivarapatha seems concluding text of the Vinaya Pitaka added, later on, setting forth the method of teaching the Vinaya.

4. Implications

The canonical scriptures of Theravada Buddhism ascribed significant term *sattha* only to Gautama the Buddha, meaning the high status of teacher and/or master. We can also quickly notice in the Buddhist literature that the title *sattha* used very carefully not for anyone else but only for the Buddha. The Pali word *sattha* means a leader of a band, teacher, and competent. In this, we can say that the Buddha was the leader of his followers as a qualified teacher and guide. He is noted as the teacher of gods and men both. There are many instructional settings visible in the texts while the Buddha is interacting with debaters or laying down a rule. Professor Stoesz (1978) said in his article that these are not merely presentational devices of the early community developing its characteristic shape in the sense of dependence on its authoritative leader, but show a clear picture of the Buddha as a teacher seen canonically. It is his picture as the teacher in the Vinaya Pitaka as we have it that is interesting to the present study. What sort of figure does he cut in his aspect as the teacher? The Samannaphala Sutta and the prologue of the Suttavibhanga of the Vinaya describe the nature of the Buddha's as

sattha. He has achieved freedom from rebirth and the ultimate knowledge of this material world, so he can lead others who wish so. He knows all events and causes of happiness and sorrow, so he is an authoritative, and compelling person to guide all in explicit soteriological content. Others can recognise and pay respect to the authorship of the true sattha. His ideas and practices on learning, the relationships between the teacher and the taught, explanations and visual aids, etc. are refreshingly modern.

The Buddha's time of activities reflects an era of a perplexed religious situation in India. Indian society witnessed many rivals and jealous wandering religious sects and ideologies engaged in magical and miraculous deeds to win more supporters for them. The Buddha believed in the power of spoken words at that age. He successfully convinced people to change their way of life, adopt new values, and seek new goals through his peculiar methods of instruction. The Buddha as a teacher was useful in the sense that the number of followers was increasing day by day that the different sects became worried about self-improvisation. In this area, we can also see that his educational philosophy and ideas became the base of the later established Buddhist monasteries. These Buddhist monasteries followed the methods of the Buddha in training and learning of common men in Buddhism and various arts, crafts, and sciences. These mahaviharas produced many Buddhists and numerous disciplined and moral men, showing its efficient function as an educational institution. The originalities in the teaching proceedings of the Buddha were the main reason behind the success of the Buddha as a teacher and a preacher.

The Buddha was a master of a variety of means of instruction as appropriate to monks, laity, and ordinary folk; to those with varying needs on the higher path, on the lower way, on no path at all, and to those following another teacher. After the enlightenment, the Buddha's career was practically a continuous round of debates and discussions with the exponents of other schools of thought. He used to answer all questions put to him at assemblies of his disciples or taught the people of different faith. His discourses aimed to make people aware of his ideology, i.e., the true nature of dhamma and guide to salvation through the simple and easy methods of teaching. He practiced making the complex philosophical matters of impermanence (Anicca), substancelessness (Anatta) and suffering (Dukkha) to eradicate the attachment and to attain salvation (Nibbanna) through clear, understandable, and enjoyable to the common people. He was always open for discussion on what he said. He emphatically states addressing to Kalama that one should not accept anything on the ground of authority, tradition, more logic, and interference. Kumar (2018) mentioned in his book that one should examine and test the consequences of statement with the idea of verifying their relation to truth. If they are conducive to lose and sorrow, they should be rejected, and if they are helpful to profit and happiness, they should be accepted and abided therein. The Buddha's concept of learning was convenient, which made him popular in the contemporary age.

The Buddha's teachings were essential but also the used methods that made his education more relevant and useful. His stress on happiness and satisfaction of all with a practical approach resulted in a growing community of both monastic and laity from his teaching that embraces the principle of inclusiveness and diversity. Later the learning and techniques of the Buddha, which he has discovered and set forth, became a base for the reputed monasteries like Nalanda, Vikramasila, Odantapuri, and Valabhi. The Buddha focused on the real-life conditions of himself and the listeners in his meaningful dialogues. Bhikkhu Bodhi (2005) aptly explains that the entire process of training was based on personal experiences. Also as an inspiring teacher, he had trained himself first and lived the actual life he preached. In his praxis-based pedagogy, the listeners were participants rather than spectators, contributors rather than recipients, and subjects rather than an object in the learning.

What a teacher should do, the Buddha did it all. It was his essential humanism, rationality, and simplicity of expression that made his idea and teaching acceptable at that age and getting practiced in all over today's world. The method of his teaching is marked as continuous training like the ocean, i.e., to get the knowledge on beginning from the lowest as the base to the top elevated one. Exactly like the ocean, in the discipline of the Buddha, the training is gradual, the path is progressive and there is no sudden advance into full knowledge (Khuddaka Nikaya, I.126). An oral teaching, memorisation, highly disciplined life, monitorial system, discussion, debate, and traveling distant places are other techniques adopted by the Buddha. The Buddha's whole work was carried on by an oral communicative method with individual and group attention. The Buddha showered love and compassion and created the congenial atmosphere to raise interest among the people through putting out a series of questions. Apart from this sometimes the Buddha found it challenging to guide the ignorant people on the right path and put into place some disciplinary rules.

The Vinaya Pitaka mentions, "the Lord as satth? is pure in moral habit, mode of livelihood, the teaching of Dhamma, in exposition and knowledge and vision." In this way, we find an appropriate definition of the Buddha as a teacher up to an extent. The Buddha used to be pure both by heart and inactions, i.e., enlightened in the form of teacher. The Buddha as sattha is the ideal nature of his character. His knowledge, vision, and dharma are for everyone equally, which he not only teaches but also practices and lives with it. His morality and livelihood were transparent. The operational aspects of concept formulation in the Buddha's teaching methods are, i.e., lucid introduction, medium of spoken words, individual and community focused interactions, social services, use of the concept of causality and anatt?, authoritativeness, and mastery, etc.

One of the most critical ways in which the Buddha teaches is by laying down rules of conduct for a better life. The Buddha as a sattha often created rules when questions and event arise against the established traditions while talking to a

group of people. He always tried to take a middle path especially in laying down rules of behaviour suitable for a simple man. He used to focus on different standards for villagers, ignorant, educated, Buddhists, and monks for a better moral and disciplined life. His teaching and rules aimed at the formation of a harmonious and happy civilisation for the present and the future. This shows the Buddha's better understanding of the interplay of exterior and interior scenario for a disciplined life and inner realisation. Monks were the center of the Buddha's teaching activities, as the torch bearer of Buddhism. The enlightened has delivered more to the gradually increasing monks and laid down extensive rules in steps to bring them and keep them on the right path. The Patimokkha consists of rules of training laid down in stages by the Buddha for the guidance of those who have been ordained as a monk.

The Buddha tried to know the heart of learners by the extensive use of the standard similes, stories, parables, and fables in his teaching. He used to instantly adopt the ways and styles of talks after knowing the level of enlightenment and motivations of the desirous. His communicative method of lecturing using examples from daily life was mostly practical, understandable, and compelling. He mostly narrated about the contemporary social and religious realities and suggested in between the middle path for a righteous life. The Buddha's style of adapting his teachings on prevailing conditions is characterised as 'pouring new wine into old bottles.' This illustrative approach was a conscious attempt to stand with listeners and make the talk interesting, attractive, effective, understanding and encouraging. The Vinaya Pitaka notes several different sorts of similes and stories mentioned in the Vinaya Pitaka. One is the recounting of the progress toward enlightenment itself, as in the Suttavibhanga prologue. Another is the telling of some incident that occurred in the Buddha's life before his enlightenment. Sometimes the stories are about the previous experiences of talkers. Other stories may be drawn from the lore of contemporary religion. The Buddha wanted to make all men social but also devoted.

The Vinaya Pitaka is full of examples of the Buddha disagreeing and agreeing on the specific points of others. This shows the perception of apparent mastership and objectivity. Sometimes the opposition is set up either in the choice of words or the meaning of the words. This method of dialectical inquiry involving questions and answers and counter-questions is aimed at stimulating critical thinking and reflection of the listener. The Buddha had the peculiar analytical skill and loved to debate, discussion, and questions. Several types of questions such as Ekatsavyakaraniya-pañha (one pointed question), Vibbajjavyakaraniya-pañha (explanatory questions), Patipuccha-vyakaraniya-pañha (counter question reply) and Thapaniya-pañha (waived questions) adopted by the Buddha in the course of his preaching. Sometimes the discussion became filled with several types of question-answer, and sometimes a single kind of questions dominated the debate, which was altogether decided by the nature and content of the theme.

The teacher-taught relations act as the base for teaching and training procedures. The personal and interdependent relationship between teachers and students, especially in the informal situation and context is notable. Irrespective of the age of the parties concerned, the relationship engendered is that between a parent and child. We can refer that the Buddha taught his pupil more as a supervisor of self-learning than as the distributor of acquired knowledge. The Buddha used to assimilate himself into the group of disciples while addressing them. He used to establish a close and intimate relationship with students by knowing their perceptions and perspectives. He started his career with a small group of followers after his first sermon in Saranatha. His group/band increased gradually. It looks like the Buddha played two types of the role of teacher. He was an enlightened teacher, guide, and preacher for his group of followers, with whom he was living and wandering. It was like a 24x7 teaching job and always available to solve the queries of monks besides lecturing in the morning and the evening. In this part, we can witness an intimate and personal relationship between teachers and taught as they are taking care of each other in the case of illness. The Buddha played another type of teaching job while discussing in public, in a group, and among intellectuals. This occasional but frequent appearance as a teacher in the society had a less intimate relationship between teacher and taught but with lots of respect. The Buddha became more popular by establishing his divine and straightforward image as a teacher in the society.

5. Conclusion

Gautama the Buddha did become a *sattha*, which means he became a teacher or a master and provided instruction in Buddhist and material knowledge. His practical, analytical and illustrative methods of teaching reflected both subjectivism and objectivism, putting forth the appropriate degree of energy and guidance based on the peculiar relation between the teacher and the taught. His emotional, interested, and encouraging methods of teaching based on real life and the intimate relationships with his disciples is notable and the role it can make in solving today's educational crisis in the world is hopeful. There is a need to motivate and connect students to the studies by making teaching interesting, real, and useful like the Buddha. We must establish a close relation and try to know more about learner's needs and aspirations for making a lecture attractive and worth like the Buddha. It seems there is a need for continuous training in morality, spirituality, and social values like the Buddha for bringing back the current students from the digital world. He left no one person as successor in his role as teacher (*sattha*), but he left his Dhamma and instruction methods, which the teachers could follow successfully in his way.

References

Bodhi, Bhikkhu, in *The Buddha's Word : An Anthology of Discourses from the Pali Canon*, USA : Wisdom Publications, 2005.

- Chodron, Bhikshuni Thubten, *Taming the Mind*, New York : Snow Lion Publications, 2004.
- Davids, T. W. Rhys, and Carpenter, J. Estlin (eds.), *The Digha Nikaya*, 3 Vols. The Pali Text Society, London : Luzac and Company, 1967.
- Deresiewicz, William, *Excellent Sheep: The Miseducation of the American Elite and the Way to a Meaningful Life*, New York : Free Press, 2014.
- Dutt, N., *Early Monastic Buddhism*, Calcutta : K. L. Mukhopadhyay, 1971.
- Dutt, S., *Buddhist Monks and Monasteries of India : Their History and Their Contributions to Indian Culture*, London : George Allen & Unwin, 1962.
- Gombrich, Richard F., *How Buddhism Began : The Conditioned Genesis of the Early Teachings*, London : The Athlon Press, 1996.
- Holt, John C., *Discipline : The Canonical Buddhism of the Vinaya Pitaka*, Delhi : Motilal Banarsidass, 1981.
- Horner, I. B. (trans.), *The Book of the Discipline*, 4 Vols. London : Luzac, 1951.
- Kumar, Pintu, *Buddhist Learning in South Asia : Education, Religion, and Culture at the Ancient Sra Nalanda Mahavihara*, New York : Lexington Books, 2018.
- Liu, Ong Puay, and Tee, Ong Puay, "Teaching Students of Today : The Buddha's Way", *International Journal of Progressive Education*, 10 (2014): 43-55.
- Lopez, D. S. J., *The Story of Buddhism : A Concise Guide to its History and Teachings*, San Francisco : Harper, 2001.
- Oldenberg, Hermann (Translation from the German by W. Hoey). Buddha. London: A. Humphreys, 1904.
- Oldenberg, Hermann (Translation from the German by William Hoey), *Buddha : His life, His Doctrine, His Order*, London: Williams and Norgate, 1882.
- Oldenberg, Hermann (ed.), *The Vinaya Pitakam : One of the Principal Buddhist Holy Scriptures in the Pali Language*, 5 Vols. Pali Text Society, London : Luzac, 1964.
- Sangkriyayan, Rahul, *Vinayapitaka*, Taiwan : The Corporate Body of the Buddha Education Foundation, 1934.
- Stoesz, Willis. "The Buddha as Teacher", *Journal of the American Academy of Religion*, XLVI/2 (1978): 139-158.
- Syrkin, A. "Notes on the Buddha's Threats in the Digha Nikaya", *The Journal of the International Association of Buddhist Studies*, 7, 1984, 147-58. ★

Decoding the Blue Whale Challenge from Sociological Perspectives

Anirban Mukherjee* and Satish Kumar Shukla**

We are living in a world characterized by technological advancement and change. Recently there has been a surge in the suicide rates among the teenagers across the world and the cause is attributed to the “Blue Whale Game”. This online game was invented by Philip Budeikin and he justified the self-mutilating nature of the game as an act of cleansing the biological waste of society. India has not been immune from the attack of the Blue Whale Challenge suicide and there has been instances of such suicides or suicide attempts in the cities of Mumbai, Kolkata, and Thiruvananthapuram. As per the Hindustan Times Report (2017), 130 boys and girls across the world were the victims of the Blue Whale Challenge. Therefore, this study attempts to interpret the seemingly ‘individual act’ of suicide from different sociological perspectives namely, the structural functional perspective, conflict theory, symbolic interactionist approach, and postmodern perspectives.

[**Keywords** : Blue whale challenge, Sociological perspectives, Decoding, Suicide]

1. Introduction

The intentional act of killing oneself is designated as suicide. There can be various reasons for committing suicide and some of them are depression, bipolar disorder, other schizophrenia, personality disorder, substance abuse, alcoholism, financial issues, relationship troubles, etc. Thus, the general conception of suicide is that it is a personal act and an individual resorts to suicide because of personal

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and psychological reasons (Khan, Naz, and Khan, 2017). Sociologists, on the other hand, designate suicide to be a social problem and attribute its cause to unstable social environment. Emile Durkheim (1897), for instance, viewed suicide to be a social fact and identified its cause in lack of social integration and regulation.

Suicide is indeed a social problem in India and the magnitude of the problem can be gauged from the fact that one student commits suicide every hour in the country (Report of Hindustan Times, May 8, 2017). In fact, according to the Lancet Report of 2012, the country has the dubious distinction of having one of the world's highest suicide rates among the youths in the age category of 15 to 29 years. An exemplifying statistics in this regard can be 8,934 students committed suicide in 2015 and in the five years leading to 2015, 39,775 students engaged in the self-annihilating act (Report of Hindustan Times, May 8, 2017).

Recently, there has been a rise in the suicide rates among the children and teenagers across the world and the cause is attributed to an online game, "Blue Whale Game". The game was invented in 2013 by Philip Budeikin, a 21-year-old psychology student. The self-mutilating nature of the game was justified by Budeikin as an act of eradicating the "biological waste" of society. In fact, Budeikin was arrested in 2016 for inciting suicide of 16 teenage girls (Report of Mail One, May 10, 2017). As per the report of Hindustan Times, August 4, 2017, 130 boys and girls across the world were victims of the blue whale challenge.

The blue whale game is controlled by an administrator, who instructs the participant about every stage of the game. The game involves various challenges that the participant has to accomplish within a span of 50 days and the challenges become increasingly pernicious with the final stage being suicide. Some of the baleful challenges are poking one's hand with needles multiple times, cutting one's lips, standing on the edge of a bridge, curving "f 57" on one's hand, etc (Report of the Hindustan Times, August 27, 2017). Now let us briefly describe some of the blue whale suicide cases in India and then discuss the interpretation of such suicides from various sociological perspectives.

2. Blue Whale Suicide Cases in India

Manpreet Singh Sahani, a 14-year-old school student of Mumbai, committed suicide by jumping off the terrace of a seven-storey building on July 30, 2017. An investigation of Manpreet's cell phone by the police suspected his involvement with the blue whale challenge (Report of the Express News Service, August 2, 2017). Sadly enough, Manpreet posted his "last picture" on Instagram before committing the self-annihilatory act (Report of NDTV News, August 13, 2017).

Manoj C. Manu, a 16-year-old boy from Kerala hanged himself to death on July 26, 2017. An interview with the boy's mother, Anu, revealed that Manoj was playing blue whale game since the last nine months and noticed drastic changes in his behaviour subsequently. For instance, Manoj of late used to visit beach all by

himself, stayed awake all night, used to go to cemeteries, delved into river despite not having swimming skills, made a friend to curve three alphabets on hand using compass (Report of The News Minute, August 15, 2017). Also, Manoj was reported to be introvert by nature, stayed occupied with mobile games and isolated himself further in the months before his death (Report of the News Minute, August 15, 2017).

Similarly, Ankan Dey, a tenth standard boy in West Bengal suffocated himself to death by covering his head with a plastic bag. It was later disclosed by a friend of Ankan that he was playing the Blue Whale Challenge (Report of NDTV News, August 13, 2017). Ankan was also an addict of online games and on the fateful day remained absent from school to go to his father's shop to play games on his computer (Report of the Times of India, August 13, 2017).

Nineteen-year-old J. Vignesh alias Vickey of Tamil Nadu is identified as another victim of the blue whale challenge. Apart from piercing the image of blue whale on his forearm, the boy in his suicide note explicitly mentioned blue whale challenge to be the cause of his death and descried the blue whale trap to be "inescapable". (Report of the NDTV, August 31, 2017). His parents also noticed him to be absorbed in his phone and playing the game stealthily during odds hours of the day. He was further found to be depressed and preferred to remain secluded in the last few months (Report of the NDTV News, August 31, 2017).

In all the above mentioned cases of blue whale suicides, it was found that the teenagers were depressed and suffered from low self-esteem (Report of the Hindustan Times, August 4, 2017). Consequently, their sense of self-inadequacy urged them to engage in games and challenges that would earn them approval and affirmation from their peers. The developers of the game are very much aware of the prevailing mental setup of teenagers and they specifically target(ed) those who feel unhappy and frustrated at their present state of being. Thus, the blue whale administrators are quick to reach out to the teenagers who express their vulnerability and depression on online platforms (Report of the Hindustan Times, August 1, 2017). Initial interaction with such teenagers help the (game's) administrators to gauge their mental state and few tasks are given to understand their eagerness to proceed with the challenges (Report of the India Today, August 13, 2017).

3. Interpreting Blue Whale Suicide Cases from Sociological Perspectives

3.1 Structural Functional Perspective

The Structural Functional Perspective compares society to a system having various parts and these parts work together in the maintenance of societal harmony and integration. These parts, namely educational institutes, kinship and

family ties, religion, state, etc., are functional in shaping human life and maintenance of stability in society (Ritzer, 2011).

In line with the structural functionalist approach, Emile Durkheim in his work "Suicide" (1897) posited that the apparently personal act of suicide has social roots. He observed that suicide is caused by particular social currents that are 'external' to an individual and exerts 'coercive' influence over him/her. The Durkheimian approach to suicide was more concerned about explaining the difference in suicide rates among various groups than about explaining individual cases of suicide (Ritzer, 2011). Thus he believed that differences in suicide rates across groups could be explained in terms of variation in the degree of social integration and regulation (Thorlindsson and Bjarnason, 1998). He defined integration as the degree to which collective consciousness is shared by the group members and regulation as the level of external constraint on group members. Therefore, based on differential levels of integration and regulation, Durkheim classified suicide into four categories-egoistic, altruistic, anomic, fatalistic (Bearman, 1991).

Egoistic suicide is more common in societies featuring low levels of social integration. In large societies people are free to pursue their private interests and such unrestrained egoism often leads to dissatisfaction as all needs of a man cannot be fulfilled. Nonetheless, individuals strongly integrated in society by virtue of participation in familial, religious, and political ties are discouraged from committing suicide. In other words, Durkheim believed that agony resulting from pursuit of excessive individualism and concurrent loss of social ties predisposes individual in committing suicide (Ritzer, 2011). Similarly, Halbwachs (1930) explained the rise of suicide rates in cities in terms of increased impersonality and lack of social integration.

In contrast to Egoistic suicide, people commit Altruistic suicide when "social integration is too strong" (Durkheim, 1897/1951: 217). Mass suicide of women according to the Jauhar tradition, because their husbands suffered defeat in the battle is an instance of altruistic suicide. Thus, in variance to egoistic suicide, altruistic suicide is sacrifice of life because of "beautiful perspectives beyond this life" (Durkheim, 1897/1951 : 225).

Anomic suicide occurs when the regulatory mechanisms of society are in waning conditions. Thus, during the times of economic boom and bust, the collectivity have little authority over individuals, which leads to normlessness or anomie. Individuals, in such conditions, have little control over their passions, and unfulfilled desires instigate them to commit suicide (Ritzer, 2011).

While Anomic suicide is caused due to loss of regulatory mechanisms of society, Fatalistic suicide occurs because of excessive social regulation. The suicide of army personnel due to excessive social regulation whereby their "passions violently chocked by oppressive discipline" is an example of fatalistic suicide (Durkheim, 1897/1951 : 276).

Applying Durkhemian (1951) analysis to the Blue Whale suicide cases, such suicide could be seen as instances of 'Egoistic Suicide' and the cause may be located in the lack of social integration and 'excessive individuation' that characterizes the modern society.

3-2 Conflict Theory

The issue of rising blue whale suicide could also be explained from the Conflict approach. The approach focuses on inequality in society in terms of wealth, power, prestige, race, gender, caste, etc. and how such inequality leads to conflict and change. A conflict theory would thus reason the blue whale suicide cases in the eroding social capital in the modern capitalistic society. There are two forms of social capital-'Cognitive Social Capital' and 'Structural Social Capital' (Khan, Naz, and Khan, 2017). The former refers to the norms, values, attitudes, and beliefs that we learn in society and are instrumental in promoting cooperative and harmonious behaviour. The structural social capital, on the other hand, refers to the various social networks that individuals have and develop in society (Khan, Naz, Khan, 2017). It may very well be argued that modern industrial society encourages people to be goal directed, achievement oriented and individualistic. Such society, as Putnam (1995) argues, is underlined by the lack of community comradeship and declining social capital. This is evidenced in the form of declining civic engagement of people and their involvement in community affairs. In the race for success and profit maximization, empathy for fellow human beings is lost. In fact, Louis Wirth in his celebrated work, "Urbanism as a Way of Life" (1938) have highlighted on the alienating nature of urban life and how people feel frustrated and agitated in lonely urban life. Furthermore, metropolitan life is characterized by the declining importance of familial values and integration; as was aptly illustrated by Thorlindsson and Bjarnason's (1998) study of suicide among Icelandic youth.

3-3 Symbolic Interactionist Approach

A Symbolic Interactionist would offer a different perspective in interpreting the blue whale suicides. They would argue that people are largely unsuccessful in social interaction and relationships in modern society and this results in substance abuse, domestic violence, divorce, marital discords, discipline issues with children, etc. (Naroll, 1965; Krauss and Krauss, 1968; Khan, Naz, Khan, 2017). In fact, studies by Corcoran and Nagar (2010) and Samaritans (2012) confirm that people who are unsuccessful in their family and social relationships are more likely to commit suicide. Additionally, Symbolic Interactionists also view that modern society is becoming increasingly devoid of relations of reciprocity, which in times of crisis triggers higher rates of suicide (Palmer, 1972; Khan, Naz, Khan, 2017).

3-4 Postmodern Perspectives

The perspective is critical about the inability of the existing theories in explaining social life in modern societies. Postmodern society is characterized by information explosion and rise in the service sector jobs. Thus, 'consumerism' has become the existing norm and the electronic technologies have shrunked the world into a "global village" (McLuhan, 1962). In other words, rapid advancement of technology in the modern world have altered the nature of relationship through 'time-space' compression (Harvey, 1989). One of the main characteristics of postmodern societies is fragmentation (Beck, 1986; Baumann, 1999; Moller-Leimkuhler, 2003). It can be fragmentation of goals, purposes, ideals, values, etc. and the consequent prevalence of subjective construction of meaning (Eckersley and Dear, 2002). So, reality has become 'unstable' with the erosion of collectivity and individuals have become prone to suffer from identity crisis (Moller-Leimkuhler, 2003).

Higher incidence of blue whale suicides among the male teenagers compared to females can be explained in terms of greater emphasis on value of 'individualism' in the traditional male gender- roles (Moller-Leimkuhler, 2003). In the competitive postmodern world, males see themselves as struggling while "all other males seem to be happy, healthy, optimistic, competitive, successful and self-actualised." (Moller-Leimkuhler, 2003: 6). They pay the extra price in the form of anxiety, stress, self-doubt, depression, etc. In their attempt to escape, teenagers refuge in the world of 'simulacra' or unreal representation of reality i.e. the virtual world (Jameson, 1990). Suicides because of blue whale challenge could be understood as instances of teenagers chasing simulacra or fake realities.

4. Conclusion

Modernity has both positive and negative consequences. On the positive side, modernity has provided us freedom, security and convenience, while, on the hind side, it has increased risk, competition, and individualism. In contrast to the pre-modern societies which was based on face- to-face social interaction, modernity has led to abstraction of time and space. This has disembedded our social relations across time and space and increased our reliance on abstract systems. Stated differently, we are and have become excessively dependent on unfamiliar experts and systems in order to ply through our day-to-day lives (Giddens, 1991; Appelrouth and Edles, 2007).

Modernity also implies a threat to our 'ontological security' (Giddens, 1991). Generally, people strive to routinize their lives' and preserve their self-identities in order to better withstand the onslaught of uncertainty and risk of the modern age. However, our fast-paced lives challenge our sense of ontological security and identity. As a measure to cope up with the challenge, people try to develop and enter into relationships, which requires self-disclosure and development of trust.

Ironically, the concept of 'intimacy' is redefined in the modern world and people are increasingly seen to rely on outside agencies (like relationship experts) for building their relationships (Appelrouth and Edles, 2007).

Teenagers become increasingly deprived of the sense of ontological security in the modern times and as a result feel lonely and lost. In the absence of breathing space in the real world, teenagers seek solace in the virtual world. Dejected by rejection in the real world, blue whale challenge provides a platform for the teenagers to prove their mettle and emerge victorious.

Alas! The Challenge is won at the cost of life.

References

- Abraham, B., "Blue Whale Strikes Again! Two Kerala Families Say Their Sons Committed Suicide After Playing the Game", *India Times*, August 16, 2017. Retrieved from <https://www.indiatimes.com/>
- Appelrouth, S. & L. D. Edles, *Sociological theory in the Contemporary Era*, California : Pine Forge Press, 2007.
- Ashraf, S., "Everything you need to know about the deadly Blue Whale suicide game", *Hindustan Times*, August 01, 2017. Retrieved from <https://www.hindustantimes.com/fitness/everything-you-need-to-know-about-the-deadly-blue-whale-suicide-game/story-mVMWwH9evk5RM6iakug7cL.html>
- Banerjee, P., "The 50 tasks of fatality: Is Blue Whale Challenge really killing youngsters in India?", *Hindustan Times*, August 27, 2017. Retrieved from <https://www.hindustanimes.com/india-news/the-fatal-fifty-tasks-is-blue-whale-killing-youngsters-in-india/story-XZhbCIW13VBs4ZHF8aEoJ.html>
- Bearman, S. P., "The Social Structure of suicide", *Sociological Forum*, 6, 1991, 501-524.
- Corcoran, P. and A. Nagar, "Suicide and marital status in Northern Ireland", *Social Psychiatry & Psychiatric Epidemiology*, 45, 2010, 795-800.
- Durkheim, E., *Suicide : A Study in Sociology*. France : The Free Press, 1897.
- Dutta, K. & Singh, P., "Blue Whale challenge: Bengal boy found dead, Doon kid stopped from killing self", *Hindustan Times*, August 12, 2017. Retrieved from <https://www.hindustantimes.com>
- Giddens, A., *Capitalism and Modern Social Theory : An Analysis of the writings of Marx, Durkheim and Max Weber*, UK : Cambridge University Press, 1971.
- Giddens, A., *The Sociology of Suicide : A Selection of Readings*, London : Frank Cass, 1971.
- Giddens, A., *Modernity and Self-Identity : Self and Society in the Late Modern Age*, Cambridge : Polity Press, 1991.
- Halbwachs, M., *The Causes of Suicide*, New York : The Free press, 1978.
- Khan, N. A. Naz and W. Khan, "An Insight to the Sociological Explanation of Suicide : A Perspective Based Article", *Suicidology Online*, 8, 2017, 1-7.
- Khanral, S., "In West Bengal, teen gamer killed in freak accident", *The Times of India*, August 13, 2017. Retrieved from <https://timesofindia.indiatimes.com>

- Krauss, H. H. and J. B. Kraus, "Cross-cultural study of thwarting-disorientation theory of suicide", *Journal of Abnormal Psychology*, 73, 1968, 353-57.
- Kundu, I., "Bengal: 15-year-old commits suicide, links to Blue Whale Challenge suspected", *India Today*, August 13, 2017. Retrieved from <https://www.indiatoday.in>
- Lakshmana, K. V., "Blue Whale challenge: You can enter but not leave, says teen before suicide", *Hindustan Times*, August 31, 2017. Retrieved from <https://www.hindustanimes.com>
- Palmer, F. R., "Noun- Phrase and sentence a problem in semantics/syntax", *Transactions of the Philological Society*, 71, 1972, 20-43.
- Narroll, R., *Thwarting Disorientation and Suicide*, Unpublished, North-western University, 1965.
- Navalkar, P., "Mumbai teen jumps from seventh floor, kills himself over online suicide game", *Deccan Chronicle*, August 01, 2017. Retrieved from <https://www.deccanchronicle.com/>
- Philip, S., "Kerala woman says Blue Whale killed son, police probe claim", *The Indian Express*, October 21, 2017. Retrieved from <http://indianexpress.com>
- Ritzer, G., *Sociological Theory*, 5th edition, New Delhi : McGraw Hill Publication, 2011.
- Sanyal, A., "Bengal Class 10 Student Death Suspected As 'Blue Whale' Suicide", *NDTV*, August 13, 2017. Retrieved from <https://www.ndtv.com>
- Shara, A., "Everything you need to know about the deadly Blue Whale suicide game", *Hindustan Times*, August 01, 2017. Retrieved from <https://www.hindustanimes.com>
- Stalin, J. S. D., "Teen's Suicide Linked to Blue Whale; 75 More Playing, Suspect Tamil Nadu Police", *NDTV*, August 13, 2017. Retrieved from <https://www.ndtv.com>
- Thorlindsson, T. and T. Bjarnason, "Modeling Durkheim on the Micro Level : A Study of Youth Suicidality", *American Sociological Review*, 63, 1998, 94-110.
- Wirth, L., "Urbanism as a Way of Life", *American Journal of Sociology*, 44, 1938, 1-24.
- Wyllie, C., S. Platt, J. Brownlie, A. Chandler, S. Connolly, R. Evans, and B. Kennelly, et al., *Men, Suicide and Society : Why Disadvantaged Men in mid-life die by Suicide*, Surrey : Samaritans, 2012. ★

The Royal Activities of His Majesty King Bhumibol towards Muslims in Thailand

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This article aims to study the work of His Majesty King Bhumibol Adulyadej (Rama IX) concerning the Muslims in Thailand. According to the present Constitution of the Kingdom of Thailand, Section 7 says that the King is a Buddhist, but he must be an upholder of other religions, as well. And Section 67 says that the State should support and protect Buddhism and other religions as well. From clear evidence, it appears that Islam first came to Thailand in the reign of King Ekathotsarot (1593 - 1601) during the Ayothaya period, and has flourished since then. The early ancestors were Shiah, and this has continued to the present. King Bhumibol Adulyadej, who recently passed away, completely supported the activities of other religions, including Muslims. In 1979 he started a project to seriously support agriculture. After that, he kindly ordered the renovation of the central mosque in 1993. Moreover, he had many projects to help resolve the troubles in the southernmost part of Thailand, such as Phikunthong Project. The results reveal that regarding his activities concerning Muslim people, he acted in accordance with his speech that “understanding, approaching and developing”, which is why the Muslim people in Thailand have freedom of religious observance, and are happy, as are people of other religions in Thailand.

[**Keywords** : The Majesty King Bhumibol Adulyadej, The Muslims, The Royal activities]

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1. Introduction

In the history of Thailand, from the Sukhothai period (B.E. 1762/A.D. 1219) (Plueng Na Nakhon, 2005 : 551) to the Rattanakosin period, there have been 8 dynasties with 54 kings. All the kings have been Buddhists. Even though the kings are Buddhists, they are also the patrons of all religions. Every king gives equal patronage to every religion in his kingdom. In the royal court, the Chularajamontri (Most Senior Islamic Spiritual Leader) supervises Islam, and Phramaha Rajakhruvamadebmuni (Brahmin Great Master) performs Hindu rituals. Christianity and Sikh have no representatives in the royal court, but both receive equal patronage from the kings as do other religions.

In the Constitution of the Kingdom of Thailand B. E. 2560, there are sections concerning the monarch as follows :

Section 7 : The King is a Buddhist and Upholder of religions.

Other sections specify the freedom of belief among Thai people and the duty of state to protect every religion as follows (Academic team, 2017 :10);

Section 31 : A person shall enjoy full liberty to profess a religion, and shall enjoy the liberty to exercise or practice a form of worship in accordance with his or her religious principles, provided that it shall not be adverse to the duties of the Thai people, neither shall it endanger the safety of the State, nor shall it be contrary to public order or good morals (Academic team, 2017 : 22).

Section 67 : The State should support and protect Buddhism and other religions.

In supporting and protecting Buddhism, which is the religion observed by the majority of Thai people for a long period of time, the State should promote and support education and dissemination of dharmic principles of Theravada Buddhism for the development of mind and wisdom development, and shall have measures and mechanisms to prevent Buddhism from being undermined in any form. The State should also encourage Buddhists to participate in implementing such measures or mechanisms (Academic team, 2017 : 41).

2. A Brief History of Islam in Thailand

For more than 700 years in the history of Thailand, from the Sukhothai kingdom B. E. 1762 (A.D.1219), the country has been ruled by the monarchical system. In about B.E. 235, Buddhism was spread to this area from India by Buddhist monks sent by King Asoka. The document to confirm this fact is an inscription in stone slabs. In the reign of King Ramkhamhaeng, Buddhism was the national religion. There were no referent documents indicating that there were other religions in the Sukhothai kingdom at that time or not. The document found in the reign of King Ekathosarot (A.D. 1593-1601) indicated that there were two Shia Islamic brothers; Sheikh Ahmad and Mahamad Sa-id from Persia who came

to rely on royal protection in the land of Siam. They both lived a life in trading and then became state officials. Sheikh Ahmad was appointed as Phraya Sheikh Ahmad Rajasetthi and acting-Chief of the Muslims in Thailand in the reign of King Songdham (A.D. 1620-1628) (Phraya RaksaKunmontri, Chuen Komarakul Na Nakhon, 2003 : 15) Muhammad Sa-id was appointed as Chaoaphraya Bovornrajanayok, the Royal Councilor, in the reign of King Prasartthong when he was 87 years of age. Some descendants of Muhammad Sa-id remained in the faith of Islam and some became Buddhists. The kings of Siam have given patronage to Islam from that time onwards. The lineage of Mohammad Said has continued until the Rattanakosin period and is related to the royal families and government of Thailand. In the Islamic lineage, a son of Phra Phetphichai was appointed as Phraya Chularajamontri, the Most Senior Islamic Spiritual Leader, until the reign of King Rama VII in the Rattanakosin kingdom. In the reign of King Rama IX, a member of this lineage became a judge in the Administrative Court.

Islam in Thailand can be divided by sect; Sunni and Shia, and by geographical location; Muslims in regional areas and Bangkok, and in the southern part of Thailand.

Although the kings of Thailand are Buddhists but all of them give patronage to other religions equally. This may reflect the teaching of non-violence in Buddhism as expounded by King Asoka the Great (B.E. 218-260) as the main model. The reference is in the King Asoka's Rock Edict number 12 (Phraphrommakhunaphon, Poh Or Payutto, 2009 : 95-96) :

“The Beloved of the Gods, the king Piyadassi, honours all sects and both ascetics and laymen, with gifts and various forms of recognition. But the Beloved of the Gods do not consider gifts or honour to be as important as the advancement of the essential doctrine of all sects. This progress of the essential doctrine takes many forms, but its basis is the control of one's speech, so as not to extoll one's own sect or disparage another's on unsuitable occasions, or at least to do so only mildly on certain occasions. On each occasion one should honour another man's sect, for by doing so one increases the influence of one's own sect and benefits that of the other man; whileby doing otherwise one diminishes the influence of one's own sect and harms the other man's. Again, whosoever honours his own sect or disparages that of another man, wholly out of devotion to his own, with a view to showing it in a favourable light, harms his own sect even more seriously. Therefore, concord is to be commanded, so that men may hear one another's principles and obey them. This is the desire of the Beloved of the Gods, that all sects should be well-informed, and should teach that which is good, and that everywhere their adherents should be told, ‘The Beloved of the Gods does not consider gifts or honour to be as important as the progress of the essential doctrine of all sects.’ Many are concerned with this matter - the officers of Dhamma, the women's officers, the managers of the state farms, and other classes of

officers. The result of this is the increased influence of one's own sect and glory to Dhamma" (Lars Fogelin, 2015 : 78).

That the kings of Thailand have protected and given patronage to every religion in the kingdom is because they keep following the principles of the Tenfold Code of the King. The Tenfold Code of the King consists of :

1. **Dana** : Generosity
2. **Sila** : high moral character
3. **Pariccaga** : self-sacrifice
4. **Ajjava** : **honesty** : integrity
5. **Maddava** : kindness and gentleness
6. **Tapa** : austerity; self-control non-Indulgence
7. **Akkodha** : non-oppression
8. **Avihimsa** : non-violence ; non-oppression
9. **Khanti** : patience: forbearance, tolerance
10. **Avirodhana** : non-deviation from righteousness, conformity to the law (Khu. Ja. 28/240/86) and (Phraphomma khunaphon, 2016 : 240-241).

His Majesty King Bhumibol of Thailand (A.D.1927-2016) followed the steps of other late kings in giving patronage to every religion in the kingdom. The following is the brief history of His Majesty King Bhumibol or King Rama IX :

2.1 Birth

His Majesty King Bhumibol was a son of Mahidol Adulyadej, Prince Songkhlanagerin and Lady Sangwal born on December 5, 1927 at Mount Auburn Hospital in Massachusetts State of the United States of America and passed away on October 13, 2016.

2.2 Education

When His Majesty the King was 5 years old, he started his kindergarten education at Mother Dei School in Bangkok. After that he was enrolled in Merriment School in Lausanne for elementary education. In 1935, continued his education at Ecole Nouvelle de la Suisse Romande and graduated with Bachelors Letters. In this college, he learned languages, such as English, French, German and Latin and he was good at all these languages. In higher education, His Majesty the King was enrolled in Science and Engineering at Lausanne University. Later in 1938, he returned to Thailand and ascended the throne as the ninth king of the Chakkri dynasty on June 9. Since he was so young and had to return to Switzerland for his education, the regency was established to run the state administration.

On August 19, 1946, His Majesty the King returned to Lausanne for his study. Even though he preferred Engineering to other courses of study, but for the

sake of country administration, he changed the field of study to Government consisting Law, Language, Political Science, Public Administration, and Geography. He was so interested in music that he could learn and practice professional skills in music by himself (Vutthichai Malasin and others, 2003 : 392-394).

2-3 Marriage

February 27, 1950, His Majesty the King returned to Thailand for the royal cremation of the late King Ananda from 28-30 March 1950. April 28, 1950, the royal wedding ceremony was arranged at Sa Pathum Palace. His Majesty the King was married to HRH Princess Sirikit. HRH Princess Srisavarin presided over the ceremony. His Majesty the King and his consort had a marriage registration certificate as other Thai people did. HRH Princess Sirikit was later entitled as Queen Sirikit.

2-4 Coronation

May 5, 1950, His Majesty King Bhumibol was crowned at Phaisanthaksin Pavilion in the Grand Palace with the title inscribed in the golden plate that “His Majesty King Bhumibol Adulyadej Mahitalathibet Ramathibodi Chakkri Naruebodin Sayamintharathiraj Borommanathbophit”. In the Coronation at the Grand Palace, during which His Majesty the King swore : “We shall reign with righteousness, for the benefit and happiness of the Siamese people.”

At the same occasion, His Majesty the King elevated HRH Princess Sirikit to the rank of full queen. On October 22, 1956, the king was ordained at the Temple of the Emerald Buddha and resided at Panya villa in Wat Bovornnives Vihar for 15 days. During that period of time, Queen Sirikit was assigned to overlook the royal activities and duty for the king. The queen was entitled as Queen Sirikit Boromrajininath. (Rong Prapanpong, 2017 : 245-249)

2-5 Royal Activities

From A.D. 1959 onwards, Their Majesties the King and the Queen paid visits to countries in Europe, America, Australia and Asia to foster international relations. At the same time, they visited and met people in every part of the kingdom. Seeing people’s problems in living and earning, Their Majesties sacrificed themselves in solving and improving people’s life quality until the present. It can be said that there are footprints of Their Majesties in every part of the kingdom. With his long sight, vision, and wit, people’s problems were solved, and life quality and income were gradually improved. His Majesty the King tirelessly devoted himself for the sake of people and country.

His Majesty the King initiated more than 2,000 projects covering public health, agriculture, irrigation, land development, education, religious affairs, society, culture, transportation, and economics for the benefit and peacefulness of

people, especially people in the countryside. In the urban areas, the king initiated ways and methods in solving traffic problems, flooding, pollution etc.

His Majesty the King worked tirelessly for the benefit of the people, even when he was not well, he still kept thinking and planning for eradicating people's poverty and suffering, and increasing people's happiness and well-being. Sometime, he carried on the work under the sun and the rain in a joyful manner surrounded by the people.

When the country was confronted by economic crisis in 1997, His Majesty the King presented a new way of life called "Sufficiency Economy" for people to live the life sustainably. People have implemented this theory in their living and this has resulted in improvements to the quality of life and a new way of living.

3. Royal Projects for Thai-Muslims

In his 70-year reign, His Majesty the King created lots of projects and initiated activities for Muslims. Thaksin Palace in Narathiwat province was the residence of the king when he visited Islamic people in the 3 southern provinces. Here are 2 examples of the royal projects for Muslims ;

1. Residing at Klaikangwon Palace in Hua Hin district of Prachuapkhiri Khan province, His Majesty the King visited people in the nearby area and found that people needed a road for transporting their agricultural produces. The king gave his pocket money 50,000 baht to Border Patrol Police Division to construct a new road for people. Later on, this kind of initiative became the royal projects and was extended to the southern part of Thailand for improving the life quality of Thai-Muslims. At present, there are 398 of the Royal initiated projects altogether with a budget of 3,700-3,800 million baht.

In Narathiwat province, there are 296 projects with a budget of 2,700 million baht.

In Pattani province, there are 62 projects with a budget of 549 million baht.

In Yala province, there are 40 projects with a budget of 455 million baht.

2. Mr. Dilok, the private interpreter of His Majesty the King, stated that, at first, Islamic people called the king "Rayoshiah" or "King of Siam". When the king visited people in the area more and more often, they changed their address to "Rayokito" or "Our King". With deep impression and faith in the king, people added "ba-eh" to "Rayokito ba-eh" or "Our good and kind King", and some people say "Kidokase Rayokito" or "We love our King" (MGR Online, 2006, May 20, Online)

3.1 Building and Renovating Mosques and Education Centers for Thai-Muslims

1. When His Majesty the King visited a Muslim village named Baan Huay Sai in Cha-Am district of Prachuapkhiri Khan province in 1979, the mosque leader

asked the king to accept their mosque under the royal patronage. The king accepted it with pleasure and donated his own money 500,000 baht for the restoration of the mosque. The restoration work was completed in 1999. Princess Maha Chakkri Sirindhorn presided over the opening ceremony in 2000.

2. October 21, 1993, His Majesty the King visited the central mosque in Pattani province and found that the area had limited space for a large number of people to participate in the religious functions. At the king's suggestion, the government carried out the work and a mosque extension was completed 3 years later (Phalakorn Suwannarat, 2016, November 24, Online).
3. There are educational centers for Muslims, such as Huay Sai Educational Center in Prachuapkhirikhan province, Phikulthong Educational Center in Narathiwat province, Phuphan Educational Center in Sakonkakhon province etc. (Sappasin Sattrathirat, 2017, June 14, Online).

3-2 Promoting Islamic Affairs Administration

1. To appoint the Most Senior Islamic Spiritual Leader
2. To approve the board of Islam of Thailand by law, and
3. To enact the Act of Islam, such as Hajj Supporting Act A.D. 1981

3-3 Relations and Activities on Islam

When His Majesty the King went to Thung Sadet village in Sai Buri district of Pattani province, Mr. Wadeng Puteh, 70 years, had an audience with the king with his upper body naked and informed the king about acid soil in the village. Then the soil clinic and other projects were set up. It is known that Wadeng Puteh is the best friend of the king or a best friend of Sai Buri. Wadeng Puteh passed away at the age of 96 in 2012.

3-4 The Royal Activities Beneficial to the Faith in Islam

1. Before A.D. 1962, the consulate of Saudi Arabia had an audience of the king and offered him a set of the Koran in English. Considering that Thai-Muslims should have the Koran in Thai version for study, His Majesty the King addressed the Muslim Master, Tuan Suwannasart, to have the Koran translated into Thai. The translation work took 2 years to complete under the supervision of His Majesty the King. The Koran in Thai version was published in 2008.
2. In Annual Maulid Ceremony, the most significant ceremony of Muslims in Thailand, when His Majesty the King presided over the ceremony, he stood up for salutation when the history of the Prophet Muhammad was read. That impressed and satisfied Muslims in Thailand (Beduin, 2016, October 29, Online).

3. Once Mr. Wanmuhammadnora Mata, President of the National Assembly, had an audience of the king for the king's signature on the Constitution B.E. 2540 (A.D. 1997). The king allowed President of the National Assembly to follow the code of Islam. The king understood that Muslims were not allowed to pay respect to anyone than the Prophet, and the Muslim status can be ended at once (Phalakorn Suwannrat, 2016, November 24, Online).

3.5 Scholarships for Muslims

1. With His Majesty the King's initiation, the government set a budget to support the study of Islam and granted scholarships and quota in higher education for Muslims.
2. The Ministry of Education at the suggestion of the king initiated and improved the learning system in Pondok schools with general education and religious education (Beduin, 2016, October 29, Online).

4. Conclusion

The kings of Thailand from the ancient time to present are Buddhists, but all of them have given patronage to Islam and other religions equally. Muslims have been supported during all this time. There are many royal projects initiated for Muslims only. The religious problems of Muslims throughout the country have not occurred. The problems in southern part have not occurred from religious conflicts, but from political concepts that should be solved with understanding. His Majesty the King gave a suggestion as a guideline for solving this problem with "Understand, Approach, and Develop".

References

- Academic team, *Ratthathammanun haeng raja anachakthai*, Bangkok : Phim Akson Limited Partnership, 2017.
- Fogelin, Lars, *An Archaeological History of Indian Buddhism*, New York : Oxford University Press, 2015.
- Mahamakut Buddhist Foundation, *The Tipitakapali Chabap Siamrath Lamthi 28* (Khu. Ja. 28/240/86), Nakhon Pathom : Mahamakuta-Raja-Vidyalyaya Press, 2013.
- Phraphomma khunaphon (Poh Or Payutto), *Charuek Asok Ratthasat haeng Thammathipatai*, Bangkok : Samnakphlitham, 2009.
- Phraphomma khunaphon, *Potchananukrom Buddhasat Chabap pramuantham*, 34th edition, Nakhon Pathom : Kansueksa Puea Santiphap Phradhammapitak, 2016.
- Phraya Raksakunmontri (Chuen Komarakul Na Nakhon), *Chek amad lae khonsakunbunnak*, Nonthaburi : Samnaksipanya, 2003.
- Plueng Na Nakhon, *Potchananukromnakrian chabappraprungrmai*, Bangkok : Thai Watthanaphanit Press, 2005.
- Rong Prapanphong, *10 Kasat Chakrivong*, Bangkok : Sathaphonbook, 2017.

- Vutthichai Mulasin and others, *Phramahakasat haeng Krungrattanakosin*, Bangkok : Alpha Milenniem, 2003.
- MGR Online. (2006, May 20) [Online]. “Kitokaserayokitau” Nailuang kap Phasokni konthaimuslim Retrieved from <http://www.manager.co.th/Local/ViewNews.aspx?NewsID=9490000066252>
- Phalakon Suwannarat. (2016, November 24) [Online]. Pathakathaphiset Rueng “Phraraja karaniyakit kabMuslim naiphaendinhai”. Retrieved from <http://www.muslimtoday.in.th/?modules=article&id=4551>
- Sapphasinsattrathirat. (2017, June 14) [Online]. Sunsueksakanphatthana-annueng machak phraratchadamri. Retrieved from <https://web.ku.ac.th/king72/center/center.htm>
- Beduin. (2016, October 29) [Online]. Nailuang Ratjakanthi 9 Phusongkhaoph-rathaisatsana Islam lae Muslim dithisut. Retrieved from <http://news.muslimthaipost.com/news/27380> ★

Federalization is a Tool of Conflict Resolution : A Case Study of Nepal

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Nepal was enduring with a perpetuating conflict due to class, ethnic, linguistic, regional and other discrimination created by a unitary and centralized state structure. Regional autonomy, identity, decentralization of power and preserving the right of minorities were major demands of the movements. The political change of 2006 along with the restoration of democracy built the strong ground for the federalism in Nepal. After this, the state promulgated a new federal constitution on 20 September 2015. The regional, ethnic and class conflicts are being managed with the implementation of the federalism. In federalism, the rights of minorities get preserved than in the unitary system of government. The provision of right of the minorities in the central, provincial and local level helps the assurance of their right. While the governing community does not behave with justice the minorities may demand for separate region, so they are alert for well being of the minorities. Thus federalism is considered to be one of the most important tools for establishment of peace. In this article I argue that the federal system has played an important role for conflicts resolution in Nepal which was active since decades. A major and common demand of various conflicts in Nepal was autonomy which is assured by the federalism. Protection of minorities' rights, recognition of all linguistics, ethnic, religious, minorities' identity and power sharing from central to local level through constitution has led to the long felt conflicts towards solution. Thus, federalism has played the vital role for power-sharing and assuring the autonomy for minorities groups in Nepal. It seems to be important tool for the ending Maoist, ethnic and regional movements in Nepal.

[Keywords : Federalism, Federalization, Conflict, Conflict resolution, Multi-dimensional conflict, Nepal]

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1. Introduction

Nepal was enduring with a perpetuating conflict due to class, ethnic, linguistic, regional and other discrimination created by a unitary and centralized state structure. In particular, the Madesh movement and ethnic movement due to the regional exclusion after the political change in 2006 and Maoist movement started from 13 February, 1996. Regional autonomy, identity, decentralization of power and preserving the right of minorities were major demands of the movements. The political change of 2006 along with the restoration of democracy built the strong ground for the federalism. After this, the state promulgated a new federal constitution on 20 September 2015 replacing the Interim Constitution of Nepal 2007. The various types of conflicts are being managed with the announcement of federalism. In this context, is federalism an important tool for conflict resolution in Nepal? This tries to answer this question.

This article is based on the secondary data and the content analysis method is applied to collect the data. The article is divided into five sub-chapters. First one is the introduction, second is understanding of federalism and conflict resolution, third one is historical development of concept of federalism and multi-dimensional conflict in Nepal. Similarly, fourth is federalism as a tool for conflict resolution in Nepal and finally, conclusion.

2. Understanding of Federalism and Conflict Resolution

There is no universally applicable definition of federalism and federal mode of governance. Many scholars have defined the federalism in several ways. However, there exist few similarities in those. Federalism is an approach to governance that divides public powers not only horizontally but also vertically. Generally, we can understand that federalism is traditionally considered to be a useful system or mechanism of limiting governmental power and constitutionally establishing balance between self-rule and shared rule. Similarly federalism is a non-centralized political system where legitimate authority is constitutionally guaranteed and it shares power through constitutional frameworks.

Federalism as a mode of governance is concerned with combining 'self-rule and shared rule' (Elazar, 1987). In this, self rule states for constitutional units of federal state which is able to conduct the governance system independently and autonomously while shared rule means participating in the decision making process through upper chamber. The definition of William H. Riker's (1975) seems more elaborated. According to him;

“Federalism is a political organization in which the activities of government are divided between regional governments and a central government in such a way that each kind of government has some activities on which it makes final decision” (Riker's 1975 cited in Lijphart, 1999; 186).

Elazar (1997; 239) emphasizes on non-centralization mode of governance. According to him federalism is the assignment of the powers to multi-level governance structures. He also focuses on constitutionally guaranteeing a division of power between central and non-central government. According to Elazar (1987; 190) Federalism should be understood both in its narrower sense as intergovernmental relations and in its larger sense as the combination of self-rule and shared- rule through constitutionalized power sharing in a non-centralized basis. Watts (2008) also focuses on self-rule and shared-rule. According to him “federalism is multi-tiered government combining elements of shared-rule and self-rule...It based on presumed value and validity of combining unity and diversity of accommodating, preserving and promoting distinct identities within a political union...it is both union and non-centralization in the same time” (p.8).

Federalism can be defined as a mode of governance that establishes more or less unity while preserving more or less diversity (Moreno and Colino 2010). Roy and Saunders (2006) give more emphasis to power sharing. According to them, power is constitutionally divided and shared between a general (usually national) government (or state) having certain nation wide responsibilities and constituent governments (or states) having broad regional or local responsibilities. The constituent members of the federal union can govern themselves autonomously while they and their citizens also participate together in the common national governing regime, which is autonomous within its sphere of constitutional authority (Kincaid, 2011).

Global experiences show that federalism can be established in two ways. First one is through coming together of different political states or communities to form a federal nation-state. For examples, United State in 1787-88, Australia in 1901 and Switzerland in 1848. Second way is to devolve powers from a unitary national government to regional and local governments through constitution. Spain 1978, Germany in 1949, Nepal 2015 are few examples of this kind of federalism. Elazar (1987:114) linked federalism to a dual political interest of the contemporary modern era; first, in creating more viable units of government ...to undertake vast new responsibilities and second in enhancing citizen participation in government to foster democracy.

While looking at definitions above, we can say that federalism is not only a division of power between central, provincial and local levels of governments but also it is powerful non-central mode of governance where power is available in each level of governments.

Similarly, the world is threatened by numerous conflicts between ethnic communities and states. Some conflicts are violent and some are hidden. Especially, economic injustice, historic revenge for lost self-determination, past discrimination, exclusion of recognition of the minority culture, lack of proper power sharing are the causes for increasing the conflicts in multicultural state

(Fleiner et al. 2003; 44). The lack of management for bringing religious, linguistic, ethnicity, regional, racial minorities in mainstream and assurance of their right augment the conflict. The major conflicts in the latest time around the world seem to be centered in identity and assurance of their right (Calhoun, 1993).

Majority of the unitary system states seem to give emphasis on the concept of single state, single language and single culture. These states either ignore or eliminate the multicultural diversity. This leads to conflict in multicultural, multi-religious, multi-linguistic, multi-ethnic states. These states do not take the diversity as sensitive aspect. Culture is an important factor for state-building. But in many unitary states, culture may be considered threat to the state and ignore it and promote the conflicts in the society (Fleiner et al. 2003). They do not accommodate the multi-cultural nature in the mainstream. If a cultural minorities demands political recognition, identity and autonomy, the unitary states mostly reject the claims and try to suppress the identity of minorities. As a result, the conflict gets elicited. More than half of internal conflicts around the world since 1989 have concerned disputes about controlling part of the state's territory (Topperwien 2009; 4).

While studying this nature it seems that federalism is an important tool for resolving the conflict. In particular, the federalism for resolving the minority-led conflict is being popular. Federalism can be a topic in peace negotiation. According to Topperwien (2009;3) federalism might be a useful means of conflict resolution in that it can provide a viable power between majority and non-majorities, groups and individual citizens.

Principally, federal mode of governance has adopted the policy of tolerance and equalizing minorities and majorities. For assuring the right of minorities, the asymmetric power sharing may be adopted. Asymmetric federal model has been a tool to facilitate cooperation in federal systems (Topperwien 2009;2). Federalism provides the minorities citizens and communities' autonomy and self-governance. Fleiner et al. (2003) argues that;

“Federalism offers a constitutional mechanism that not only tolerates but can also promote diversity... a federal state need not exclude culture but can use the value of cultural diversity to enable the whole society to participate in the endeavor of the state to seek justice, promote peace and protect liberty...so, federalism is a tool for a multicultural state to derive maximum benefit from diversity” (p.48).

Fleiner et al. (2003) further add that “only a balance between self-rule and shared rule can give communities the opportunity to promote their cultures within their territories. Only on this basis is it possible to provide the necessary base for the balanced development of all communities together with the majority of citizens and the people”.

3. Historical Development of Concept of Federalism and Multi-dimensional Conflict in Nepal

While dissecting the history of the origin of federal concept in Nepal, it seems to be connected with the regional and ethnic exclusion, centralization of power and inequitable distribution of resources. With the unification of modern Nepal by the Prithvi Narayan Shah in 1769, the Caste Hill Hindu Hill Elite Males (CHHEM) monopolized the political, economic, social and cultural power. Bahun, Chhetri, Newar and other Terai 'high caste' got better access to material resources while Dalit, indigenous nationalities, mid-level Madhesi caste, and Muslims are generally worse off (Lawati and Pahari 2010; 10). This kind of exercise has made the minorities deprived while hegemony of high caste Nepali language speaking class existed. This led the regional, ethnic and linguistic exclusion. The concept of federal governance seems to have elicited for the management of this.

The democracy was established in Nepal in 1951 by abolishing the 104 year long Rana Regime. At that time the regionally excluded madeshis, ethnic minorities and citizens from various communities were suffering the problem of exclusion. The minorities were deprived in every aspect and were discriminated. Madesh was made victim of internal colonization (Gautam, 2008:6). The problems of madshi went on increasing because Nepali society was multicoloured like rainbow while Nepal was mono-coloured with the hegemony of particular caste, class and region (Gyawali, 2007). The long felt exploitation, discrimination and exclusion in Madesh got institutionalized. While Madesh could not come into the mainstream of governance even after the establishment of democracy, it was in the mood of movement right after this (Gaige, 1975, Mishra, 2008, Yadav, 2003). Right after the restoration of democracy in 1951, a regional party named Terai Congress was established in 1952 and had demanded for autonomous Terai (Madesh) inside a federal system (Karki, 2015: 73). The major aim of that party was to establish the true democracy by dividing the Hill and Terai region of Nepal into two or more federal provinces on the basis of language, geology, financial and social organization, accommodate those self-governed and autonomous provinces in a single system called "Nepal Union" and power sharing for internal governance (Devkota, 1979: 22). But this concept could not get mass support even in Madesh and then got languished. Nevertheless, the demand for federalism in a way or the other got raised.

The report presented by Communist Party of Nepal in its general conference on January 26 to 30, 1954 stated "the right to regional autonomy should be provided to Madeshi according to the local self-governance" (Basnet, 2013 : 5). Though this party did not clearly demanded for the federalism, it had raised the concept of power sharing.

On 15 December of 1960, the then King Mahendra abolished the democracy and established one party Panchayat system. This system tried to eradicate the

multi-cultural Nepali society by establishing one language (Nepali), one dress (Daura-Suruwal) and basis of nationality (Monarchy) (Mathema, 2011 : 7). During that time, the Hill elites high class called themselves civilized and behaved Madhesi people as low class by calling them “Madhise” (Humo, 2007 : 17). The suppressed enthusiasm towards religion, language, dress and identity was ferreting for the way out. At the mean time, the Madhesh based Sadbhawana Party was emphasizing this issue (Singh, 2007: 7). The political reformation of 1990 provided good environment for drive out this kind of suppressed voice. Particularly, this political reformation was the establishment of democracy but there was no improvement in the unitary governance system. Nepal is a multi-ethnic, multi-linguistic, multi-religious and multi-cultural state where, 101 different castes, 92 languages, 10 religious groups exist (Rakesh, 2008: 13). But the Constitution of Nepal 1991 could not accommodate these multi-aspects and neither gave priority to autonomy and proper power sharing. Rather, it protected the concept of one caste (Brahmin, Chhetri) and one language (Nepali). This led to the movement on identity and autonomy one after another. The established democracy in the country, couldnot manages the diversity of Nepal that led to various conflicts (Mabuhang, 2012: 332). The Nepali language was made one language and the different caste people who had their own mother language had to study in Nepali without any alternative. The Constitution of Nepal 1991 provided religious freedom but people did not fully enjoy this freedom. For example, the some people from different religion than Hinduism were not allowed to kill cows because cow is considered national animal by constitution. The religious freedom was thus for only Hindus, not others (Shrestha, 2008: 130). Neither were they provided with autonomy by power sharing. Rather, this constitution made the unitary governacne system more strengthened (Baral 2007: 32)

Though the state could not accommodate the minorities in the mainstream it had provided the freedom of forming the political parties and become organized. On the basis of this, political parties, after this political change had presented their own agenda of federalism. Of the 44 new political parties registered in the Election Commission (EC) after 1990 political change 3 parties had stated their agenda of federalism in their statute. In this, Nepal Rastriya Jana Party demanded for ethnic based federalism, Sadbhawana Party demanded autonomy in Terai region and Nepal Rastriya Janamukti Morcha Party had demanded for administrative federalism (Karki, 2015: 33). The Janajati Party which was not registered in the EC also advocated for the federalism, in which it had proposed for reforming the unitary state into federal state. In this, they had included 12 lines in the party flag which meant the 12 province in the federal Nepal (Baral 2007: 33). Similarly, the Sadbhawana Party had proposed five provinces in Nepal which included Eastern Terai, Western Terai, Eastern Hill, Western Hill and Himal (Budha, 2011: 62). But this party could not bring considerable seats in the election and the state did not consider to this demand. This led to the confliction situation went on augmenting.

In the meantime, on February 13, 1996, the armed conflict of CPN Maoist started. Just before some days on February 4, 1996, the party had proposed a 40 point demand to the government which included the formation of autonomous units and addressing the ethnic and religion based discrimination providing the local autonomy. The point 20 stated the proposal of autonomy for ethnic dominated regions; point 22 stated the demand of powerful local autonomous bodies. With this, for eradicating the discrimination between Hill and Madesh, the regional autonomy was demanded for marginalized regions (Sharma and Pokharel, 2004: 139-42). According to Thapa (2014: 172), of the 40 point demands of Maoists, five points were based on ethnic group. This included i) Nepal should be declared a secular nation. ii) All racial exploitation and suppression should be stopped. Where ethnic communities are in the majority, they should be allowed to form their own autonomous governments. iii) Discrimination against downtrodden and backward people should be stopped. iv) All languages and dialects should be given equal opportunities to prosper. The right to education in the mother tongue up to higher levels should be guaranteed. v) Backward areas should be given regional autonomy. Right after proposing this the party started its armed conflict. CPN (Maoist) controlled a large swath of territory within a decade of launching an insurgency. The armed conflict led to the death of more than 13,000 people, in addition to many other costs of civil war such as destruction, displacement and gross human right abuses (Lawoti and Pahari 2010; 3).

While Maoists were actively intensifying their armed conflict all over the country, ethnic groups and Madeshi were also conducting their movement in different ways. Though, the state did not present any solid project of local autonomy, power-sharing and inclusion. This led for the indigenous nationalities movement in the eastern hills of Nepal for ethnic based inclusion, autonomy and proportional representation in parliament (Pokhrel and Pokharel, 2014: 5). This movement brought numerous politically and culturally marginalized ethnic groups together to end the political and social dominance of high caste Hindus, demand greater representation in the political system and revive their own waning cultural practices (Hangan, 2010; 1) and autonomy (Baral, 2007; 32).

In September 1994, just four years after a multi-party political system was restored in Nepal, the ethnic based Mongol National Organization party was established in eastern part of Nepal. This party demanded the autonomy to ethnic groups, create a federal rather than unitary polity and institute a proportional system of representation in all public institutions (Hangan 2010; 1-2).

In the meantime, the peace talk was held between the CPN Maoist and government of Nepal in 2002. In this peace talk the Maoist demanded for the assurance of ethnic and regional self-autonomy for exploited and excluded minority groups (Sharma and Pokharel, 2004: 158). Due to this demand the peace talk could not reach a conclusion and was breached. After this, the then King Gyanendra took the control over the democratic government by coup on January

14, 2005 and the autocratic monarchical system got resurgent (Karki, 2015: 74). After this, CPN (Maoist) ethnic groups, Madhes and Seven Party Alliances (SPA) started pro-democracy movements in different forms. But no result was gained.

The SPA and the CPN (Maoist) made a 12-point common understanding for fighting for the end of absolute monarchy and establishment of full democracy on November 22, 2005. This common understanding included “ending the absolute monarchy and establishing full fledged democracy to solve class, ethnic, caste, gender, and regional based political, economic, cultural disparities and progressive state restructuring for implementing the full fledged democracy” (Pokhrel and Pokharel, 2004 : 5).

In response to this common understanding, people’s movement started from April 6, 2006, the SPA and CPN (Maoist) jointly started the street movement. The 19 days long movement was successful to ending the absolute monarchy and the parliament was restored. The first meeting of the assembly on May 18, 2006, announced the establishment of the inclusive state system with restructuring of state. After this on June 16, 2006, a 8 points agreement was held between 7 party alliance and the Maoist party. The point no. 7 of that agreement contained “the restructuring of the state will be done for solving the class, ethnic, caste, gender and regional based problems through Constitution Assembly (CA) election. Then on November 21, 2006, there was a Comprehensive Peace Agreement (CPA) between the Government of Nepal and the CPN (Maoist) party”. The point no. 3.5 of the agreement states :

“In order to end discriminations based on class, ethnicity, language, gender, culture, religion and region and to address the problems of women, Dalit, indigenous people, ethnic minorities (Janajatis), Tarai communities (Madheshis), oppressed, neglected and minority communities and the backward areas by deconstructing the current centralised and unitary structure, the state shall be restructured in an inclusive, democratic and forward looking manner”.

On this basis, on January 15, 2007, the interim constitution with unitary governance system was promulgated without considering the federalism. The day after this, the Madesh movement started with the demand of federalism. The movement demanded for the federal governance system with autonomy by eradicating the discrimination, exclusion and inequality. It also demanded for population based proportional representation in the all mechanism of the government (Rakesh, 2008). An agreement was held on February 7 of the same year. Until then 38 Madhesi people were killed in the street movement (Gautam, 2008: 16). On February 7, an announcement was made by the contemporary Prime Minister Girija Prasad Koirala which stated that the interim constitution would be amended including federalism (Karki, 2015: 74). At the same time, the ethnic groups also started movement demanding the federal state. In agreement with the

Madhesh people and ethnic groups the amendment was made to article 138 and sub article (1. a) was added in the Interim Constitution. It states:

“Accepting the aspirations of indigenous ethnic groups and the people of the backward and other regions, and the people of Madhes, for autonomous provinces, Nepal shall be a Federal Democratic Republic. The provinces shall be autonomous with full rights. The Constituent Assembly shall determine the number, boundary, names and structures of the autonomous provinces and the distribution of powers and resources, while maintaining the autonomy, unity and integrity of Nepal”.

With this amendment, the agenda of ethnic groups, Madheshi and other minorities who were excluded got the constitutional status. After this, the federalism became common agenda of almost all the parties of Nepal. On April 10, 2008, the CA election was held. This CA could not solve the issue of state restructuring and it got dismissed on June 2012 (Karki, 2012:95). The next election of CA held on November 19, 2013. This CA promulgated the new constitution on 20 September 2015 with the provision of federalism.

4. Federalism is the Tools for Conflict Resolution in Nepal

In federalism, the right of minorities gets preserved than in the unitary system of government. While the political power is divided into various regions and communities, the monopoly of one community does not exist. If a community with majority tries to suppress the minority group in any region, the centre or other entities raise voice and solve the problem. The provision of right of the minorities in the central and provincial level helps the assurance of their right. While the governing community does not behave with justice the minorities may demand for separate region, so they are alert for well being of the minorities. Thus federalism is considered to be one of the most important tools for establishment of peace.

Federalism is an important tool for ending the multi-dimensional conflict in Nepal. Nepal faced Maoist armed conflict from 1996 to 2006 and ethnic conflict in eastern part and regional conflict in the southern part of Nepal. The major common demand of these all conflicts are to ensure the autonomy, protection of minority rights, secularism, power sharing and federalism as well. First amendment of Interim Constitution of Nepal 2007 assured and the Constitution of Nepal 2015 institutionalized the federalism in Nepal. It is believed to be successfully addressing the Maoist, Madheshi and ethnic conflict.

The federal governance system with local autonomy, power sharing and secularism has helped in management of class, ethnic, caste, religion, gender and regional based exploitation and exclusion in Nepal. The Maoist, ethnic and Madheshi movement, had presented their demands specially recognition of diversity, autonomy and power sharing. These groups demanded for accommodating the multiculturalism and diversity in the mainstream of politics of

Nepal. The unitary state mechanism did not give concern to this issue rather it taking as a threat to national sovereignty. In this context, the federalism has played important role as a tool for the management of multi-dimensional conflicts in Nepal.

The federal constitution of Nepal 2015 has provided the local autonomy. Similarly, there exists power sharing between central, province and local level through constitution. There are 7 provinces and 766 local governments in Nepal. There are various provisions in the constitution for protection of minorities rights and has included the issues like secularism, linguistic freedom and regional autonomy among others.

The constitution of Nepal 2015 has managed the issues raised by the ethnic groups, Madhesi and CPN (Maoist). The preamble of constitution includes eradicating forms of discrimination and oppression created by the feudalistic, autocratic, centralized, unitary system of governance. Similarly it has also ensured for protecting and promoting social and cultural solidarity, tolerance and harmony, and unity in diversity by recognizing the multiethnic, multi-lingual, multi-religious, multi-cultural and diverse regional characteristics, resolving to build an egalitarian society founded on the proportional inclusive and participatory principles in order to ensure economic equality, prosperity and social justice, by eliminating discrimination based on class, caste, region, language, religion and gender and all forms of caste-based untouchability. It has accommodated and recognized the diversity in the main stream of Nepalese society. More than 92 percent members of CA have passed this constitution. In this way, federalism provides the minority citizens and communities' autonomy and self-governance by providing the favourable ground.

5. Conclusion

The federal system has played an important role for conflicts resolution in Nepal which was active since decades. The minority people had been struggling a lot due to the unitary system of governance in Nepal along the history. They desired autonomy and identity which had been ignored by the unitary government. As a result the conflicts were rife in the country. The constitution of Nepal 2015 assured for the federalism and along with this the conflicts have been minimized.

Gurr (2000; 195) says, conflicts are often rooted in a desire for increased autonomy from the central state. A major and common demand of various conflicts in Nepal was autonomy which was assured by the federalism. Similarly, protection of minorities' rights, recognition of all linguistics, ethnic, religious, minorities' identity and power sharing from central to local level through constitution has led to the long felt conflicts towards solution. Thus, federalism has played the vital role for power-sharing and assuring the autonomy for minorities groups in Nepal. It seems to be important tool for the ending Maoist conflict and ethnic and madhesi movement in Nepal.

References

- Baral, B., *State Restructuring should be Like This* (In Nepali), Kathmandu : Autonomous Governance Concern Forum, 2007.
- Basnet, T. B., *Historical Documents of People's Revolution and Nepali Communist Movement*, Part-1 (In Nepali), Kathmandu : Samana Publication, 2013.
- Budha, R. B., *Right of Ethnicity and Issues of Federalism* (In Nepali), Kathmandu : Central office of All Nepal Indigenous Nationalities, 2011.
- Calhoun, C., "New Social Movements of the Early Nineteenth Century", *Social Science History*, 17(3), 1993, 385-428.
- Devkota, G.B., *Political Mirror of Nepal* (In Nepali), Kathmandu : Grisma Bahadur Devkota, 1979.
- Elazar, D. J., "Contrasting Unitary and Federal Systems", *International Political Science Review*, 18(3), 1997, 237-51.
- Elzar, D. J., *Exploring Federalism*, Tuscaloosa : University of Alabama Press, 1987.
- Fleiner, T. at. al., "Federalism, Decentralization and Conflict Management in Multicultural Societies", *Politorbis*, No 32-1/2003, 2003, 39-57.
- Gaige, F. H., *Regionalism and National Unity in Nepal*, Berkeley and Los Angeles : University of California Press, 1975.
- Gautam, B., "Madhesh Revolt: Politics of Depression", Bhaskar Gautam (ed.), *In-depth information of Madhesh Revolt* (In Nepali), Kathmandu : Martin Chautari, 2008.
- Gurr, T. R., *Peoples versus States : Minorities at Risk in the New Century*, Washington, DC : United States Institute of Peace Press, 2000.
- Gyawali, P., "New Dimension of Madhesh Problem", *Kathipur National Daily* (In Nepali), 29 December, 2007, 7.
- Hangen S. I., *The Rise of Ethnic Politics in Nepal : Democracy in the Margins*, New York : Rutledge, 2010.
- Humo, K., Discrimination towards Madheshi and Movement for Equality. Basanta Thapa, Mohan Mainali (eds.), *Madhesh : Problems and Possibilities* (In Nepali), Lalitpur : Social Science Baha, 2007, 141-149.
- Karki, B., (2015), Debate of Federalism and State Restructuring in Nepal. In Participatory Constitution Writing Process and Content in Nepal. pp. 67-100. Kathmandu: UNDP/SPCBN. (In Nepali).
- Kincaid, J., "Editor's Introduction: Federalism as a Mode of Governance", Kincaid, (ed.), *Federalism*, Volume 1 : Historical and theoretical foundations of federalism, London : Sage Publications Ltd., 2011, XXI-XXXV.
- Lawati, M. and A. Pahari, *The Maoist Insurgency in Nepal : Revolution in the Twenty- First Century*, New York : Rutledge, 2010.
- Lijphart, A., *Patterns of Democracy : Government forms and performance in Thirty-Six Countries*, Chapter 10 : Division of Power, New Haven, CT : Yale University Press, 1999, 185-199.

- Mabuhang, B. K., "High Caste Hegemony, Minority and Identity based Federalism", Chaitanya Mishra and Om Gurung (eds.), *Ethnicity and Federalization in Nepal*, Kathmandu : Central Department of Sociology/Anthropology, 2012, 325-360.
- Mathema, K. B., *Madheshi Uprising : The Resurgence of Ethnicity*, Kathmandu : Mandala Book Point, 2010.
- Mishra, C., *Changing Nepalese Society* (In Nepali), Rajendra Maharjan (ed.). Kathmandu : Fine Print, 2008.
- Moreno, L. and C., Colino (eds.), *Diversity and Unity in Federal Countries*, Montreal & Kingston : McGill-Queen's University Press, 2010.
- Pokhrel R. and B. P. Pokhrel, "Debate of Federalism in Nepal : Historical Background and Context", *Searching for Common Agenda in New Constitution* (In Nepali), Kathmandu : JURI, Nepal, 2017, 1-7.
- Rakesh, R. D., *Media in Madhesh Movement* (In Nepali), Kathmandu : Freedom Forum, 2008.
- Roy, K.L. and C. Saunders (eds.), *Legislative Executive and Judicial Governance in Federal Countries*, Montreal & Kingston : McGill-Queen's University Press, 2006.
- Sharma, S. and S. Pokhrel, *Peace Talk, Experiences of Past and Challenges of Future* (In Nepali), Kathmandu: National Peace Campaign, 2004.
- Shrestha, M. L., "Ethnic Autonomy in Historical Context", Sitaram Tamang (eds.), *State restructuring in the context of Nepal* (In Nepali) Kathmandu : Samana Publication, 2006, 126-136.
- Singh, R. P., "Pain of New Era", *Samaya* (In Nepali), 30 July, 2007, 32-33.
- Thapa, D., "Promissory Note: Nepal's Left Movement and the Janajatis", Marine Carrin, Pralay Kanungo and Gerard Toffin (eds.), *The Politics of Ethnicity in India, Nepal and China*, New Delhi : Primus Books, 2014, 169-186.
- Toperwien, N., (2009), *Federalism and Peace Mediation*. CSS ETH Zurich : Swiss Peace http://www.css.ethz.ch/content/dam/ethz/special-interest/gess/cis/center-for-security-studies/pdfs/PME_Federalism.pdf Accessed on 03 October 2017.
- Watts, R. L., *Comparing Federal Systems*, Chapter 1.4: Definition of terms and of principles of federalism, Canada : Institute of Intergovernmental Relations, Queen's University, 2008, 8-19.
- Yadav, U., *Issues of Liberation of Madheshi and Nepalese People* (In Hindi), Patana : Madheshi People Rights Forum, 2003. ★

Combating Violence against Women in India

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Violence affects the lives of millions of women worldwide, in all socio-economic and educational classes. It cuts across cultural and religious barriers, impeding the right of women to participate fully in society. Violence against women is considered a major violation of human rights. It is also a major public health problem. A wide range of physical, mental, sexual and reproductive and maternal health problems can result from violence against women. Violence against women is associated with sexually transmitted infections such as HIV/AIDS, unintended pregnancies, gynecological problems, induced abortions, and adverse pregnancy outcomes, including miscarriage, low birth weight and fetal death. The age old cultural beliefs and tradition have identified various issues of gender-based violence that over the period of time has become a major cause of harassment faced by the women. The present paper has three objectives : first, to clarify the meaning of violence against women; Second, to examine global or international as well as national efforts made so far to combat violence against women; and lastly, suggest ways and means to improve the situation. Naturally, the sources and material used in such an analysis are mainly secondary in nature and this paper is no exception to it.

[**Keywords :** Violence against women, Gender-based violence, Human rights, Public health problem]

1. Introduction

Women from past centuries have changed the world in many different ways and have also paved the way for future women. During historical times, many women achieved many different goals but still remained unequal and inferior to men. However, in recent years, the empowerment of women has been recognized as

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the central issue in determining the status of women. The contribution of the women in the development is crucial so to involve them in the main stream of development most of the countries have to empower women. The modern woman is consumed with many obligations, duties, and responsibilities on a daily basis. Women are now stepping out of their historical role of mother and housewife to obtain a higher quality of living. The modern women have a much different lifestyle with many different choices. The independence that 21st century women have is one that only women from past centuries could dream about. Women in the 21st century are independent in terms of doing things for themselves, like working and or furthering their education. Women's independence is very important to them these days and many developed countries claim that they have achieved the goal of gender equality or women are marching fast to achieve this goal even in developing countries.

In spite of the prosperity, globalization, universal education, equal opportunities in various fields and gender equality, we have failed to eliminate the violence against the women globally. According to the U.N., over 70% of women experience some sort of violence during their lives and 20% become a direct victim of rape or an attempt on rape. Gender violence is a common problem prevailing in almost all the countries. Even in India the issue continues unabated creating many hassle and challenges for the social growth. The age old cultural beliefs and tradition have identified various issues of gender- based violence that over the period of time has become a major cause of harassment faced by the women.

Violence by an intimate partner is one of the most common forms of violence against women, though many women do not seek help or report violence when it occurs. Physical and sexual abuse by a partner is closely associated with injuries. Violence by an intimate partner is the leading cause of non-fatal injuries to women in the countries like USA. It has been reported that a woman is beaten every 18 minutes in the United States. Indeed, violence by an intimate partner is the leading cause of injury among women of reproductive age in the United States. Between 22 and 35 per cent of women who visit emergency rooms are there for that reason.¹

Violence against women in India is not just a current issue, but rather has deep seated traditional roots in the culture. In India, the problem of violence against women is a result of a long standing power imbalance between men and women. Men have control over access to property and resources. There is also a sexual division of labour in India that results in female exploitation— physically, mentally and commercially. Moreover, the change processes like urbanization, industrialization, westernization, modernization and globalization have changed many traditional values and norms that provided family support systems to women. This has resulted in alarming increase in the domestic violence in India.²

Violence against women in India is evident from the fact that a total of 3,39,457 crimes were reported in 2014 according to NCERB⁴ data. The figures were

3,29,243 in 2015 and 3,38,954 in 2016. Majority of cases under crimes against women were reported under 'Cruelty by Husband or His Relatives' (32.6%) followed by 'Assault on Women with Intent to Outrage her Modesty' (25.0%), 'Kidnaping & Abduction of Women' (19.0%) and 'Rape' (11.5%). Uttar Pradesh reported 14.5% (49,262 out of 3,38,954 cases) of total cases of crimes against women followed by West Bengal (9.6%) (32,513 cases) during 2016. Delhi UT reported the highest crime rate (160.4) compared to the national average rate of 55.2.

2. Aim of the Paper

Violence against women is a gender related issue. When we classify human beings into male and female, that is done on biological basis, i.e. on the basis of sex. But when we talk about gender (i.e., male and female), then that further involves access over to social, political, economic, religious, cultural, educational, health, civilizational and communicative opportunities. This is a global issue affecting the women throughout the globe. The present paper has three objectives : *first*, to clarify the meaning of violence against women; *Second*, to examine global or international as well as national efforts made so far to combat violence against women; and *lastly*, suggest ways and means to improve the situation. Naturally, the sources and material used in such an analysis are mainly secondary in nature and this paper is no exception to it.

3. Meaning of Violence against Women

Domestic Violence may be described as the situation where one adult in a relationship misuses power to control another. It is the establishment of control and fear in a relationship through violence and other forms of abuse. This is the reason that 'domestic violence' is synonymous with domestic abuse. It is an abuse which manifests itself when a spouse or a family member violates another physically or psychologically. The term domestic violence is normally used for violence between husband and wife but also encompasses live-in relationships and other members of families who live together.

The term 'domestic violence' is used to describe the exploding problem of violence within homes. This type of violence is towards someone whom we are in a relationship with, be it a wife, husband, son, daughter, mother, father, grandparent, daughter-in-law or any other family member. It can be a male's or a female's atrocities towards another male or a female. Anyone can be a victim and a victimizer. Although both men and women can be abused, but the victims are women in most of the cases. This is the reason that generally domestic violence connotes the violence against female members of the family. Children in homes where there is domestic violence are also abused or neglected. Although the woman is usually the primary target, violence is sometimes directed toward children, and sometimes toward family members and friends.

Domestic violence has a tendency to explode in various forms such as physical abuse and assault, sexual assault and threats or emotional abuse. Sometimes it is more subtle, like making someone feel worthless, not letting one to have any money, or not allowing one to leave the home, while in other situations it may lead to physical assault. It may be in the form of hitting or fighting or an occasional argument. Even social isolation and emotional abuse can have long-lasting effects like the physical violence which is a blatant abuse of power because the abuser (generally male member of the family) tortures and controls the victim (generally the female member of the family) by calculated threats, intimidation and physical violence.

According to The Protection of Women from Domestic Violence Act, 2005 Domestic violence includes “harms or injures or endangers the health, safety, life, limb or well-being, whether mental or physical, of the aggrieved person or tends to do so and includes causing physical abuse, sexual abuse, verbal and emotional abuse and economic abuse; or harasses, harms, injures or endangers the aggrieved person with a view to coerce her or any other person related to her to meet any unlawful demand for any dowry or other property or valuable security; or has the effect of threatening the aggrieved person or any person related to her by any conduct mentioned in clause (a) or clause (b); or otherwise injures or causes harm, whether physical or mental, to the aggrieved person.”³

It may be seen that various connotations of domestic violence have certain common features : domestic violence is a pattern of abusive behaviour (as contrasted to a single event); the abusive behaviour involves control, coercion, and/or power; the abusive behaviour may be physical, sexual, emotional, psychological, and/or financial; and the victim of the abusive behaviour is a cohabitating or non-cohabitating intimate partner or spouse.

4. Global Efforts for Combating Violence against Women

The 1993 United Nations Declaration on the elimination of violence against women provides a very broad and inclusive framework.

Violence against women means any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life. (General Assembly resolution 48/104 of 20 December 1993, Article 1).⁵

Specifically, the Declaration outlines a broad variety of acts and circumstances that are included in this definition :

Physical, sexual and psychological violence occurring in the family, including battering, sexual abuse of female children in the household, dowry-related violence, marital rape, female genital mutilation, and other traditional practices harmful to women, non-spousal violence and violence related to exploitation;

Physical, sexual and psychological violence occurring within the general community, including rape, sexual abuse, sexual harassment and intimidation occurring at work, in educational institutions and elsewhere, and trafficking in women and forced prostitution;

Physical, sexual and psychological violence perpetrated or condoned by the State, wherever it occurs.⁶

The Declaration recognizes that some groups of women are particularly vulnerable to violence, such as: women belonging to minority groups, indigenous women, refugee women, migrant women, women living in rural or remote communities, destitute women, women in institutions or in detention, female children, women with disabilities, elderly women and women in situations of armed conflict. Subsequent international legal and policy instruments have expanded this framework to trafficking for sexual exploitation, sexual and gender-based violence in conflict including forced pregnancy, and explored the question of deliberate exposure to HIV/AIDS.

Article 29 of the Beijing Declaration, 1995 says that ‘we are determined to prevent and eliminate all forms of violence against women and girls’, and in spite of a global plan of action, the crimes against women and girls globally and especially in India are yet on the increase. Although, there are multifaceted nature of violence against women, which may marginally differ in different societies and varied cultural communities world over yet, it calls for different strategies to deal with such a variegated violence. However, I would like to view this issue of violence against women not merely in the context of woman who represents a ‘distinct adult identity’ of society but in a wider gender perspective, including also the ‘unborn female’.

The General Assembly of UNO designated 25 November as the International Day for the Elimination of Violence against Women, by resolution 54/134 of 17 December 1999, and invited all concerned to organize activities to raise public awareness of the problem. Historical evidences show that three Mirabal sisters were brutally assassinated by the political activists in the Dominican Republic, on orders of Dominican ruler Rafael Trujillo in 1960. Since 1981, woman’s activists have marked 25th November as a day against the violence targeted towards women. The General Assembly adopted declaration on the Elimination of Violence against Women on 20th December, 1993.

General Recommendation 19 (1992) on violence against women of the Committee on the Elimination of Discrimination against Women confirmed that gender-based violence is discrimination within the meaning of article 1 of the Convention on the Elimination of All Forms of Discrimination against Women, thus bringing this concern within the human rights framework

On 8th March, 2005, United Nations also expressed its deep concern regarding violence against women. In UN Seminar, some astonishing facts were revealed which are as follows :

- ▶ Earlier, it was believed that uneducated and illiterate people used to oppress their women. But now, it is found that women are more unsafe inside their homes rather than outside.
- ▶ Women are the part of violence every where whether it is developed/developing country or rich/poor family.
- ▶ Violence is one of the major factors responsible for deaths or physical inability of women among the age group of 16 to 44 years in the whole world.
- ▶ In developed countries like USA, every year more than 70,000 of women become the victims of rape case or sexual harassment. In India :
 - Every 26 minutes a woman is molested.
 - Every 54 minutes a rape takes place.
 - Every 4 minutes a woman is kidnapped.
 - Every 10 minutes a woman is burnt to death over dowry.
 - Every 7 minutes a criminal offence against women takes place.
 - Dowry deaths have gone up from 5,513 in 1996 to 6,917 in 1998.
 - Cases of rape from 14,846 to 15,031.
 - Torture from 35,246 to 41,318.
 - Molestation from 28,939 to 31,046.
 - Sexual harassment from 5,671 to 8,123.

In 2006, the Secretary-General's In-Depth Study confirmed that violence against women—whether in the home, workplace or elsewhere—is a particularly egregious human rights violation that must be eradicated. Although the 1981 Convention on the elimination of All Forms of Discrimination against Women (CEDAW) does not explicitly mention violence against women,¹ the Committee to Eliminate Discrimination against Women, which is responsible for interpreting and monitoring the implementation of CEDAW, has clarified in its general recommendation no. 19 (1992) that states parties to the convention are under an obligation to take all appropriate means to eliminate violence against women.²

The United Nations Secretary-General's Campaign UNiTE to End Violence against Women has proclaimed the 25th of each and every month as "Orange Day," a day to raise awareness of and take action to end violence against women and girls. As the bright and optimistic colour for the UNiTE Campaign, orange represents a future free from violence against women and girls. Orange Day calls upon activists, governments, and UN partners to mobilize people and highlight issues relevant to preventing and ending violence against women and girls, not only once a year on the International Day for the Elimination of Violence against Women on 25th November, but every month.

In 2016, a new global development agenda was adopted and ratified by every UN Member State. Through its 17 goals and 169 targets, the 2030 Agenda for

Sustainable Development, an agenda for global action for the next 15 years, addresses the three dimensions of sustainable development: economic, social, and environmental. The Agenda recognizes gender equality and the empowerment of women as a key priority and pledges that “no one will be left behind.” Goal 5 of the agenda aims to “Achieve gender equality and empower all women and girls” and includes specific targets to eliminate all forms of violence against women and girls. All goals are integrated and indivisible, therefore their achievement is also fully dependent on ensuring parallel and interconnected implementation to prevent and eliminate violence against women and girls.

Despite many efforts by States, UN organizations and agencies and civil society, progress on the ground in fighting violence and impunity has been insufficient and inconsistent in all parts of the world. Violence against women and girls cannot be eliminated unless there are sufficient resources and political will to effect change. Elimination of violence must be a priority at all levels—local, national, regional and international—and commitment demonstrated at the highest levels through sufficient resources and determined efforts.

5. Efforts for Combating Violence against Women in India

Traditionally, an Indian woman had four fold status-role sequences. These were her role as a daughter, wife, housewife (homemaker), and mother. The woman, whose status and role traditionally was well defined and almost fixed in the society, is now experiencing far-reaching changes. The woman in modern times is entering into certain new fields that were unknown to the woman’s sphere of role-sets. They are activating participating in social, economic, and political activities. However, they are still considered weaker section and have to face discrimination in various fields. The reasons are social, cultural and economic. Some religions including cultural beliefs consider that women are subordinate to men and this percolates to the children within the family consciously and subconsciously through the process of socialization. So the society takes it granted that women are inferior to men and this becomes the starting point of the discrimination. India is traditionally a patriarchal society where male domination is immense and women are under social control till the time of their birth to their birth.

Presently Indian women are facing toughest time as far as their routine personal and life is concerned. Mental and physical torture of women has become quite common and their safety is at stake. One of the problems behind this situation is lack of knowledge of legal and constitutional rights of a woman. Most unfortunate part of this is even women are not fully aware about their rights.

After Independence lots of provisions have been introduced to improve the social condition of women and to give them a platform where they can utilize their potential for their betterment and contribute positively towards the growth of their

country. The rights and safeguards enshrined in the constitution for women in India are listed below :

- ▶▶ The state shall not discriminate against any citizen of India on the ground of sex [Article 15(1)].
- ▶▶ The state is empowered to make any special provision for women. In other words, this provision enables the state to make affirmative discrimination in favour of women [Article 15(3)].
- ▶▶ No citizen shall be discriminated against or be ineligible for any employment or office under the state on the ground of sex [Article 16(2)].
- ▶▶ Traffic in human beings and forced labour are prohibited [Article 23(1)].
- ▶▶ The state to secure for men and women equally the right to an adequate means of livelihood [Article 39(a)].
- ▶▶ The state to secure equal pay for equal work for both Indian men and women [Article 39(d)].
- ▶▶ The state is required to ensure that the health and strength of women workers are not abused and that they are not forced by economic necessity to enter avocations unsuited to their strength [Article 39(e)].
- ▶▶ The state shall make provision for securing just and humane conditions of work and maternity relief [Article 42].
- ▶▶ It shall be the duty of every citizen of India to renounce practices derogatory to the dignity of women [Article 51-A(e)].
- ▶▶ One-third of the total number of seats to be filled by direct election in every Panchayat shall be reserved for women [Article 243-D(3)].
- ▶▶ One-third of the total number of offices of chairpersons in the Panchayats at each level shall be reserved for women [Article 243-D(4)].
- ▶▶ One-third of the total number of seats to be filled by direct election in every Municipality shall be reserved for women [Article 243-T(3)].
- ▶▶ The offices of chairpersons in the Municipalities shall be reserved for women in such manner as the State Legislature may provide [Article 243-T(4)].

Besides the above constitutional safeguards various legislations also contain several rights and safeguards for women such as Indian Penal Code (1860), Dissolution of Muslim Marriages Act (1939), Factories Act (1948), Minimum Wages Act (1948), Mines Act (1952), Hindu Marriage Act (1955), Hindu Succession Act (1956), Immoral Traffic (Prevention) Act (1956), Dowry Prohibition Act (1961), Maternity Benefit Act (1961), Medical Termination of Pregnancy Act (1971), Indian Christian Marriage Act (1872), Code of Criminal Procedure (1973), Equal Remuneration Act (1976), Family Courts Act (1984), Indecent Representation of Women (Prohibition) Act (1986), Muslim Women (Protection of Rights on Divorce) Act (1986), Commission of Sati (Prevention) Act (1987), Legal Services Authorities

Act (1987), National Commission for Women Act (1990), Pre-Conception and Pre-Natal Diagnostic Techniques (Prohibition of Sex Selection) Act (1994) and the Protection of Women from Domestic Violence Act, 2005 which is a comprehensive legislation to protect women in India from all forms of domestic violence. It also covers women who have been/are in a relationship with the abuser and are subjected to violence of any kind—physical, sexual, mental, verbal or emotional. Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act (2013) provides protection to women from sexual harassment at all workplaces both in public and private sector, whether organized or unorganized.

In spite of these constitutional safeguards and legislations to protect women in India, the violence against them continues in various forms. Sexual violence in India is still a grave issue and has deep roots. India's patriarchal and misogynistic culture is responsible for a society in which women are considered a liability or a burden on their families. The dowry system, although prohibited by law, has reinforced this problem. Additionally, male domination has led to growing rates of violent acts such as dowry deaths, domestic abuse, and rapes. Sixty million women are considered 'missing' from the population in India due to these crimes. Furthermore, the justice system is excruciatingly slow and as a result many perpetrators of violence go unpunished. Indian society tends to blame the victims of rape and usually places the burden of proof on the victim rather than on the perpetrator.

The Government of India has committed to eliminating violence against women and girls through numerous policies, laws, and programs, yet one in three women aged 15–49 experiences some form of physical or sexual violence during her lifetime. Late Professor Rajeshwar Prasad in his paper on "Combating Crime against Women : The Role of NGOs, Media and the Public"⁷ has emphasized that combating crimes against women is not an easy task since these crimes are deeply rooted in culture, economy, polity, and social structure as also the psyche of both male and female population of a society. Combating these crimes by peaceful means is more difficult because the violence behind all criminal acts against women is too eminent and can hardly be eradicated by the 'change of hearts'. The violent means as envisaged in the struggle for independence by the freedom fighters, or fighting against insurgency by the army or using strategies to combat terrorism or fighting the organized crimes by the people, may also be irrelevant in this context. However, one may advocate a mix of the two means—peaceful and coercive, and 'violent and deterrent'.

Non-government organizations can play an important role in combating violence and crime against women in India. However, the civil society network in India is very weak, unorganized, and ineffective and in some cases dishonest. The civil society organizations in the country largely function in soft areas and particularly in such fields where State and/or other financial support is easily available. Female

victimity is neither soft nor there are packages of easy money available from the State or other sources hence, little involvement of NGOs in this field of action.

The role of media in combating crimes against women is also very important as the media has been a pervasive force in not only highlighting the ugly face of criminality against women but also to create a public opinion against it. It is perhaps true that majority of viewers prefer watching crime-bulletins and take interest in crimes against women, however, the practice followed by many TV channels to repeat the same incidence of crimes against women, again and again is not only depressing but also derogatory unless followed by information regarding the actions taken by the police and other related agencies in such incidents. It may be borne in mind that there is a big difference in *sensitization*, *sensationalization* and *scandalization*. The role of the media should be to sensitize the viewers; the repetition of incidents of crimes against women on TV may sensationalize the issue or even at times scandalize the victims.⁸

It is emphasized that the watchdog function of the media to keep the police, magistracy, judiciary and even the NGOs alert, and on their toes, in cases of crimes against women, must be recognized. The function could be successfully and effectively performed only by well-trained, legally educated and experienced journalists and highly motivated and committed editors. The non-motivated, ill-experienced and quasi-educated journalists may even spoil the situation. It is no doubt, true that the media can certainly strengthen the local, regional and even national voluntary action to combat crimes against women in India.⁹

6. Suggestions for Combating Violence against Women in India

There are many laws to protect women, but the regulation is very bad. After the Nirbhaya case, the setting up of high speed courts for addressing women's grievances were planned. These kind of measures are good. As they say, justice delayed is justice denied. Speedy redressals will encourage more women to come up, and eventually, the perpetrators will be punished accordingly. Corruption free police officers, and an efficient justice system will go a long way to combat violence and crime against women in India. Still we need stringent laws and stringent regulation to fight violence and crime against women in India. It is true that legislation by itself would not suffice because violence against women is a deep rooted social problem. It is worth quoting late Prime Minister, Jawaharlal Nehru⁶, who remarked that legislation cannot by itself normally solve deep rooted social problems. One has to approach them in other ways too, but legislation is necessary and essential and hence that it may give that push and have educative factors, as well as the legal sanctions behind it, which help public opinion to be given a certain shape.

Some of the suggestions for combating violence against women in India are as follows :

1. There is need for awareness among women. Women generally do not report the crimes against them, due to societal issues, and the so called “tarnishing of image” of herself/family, in front of others. That should be stopped and more friendly approach is needed on the part of law enforcing agencies.
2. Safety of women is directly related to patriarchal mind sets that manifests itself in streets, homes and workplaces. A mentality which undermines women, and treats them as inferior needs to be changed. By treating women equally, and teaching the next generation the same, we can make a lot of change in the status quo.¹⁰
3. For the emancipation of women in every field, economic independence is of paramount importance. Along with economic independence, equal emphasis must also be laid on the total development of women-creating awareness among them about their rights and responsibilities - the recognition of their vital role and the work they do at home.
4. Major surgery is required and not merely cosmetic changes. Awakening of the collective consciousness is the need of the day. Change of heart and attitude is what is required.
5. If a number of women of like-minded views join hands, form an organization and raise their voice against women’s suffering, they can make their presence felt as also make an impact. It is, therefore, necessary that more and more women’s organizations be developed to create awareness among women to fight against their oppression as also men who exploit, humiliate and torture them.
6. It is suggested that a concerted effort by the government, non- government organizations and people at large may result in empowerment of women, which may ultimately control the violence against them.
7. The social context in which violence is committed or atrocities are inflicted on women and in which the victim recovers and adjusts has to be examined and assessed in a holistic perspective. Social scientists have to address themselves to the social problems like gender equality and female exploitation in order to consolidate their appreciation of social dynamics.
8. There is need for developing programmes to make the women morally strong or empowered because, bestowing judicial rights or making women literate alone can never end the violence against them. Promoting gender equality in educational institutions and widen access to education for girls can also be helpful.
9. Breaking the cycle of abuse will require concerted collaboration and action between governmental and non-governmental actors, including educators, health-care authorities, legislators, the judiciary and the mass media.

10. Training elected local government representatives to work to reduce the incidence of violence in communities and to become vocal opponents of violence against women and girls and alcohol abuse should be implemented.
11. Violence against women and girls is rooted in gender-based discrimination and social norms and gender stereotypes that perpetuate such violence. Given the devastating effect violence has on women, efforts have mainly focused on responses and services for survivors. However, the best way to end violence against women and girls is to prevent it from happening in the first place by addressing its root and structural causes. Prevention should start early in life, by educating and working with young boys and girls promoting respectful relationships and gender equality.
12. Speedy redressals will encourage more women to come up, and eventually, the perpetrators will be punished accordingly. Corruption free police officers, and an efficient justice system will go a long way.

6. Conclusions

Violence Against Women continues to be one of the most prevalent and least recognized human rights violations in the world. In India, this occurs in many forms: domestic violence, sexual assault, public humiliation, abuse, trafficking and 'honor' killing. One in every two women in India experience violence in their daily life. It must be emphasized that violence against women is a social, economic, developmental, legal, educational, human rights, and health (physical and mental) issue. All the efforts should be taken to eliminate all forms of violence against women. It is rightly said "Every problem has a solution." Women cannot solve the problems by themselves. Women should understand men and men should understand women. Both should work together to eradicate the menace. Let's join hands to allow this section of the society to live gracefully and with dignity and hope that with the incorporation of above stated suggestions, the high degree of violence against women in our society would become a thing of past in this new millennium because the stark reality is that the future of development of society lies in the future of women equally with men.

References

1. Surabhi Mahajan and Sanjeev Mahajan, "Domestic Violence in India" in *Contemporary Social Sciences*, Vol. 21, No. 1 (January), 2012, 29.
2. Surabhi Mahajan and Sanjeev Mahajan, *Ibid.*, 29.
3. *The Protection of Women from Domestic Violence Act, 2005*, 4.
4. NCRB, *Crime in India 2016*, New Delhi : Ministry of Home Affairs, Government of India, 2017, xix.

5. UN General Assembly, 1979. **Convention on the Elimination of All Forms of Discrimination Against Women**, <http://www.un.org/womenwatch/daw/cedaw/text/econvention.htm>
6. **Committee on the Elimination of Discrimination against Women**, 1992, General Recommendations no. 19, 11th Session, “Violence Against Women.” <http://www.un.org/womenwatch/daw/cedaw/recommendations/recommn.htm#recom.19>.
7. Rajeshwar Prashad, “Combating Crime against Women : The Role of NGOs, Media and the Public”, **Journal of National Development**, Vol. 21, No. 2. (Winter), 2008, pp. 1-24.
8. Unicef, **Domestic Violence against Women and Girls**, Florence, Italy : United Nations Children Fund, Innocent Research Center, June 2000., 28.
9. Sanjeev Mahajan, “Combating Violence against Women”, **Violence against Women**, New Delhi : Empire Book International, 2017, 183-196.
10. For details See, <https://www.quora.com/How-can-we-stop-violence-against-women-in-India>. ★

Global Warming : Policy Formulations to Regulate

Vichitra Gupta*

Global warming is a serious problem faced by the world today as an after effect of Industrial Revolution. Due to the concentration of green-house gases such as carbon dioxide, methane, nitrous oxide which has been injected into the lower atmosphere; warming of earth's surface and rising near surface air temperature have been caused. It has resulted into climatic variation, geological change and as such is impacting the human, animal and aquatic lives considerably. Changes in weather patterns have led to change in winds, ocean currents and precipitation patterns. Such changes have impacted the agriculture, flora and fauna. If not checked in time, global warming shall lead to serious disasters. It would lead to the change in solar radiation and the insolation pattern ultimately affecting the geometry of earth's orbit around the Sun. Earth's axis may tilt due to direct rays of the Sun wiping out the life on earth. Environmental degradation poses a great danger to man's own survival. Climatologists believe that the rising of global average temperatures would result into significant ecological, societal and economic damage. Human influence on environment has increased manifold due to the rapid population growth and fast development in technology. The increasing amount of burning of fossil fuels in industries, the vehicular emission, burning of coal or leaves for residential purposes have increased the Greenhouse effect. If fossil fuels are being burnt at current rate, they may concentrate at the level of 560 ppm in lower atmosphere by mid-21st century. The flooding of atmosphere with carbon dioxide would melt the glaciers and the intensity of hurricanes may increase. Consequently many species shall extinct affecting the death and birth rates. It should be realized that conservation of environment is vital for the survival and well-being of mankind. Hence public policy needs to be formulated to regulate the carbon concentrations in air. It is high time to understand the alarming situations and make laws at national and international levels so as to keep the global warming under check and control environmental degradation. UNFCC,

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Kyoto Protocol, Paris Agreement are certain major international treaties to check global warming. Efforts at national level are also being taken in this regard.

[**Keywords** : Global climate change, Greenhouse effect, Global warming, UNFCCC, Kyoto Protocol]

1. Introduction

Global Climate Change is a serious problem being faced by our earth. Climate is being defined as the long term average of weather gathered over many years. When a particular type of weather becomes more regular in some area, it is recognized as a change in climate. Global warming has become a regular feature of the planet leading to extreme cold or extreme hot conditions. Consequently, extreme weather conditions like heat waves, droughts, rainstorms keep on occurring with greater intensity. The climate models of the scientists forecast that in coming years the climate pattern would face significant changes due to global warming that would be visible in seasonal temperature variations wind, patterns and annual rainfall. As per the report of Environmental Protection Agency, climate change has caused increased annual rainfall in North Eastern United States while in Pacific Northwest we find that the summer rainfall is decreasing to a great extent.

Before 1850, the climatologists did not have the techniques to measure the exact temperature. Only the proxy measurements were used to get the temperature readings in certain areas. After 1850s, the scientists started measuring the temperature through thermometers at enough places so as to know the global average temperature. By 20th century, major temperature variations were witnessed. From 1920 to 1940, the global temperature was warmer whereas from 1940-1970, the temperature got a bit cool. From 1970 onwards there has been a rise in temperature. The average temperature of the world has increased by about ± 0.6 to 0.2°C . The slow and steady rise in temperature has led to global warming of earth's surface. Temperatures today have increased to 0.74°C (1.33°F) higher than it was 150 years ago and as such a 6 degree Celsius rise in global temperature is expected in the next 100-200 years.

From 1880 to 2012, the global average surface temperature has seen an alarming increase of 0.85°C . From 1906-2005, the average surface temperature rose by $0.74 \pm 0.18^{\circ}\text{C}$.¹ The rate of warming just doubled during that period. Since 1997, the average temperature has been increasing by 0.13°C and 0.22°C . Such a fast pace of global warming has resulted in melting of glaciers leading to an overall rise in the sea level. Ocean temperatures have been increasing at a slower rate than land temperature due to the large heat capacity of oceans and also that oceans lose more heat by evaporation.² Arctic temperatures have been increasing at almost twice the rate of the rest of the world in past hundred years.³

2. Greenhouse Effect

It is a phenomenon that acts as a boon for planet earth. The prime greenhouse gases in atmosphere are carbon dioxide, water vapor, methane, nitrous oxide, ozone etc. Greenhouse gases absorb the heat and emit radiation within thermal infrared range.⁴ The process as such is called greenhouse effect. Without it, earth's average temperature would have been -18°C where it would have been impossible to sustain life as is the case with other planets due to lack of atmosphere. Earth's average temperature is 15° (59°F).⁵ The balance between the source of emission of gas due to natural system or human activity and the sinks i.e. the removal of gas from the atmosphere through its conversion to a different chemical compound, keeps protecting the atmosphere.

3. Global Warming and its Causes

The gradual heating of Earth's atmosphere, its surface and oceans is termed as global warming. The rise in the average temperature of earth by 1.4 degrees Fahrenheit (0.8 degree Celsius) since 1800s and the projected rise of 2-11.5 degrees Fahrenheit (1.133-6.42 degrees Celsius) in temperature over the next 100 years, prove that global warming of our planet at this rate shall lead to total devastation. Global warming is caused by the greenhouse effect due to the interaction between radiation from Sun rays reaching the earth's surface and earth's atmosphere. Solar radiation while passing through the atmosphere towards the surface of the earth gets absorbed and is radiated back as heat. Though this process is favorable for sustaining a warm and life-supporting environment but indefinite and non-uniform rise in amount of heat can lead to an overall global climatic change. These Greenhouse gases are considered to be the major causes of global warming.

The major atmospheric gases such as oxygen (O_2), nitrogen (N_2) and argon contain two atoms of the same element and hence they do not undergo any change in their charge distribution while they vibrate. So they remain totally unaffected by infrared radiation. On the other hand gases like carbon dioxide, carbon monoxide, water vapor etc containing two atoms of different elements absorb infrared radiation. In case of carbon monoxide, hydrogen chloride etc., although they absorb infrared radiation but their molecules are short-lived in the atmosphere due to their solubility so they do not contribute much to the greenhouse effect. Carbon dioxide is the major greenhouse gas and is abundant in the atmosphere due to large-scale burning of fossil fuels such as coal, oil and natural gas, deforestation, burning forests so as to create pastures and plantations. CO_2 absorbs infrared radiation, the heat trapping effects of which get compounded over the time. Thus there is a need to control and regulate CO_2 emission levels, especially by the largest emitters such as the United States. Since the year 2000, fifteen of the warmest years have occurred.⁶ Though the press has not been giving proper attention to the warmest years, the records are really shaking. Gavin

Schmidt said, "The long-term trends or the expected sequence of records are far more important than whether any single year is a record or not."⁷ The Press Conference convened jointly by NASA, NOAA and NCDC announced that the year 2014 had been the warmest year. The monthly global concentrations of CO₂ exceeded 400 ppm in March 2015 for the first time in the last millions of years.⁸ NASA scientists reported on 12th November that human-made carbon dioxide continues to increase above levels not seen in hundreds of thousands of years. Half of the carbon dioxide released in the atmosphere due to burning of fossil fuels does not get absorbed by the vegetation or the oceans, rather it continues to accumulate in the atmosphere.⁹

4. Effects of Global Warming

From North Pole to South Pole, the planet has been warming up at a scale whose effects are now becoming more prominent and if not checked in time, the effects may be disastrous. The heat being accumulated has not only melted the glaciers and sea ice but it has also led to shifting of precipitation patterns. Mountain glaciers and ice sheets that cover Greenland, Arctic Sea and West Antarctica have started melting. This in turn has led to an overall rise in the sea-level, which is expected to rise between 7-23 inches by the end of the century. Rain and snowfall have been observed to be getting more erratic than usual leading to prevalence of floods and droughts. In Ethiopia, that is already suffering from droughts, rainfall may further decrease by 10% over the coming 50 years. Hurricanes and storms shall become stronger with repeated occurrence.

Global warming shall have a deep impact on plantation and the species. The timing of spring season has started to get preponed due to which the plants bloom much earlier before their pollinating insects become active. It would bring a decline in natural plantation. Species that depend upon one another mutually may go out of sync. Certain foxes, alpine plants, butterflies etc. have started moving already to farther north or to higher cooler areas. In Antarctica, there has been a decline of the Adelie penguins. Their number has decreased from 32, 000 pairs to 11, 000 in the last 30 years. According to the research done by wildlife research scientists Martyn Obbard, since the 1980s, the polar bears are getting skinnier due to loss of habitat and food. In Hudson Bay, similar pattern regarding polar bears have been found. It is a great fear among wildlife researchers that if the sea ice disappears, the polar bears and other polar flora and fauna may get extinct.

Due to global warming, the future generations may face lack of fresh water. The scientists fear that if the Quelccaya ice cap in Peru keeps on melting at current rate, it would completely vanish by the next century and the thousands of people relying on it for electricity and drinking water shall be left in dark. Entire ecosystem can get altered due to this imbalance. Diseases like dengue, malaria shall become more prevalent due to increased mosquitoes. Due to warm summers

in Alaska, the insects have chewed up a large number of spruce trees. Therefore, signs of ecosystem changes are evident all over the planet.

5. International Treaties to Regulate the Climate Change

Due to the alarming pace of global warming, the developed nations as well as the developing ones realized the need of regulating the global temperature so as to save the ecosystem from degeneration by stabilizing the gas emissions.

5.1 The United Nations Framework Convention in Climate Change

UNFCCC, an international environment treaty negotiated on 14th June 1992 which came into force on 21 March 1994, has a foremost objective to “stabilize green house gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”¹⁰ Though the Treaty did not set any binding limits on greenhouse gas emissions for the countries and even did not contain any enforcement mechanisms, but it developed a tradition to set an understanding and awareness amongst the nations to take up the responsibility themselves to limit the greenhouse gas emissions. An Intergovernmental Negotiating Committee was established to coordinate amongst the nations for implementation of the provisions of treaty and for the signatures to be done on the day of the treaty. By December 2015, 197 members signed, proving thereby that the convention enjoys broad legitimacy.¹¹

Since 1995, parties to the convention have been meeting annually in the ‘Conference of Parties’ so as to assess the progress relating to reduction in greenhouse emissions. The major task assigned to the signatory nations by this convention was to establish the National Greenhouse Gas Inventories so that the greenhouse emission could be measured regularly at different places and checked or removed thereby. The updated inventories were to be regularly submitted to the working group of Inter-Government Committee of UNFCCC. Those who are not signatories to the convention could also participate in Protocol related meetings or in the conferences as observers.

5.2 Kyoto Protocol & Doha Amendments

The Kyoto Protocol was adopted on 11th December 1997 in Kyoto, Japan and came into force on 16th February 2008 with 192 parties. Kyoto Protocol is an extension of UNFCCC to fight the global warming by reducing greenhouse gas concentrations. The Protocol believes that the obligation of reducing the greenhouse gas emissions is more upon the developed nations. Under the Protocol, countries were supposed to meet their targets of greenhouse gas reduction through three Kyoto mechanisms : 1) To stimulate the green investment and meet the emission targets in a cost-effective way; 2) Actual emissions to be monitored and the records to be kept. 3) Registry system of track and record transactions by the Parties under Kyoto mechanism and finally reporting to be done by the parties at

regular intervals. A compliance system would ensure that the parties are meeting their commitments.

First target commitment period was from 2008 to 2012. The second commitment period started in 2012 known as Doha amendment to the Protocol whereby 37 countries were given binding targets viz. Australia, 28 members of European Union, Belarus, Kazakhstan and Ukraine. But some of the countries stated that they may withdraw from the Protocol or not put into legal force the amendments with second round targets.¹² USA did not participate in the targets as the White House could not ratify the protocol and Canada too stayed away from Kyoto Protocol. Hence Doha amendment could not come into force as of July 2016, only 66 states had accepted it whereas entry into force required the acceptance of 144 states. Negotiations were held within the framework of the annual UNFCCC Climate Change Conference on how to continue with the second commitment period that has to be ended by 2020. Conference in Paris was convened in 2015 for the purpose that resulted in Paris Agreement, an entirely separate one under the UNFCCC rather than an amendment of the Kyoto Protocol.

Kyoto Protocol was designed to assist the nations in adapting to the deployment of technologies so as to increase the resilience to the impacts of climate change. Though it could not come in force, it can be seen as the first important step towards the global emission reduction regime that would channelize the nations, stabilize their GHG emissions and could provide an architectural base for the future agreements on climate control.

5-3 Paris Agreement

The Paris Agreement, drafted on 30th December 2015 and signed on 22nd April 2016, is yet another major step towards World Climate Control. It was signed by 195 nations and ratified by 193 members by November 2016, by which the agreement came into effect by 4th November 2016. The agreement dealing with greenhouse gas emissions mitigation is an ambitious and balanced plan that if adopted properly would be a historic turning point in the goal of reducing global warming.¹³ Article 6 of the agreement contains the key provisions of Paris Agreement that outlines the cooperative approaches that parties can take in achieving their nationally determined carbon emission reductions. By doing so it would turn the framework into a global carbon market.¹⁴ It governs the International transfer of mitigation outcomes (ITMOs) that would link various carbon emissions trading systems into a global linkage under the auspices of UNFCCC. Hence the agreement puts a pressure upon the signatories to adopt emissions management systems that may be cost-effective suiting their economies.

Para 6.4-6.7 establish the Sustainable Development mechanism that would contribute to the mitigation of greenhouse gases and support sustainable development.¹⁵ The SDM is the successor of clean development mechanism that was adopted under Kyoto Protocol whereby parties take up emission reductions for

their Nationally Determined Contributions. The SDMs would contribute to a great extent to the global GHG emissions reduction and as such would enhance sustainable development. Paris Climate Change agreement could be termed as world's greatest diplomatic success with a global attempt to resolve the climate change. This agreement is hailed as historic, ambitious and durable whereby developed as well as developing nations are required to limit their GHG emissions to safe levels of 1.5C. Poor nations may be provided with the finance to run the project of controlling GHG in their respective nations. As the agreement has come into force, world is hopeful of protecting the climate of the Earth in the near future.

6. Steps taken in India towards Environmental Protection

Environmental sensitivity in India has been growing through a major public awareness. Green movements have grown out of small local initiatives to become major players in advocating environmental protection. Through several tools in electronic media, various programmes have been taken up by different agencies from time to time. India has prepared a comprehensive pollution abatement strategy. Pollution Control Boards have been established for the purpose. In addition to that six Environmental authorities including National Environment Appellate Authority have been constituted under Environment Act 1986. Various policies have been framed so as to protect the environment such as National Conservation Strategy and Policy statement on Environment and Development, 1992; Policy statement on abatement of Pollution, 1992, National Environment Policy 2006, National Environment Tribunal Act. Pro-environmental issues are major concerns of India's policy makers today.

7. Conclusion

Global Warming, if not checked in time can lead to a great disaster in future. The climate scientists agree to the fact that the rate at which global warming is increasing is not due to a natural occurrence, but as a result of human activity. The Intergovernmental Panel Report on climate change indicated the same. Hence there is a dire need to get alert in time and save the planet. Development of clean energy such as solar, wind or geothermal energy, reducing the burning of fossil fuels that cause the release of more and more CO₂ in the atmosphere, more sustainable transportation options as alternate fuel vehicles and mass transit may also reduce greenhouse gases in atmosphere. Individual efforts such as lowering the use of thermostats in winter and also the use of energy efficient light bulbs could help addressing global warming issues. But large-scale International policies, cooperation amongst the nations and the compliance to international convention is also required to reduce the greenhouse gas emissions and make the planet safer for future generations.

References

1. Change, I. P. O. C., *Climate change 2007 : The physical science basis. Agenda*, 6(07), 2007, 333.
2. Rowan T. Suttan, Buwen Dong, Jonathan M. Gregory, “Land/Sea Warming Ratio in response to Climate Change: IPCC ARN model results and comparisons with observations”, *Geophysical Research Letters*, 34(2). 2007, LO2701, 3402701S.
3. TS.3.1.2. *Spatial Distribution of Changes in Temperature, Circulation and Related Variables*, ARN WGI Technical Summary.
4. *IPCC ARN SYR Appendix Glossary* (PDF) Retrieved 14th December 2014.
5. Karl T. R. Trenberth K. E., “Modern Global Climatic Change”, *Science*, 302 (5651), 2003, 1719-23.
6. Miller, Brandon (20 January 2016) “2015 is warmest year on record”, NOAA and NASA say. *CNN*. Retrieved March 27, 2016 from www.cnn.com.
7. Schimdt, Gavin (January 22, 2015) “Thoughts on 2014 and ongoing temperature trends”, *Real Climate*. Retrieved 4th September 2015.
8. Schiermeier, Quirin, “Climate Scientists discuss future of their field”, *Nature News*, July 7, 2015.
9. Buis, Alan, Ramsayer, Kate, Ramusseau, Carol, (12th November 2015) “A Breathing Planet, off-balance”, *NASA*. Retrieved 13th Nov 2015.
10. Article 2, “The United Nations Framework Convention on Climate Change”, Retrieved 23 May 2016.
11. Stavins, R. et al., “International Cooperation : Agreements and instruments”, *Climate Change*, 2014, 1001-1082.
12. Figueres, C., “Environmental Issues : Time to abandon blame games and become proactive”, *Economic Times*, December 15, 2012. Retrieved from economic times.indiatimes.com.
13. Doyle, Allister and Lewis, Barbara, “World Seals Landmark Climate Accord, Marking Turn from Fossil Fuels”, *Thomson Reuters*, December 12, 2015. Retrieved 12 December 2015 from reuters.com.
14. Stavins, Robert, *Market Mechanisms in the Paris Climate Agreement International Linkage under Article 6.2* (PDF), Harvard Project on Climate Agreements, 2016.
15. United Nations Framework Convention on Climate Change, *Adoption of the Paris Agreement*, 21st Conference of the Paris Agreement, Paris : United Nations, 2015.

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Becoming Bonafide Woman

Kapil Babu Dahal*

Analyzing the prevailing marriage and family practices in the locality, this article portrays how these micro institutions contribute to enculturation of girls and women by shaping a typical kind of womanhood. In doing so, it also sheds light on some of the crucial aspects of being a girl/woman in Nepal's Tarai and the process of becoming a woman. In addition to the way women's selves are shaped, this section also illuminates the way these instilled values are nurtured and reproduced. Some important areas of socialization, family and marriage are presented here, as each of them has respectively contributed in influencing and maintaining their self. This article also portrays how the very process of construing their self and becoming woman itself is embedded within the gendered and hierarchical social structure.

[**Keywords** : Family, Marriage, Socialization, Nepal, Tarai]

1. Introduction

On the basis of analysis of prevailing marriage and family practices in the study area, this article portrays how these micro institutions contribute to enculturation of girls and women by shaping a typical kind of womanhood. In doing so, it also sheds light on some of the crucial aspects of being a girl/woman in Nepal's Tarai and the process of becoming a woman. In addition to the way women's selves are shaped, this article also emphasizes the way these instilled values are nurtured and reproduced. Some remarkable aspects of socialization, family and marriage are dealt on here, as each of them has correspondingly contributed in influencing and maintaining their self.

This article bases on information generated in the course of ethnographic fieldwork carried out for my Ph.D. research during 2012-2015. I carried out this

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research at a social cluster among Tarai Brahmin women in a central Tarai district of Nepal. To respect the privacy of the research participants, I have given pseudonym of Lakhanpur to the field site. I have employed various anthropological techniques and tools to generate information from the research participants. I have realized that reflective understanding and experience of conducting fieldwork needs to be reckoned as an imperative part of data collection techniques in anthropological explorations. I adopted this ontological position regarding social phenomena as different from natural phenomena, and which also assumes that all social phenomena are socially constructed and thus they must be positioned in time, space and culture (Creswel, 2007 : 20).

Socialization can broadly be considered as a process of changing a biological individual into a social 'person'. As socialization requires a long period of involvement, it is regarded as a process which takes place over the period. This is the process through which individuals are inculcated with certain values, skills and attitudes necessary for playing expected roles in their social matrix. During and through this course, individuals become members of a society, embodying in their own experience and acting out their learned behaviour. It mainly includes but is not confined to the training of children and the immature. Nevertheless, as Mayer states (1970 : xi), immaturity is a relative concept which can be assigned taking into consideration factors other than age. Grossly, it can be regarded as life long process.

Leaper and Friedman (2007) have portrayed various aspects of socialization which can have critical consequences on adult roles and functioning. They argue that men's dominance and sexist practices can be traced back to children's gender-typed everyday interactions. Social-structural factors, such as division of labor inside the home and patriarchy in the larger society, contribute to gender socialization. In line with what Leaper and Friedman have claimed, the study participants from my field area have also experienced that women learn gender values as early as the childhood socialization process.

A typical Maithil Brahmin girl in Lakhanpur learns certain qualities to be a good girl and thereby ultimately to become a good woman in the future. She learns gender values from her early childhood. Different cultural values are instilled into the girl/woman throughout her life and during this process the society expects her to exhibit these qualities in her everyday life.

Shyness, discipline, tolerance and competence in the household works are qualities of a good woman. She needs to learn to cover her face with the Ghunghat, not to speak up to the seniors and not to laugh in loud voice. (Woman, 51)

The above quote represents the qualities expected to be inculcated in girls through the process of enculturation to make them grown up women confined into the domestic chore. Socialization contributes to instilling good conduct, in

regulating impulses, instincts and temptations. A good woman is supposed to control her emotions, especially her anger. As a good wife she is not supposed to show anger to her husband, whereas, it is seen as manly behavior for the husband to express his anger. All these virtues of women collectively contribute to gain and maintain *ijjat* (honour) to the family.

2. Socialization in Lakhanpur : Beyond Biopolitics

Ghunghat, wearing a veil, is imperative to cover the face of a married woman, especially for the young ones. The end of the Sari is used to cover one's face. Newly married women cover their face in such a way that they only keep some space to see. Whereas, elder women cover their head, not necessarily the whole face. Wearing Ghunghat has more emblematic import than the coverage per se with the physical object. In unfolding its symbolic significance, people regard it as a part of *purdah*, "meaning curtain", the word most commonly used for the system of secluding women and enforcing high standards of female modesty in much of South Asia. Papanek (1973) regards that *Purdah* is an important part of the life experience of many South Asian women. Papanek has observed that it is a core trait of the social systems of the area which begins after the marriage of a woman. The functional value of the *Purdah* system lies in its prohibition on communication between women and males outside certain categories. In Lakhanpur, *Purdah* is based on a set of avoidance rules between a woman and her male affine, senior than her husband.

Family members inform young girls about how they have to behave as grownups, what they are expected to do and what they are prohibited from doing. Nirmala Devi, was married when she was seventeen. Her husband dies few years ago while working in India. She lives in Lakhanpur nearby her natal home along with her son and a daughter. Talking to me in her Angna whilst looking at her daughter who was studying at the local college, she told me that :

We teach our daughters what they should do and are forbidden to do. If they do not obey, the parents will beat them. Sometimes, we also advise them illustrating the behavior of a good girl from the locality. If that does not work, we also convince them with the negative example of some women who are in woe because of their disobedience.

They still carry on and reiterate this verbally and pointing to the essentiality of direct coercive measures. In addition, some of their cultural practices have reached to the stage of biopolitics (Foucault, 1977), a disciplinary power, not in the form of control exerted from outside rather in the form of internalized 'self-control' which is expected to make girls and women be obedient and comply with the social norms they practices. The girls know about their secondary position in society through direct instructions and by observing the discriminatory practices in the family. The kind of importance their male siblings get in their family, the rumors

they hear about women and girls, the alteration of home following the marriage they experience, the gendered differences between their parents at home, among other things, collectively contribute to inculcating gendered values and prepare them to be a submissive.

Mayer (1970) rightly asserts that social mobility and also the major social changes involve re-socialization of people of all ages. The knowledge acquired in the form of socialization remains relevant but becomes insufficient when entering into the new institution of marriage. For Maithil Brahmin woman from Lakhanpur, the process of enculturation certainly goes on after marriage as well. It is because a newly married woman has to learn how to become a good daughter-in-law as indicated by my informant Sone Lal :

Recently married daughters-in-law have to stay inside the house. They have to be taken into strict control otherwise she will neither respect nor will take care of the senior family members. This is how after few years of Ghunghat she will learn about the rules of the family and once she passes through these years successfully, then she will be given the full-fledged authority in the family.

As Sone Lal states in the above lines, learning family values, a woman has to wait up to some years to become a full-fledged member of the family. In these years she needs to prove her loyalty to the family. In this way, though the families are there within the broader Maithil Brahmin cultural context, still further make ability (Schuurman, 2000) is perceived as crucial to make a newlywed daughter-in-law as a complete member of the family.

Young women from Lakhanpur have also internalized the need of re-socialization. As Foucault (1977) states, the institution of patriarchy has been able to make the girls and women feel such need. In a similar way the in-laws family would exert power over the daughter-in-law. Beyond the demarcation set by Foucault, the way control is exerted over these women is not only non-coercive but is rather mixed with the coercive form of direct control of their body such as physical assault and violation in case of non-compliance.

In addition to disciplining body through re-socialization, as Foucault (1977) considers, non-repressive power is exercised on their body through the modification, in the form of decorations and ornaments. After the marriage, a woman has to wear vermillion powder, pote (beeds), bangles and wear a Ghunghat to cover her face. Besides alteration in the behavioral sphere re-socialization encompasses modification and material adornment.

3. Marriage, Dahej and Women's Self

Marriage is considered as an essential part of personal and social life in Lakhanpur. Here my interest to discuss marriage is not to describe every detail of the ritual process as it is practiced in the locality, rather, my focus is mainly to

emphasize the inevitable and important aspects of marriage which ultimately contribute to forming and representing the situation of Maithil women. Referring to its existence from time immemorial, Lakhanpur people portray that it is essential for women to enter into conjugal life. Manoj teaches in a local primary school in Lakhanpur. He is from a reputed family of the area. He has observed about the life of women in his locality :

Following the marriage, the life of a woman depends upon her husband's family as she becomes its member. Her relation with the natal family remains simply as the matter of honor. They invite her in different feast, festivals and occasions.

A woman has to pass through certain process and rituals to get into the realm of her husband's family. Following the marriage, a woman has to get Kul Mantra, the clan hymns, to become a member of her husband's clan. This hymn legitimates her participation in the religious feast and festivals. She can acquire this from an elderly man if her husband accompanies her, otherwise, she needs to get it from an elderly woman of her husband's clan. Kul Mantra contributes to integrate her symbolically and socially into her husband's clan.

Along with integrating a woman with her husband's family, simultaneously, marriage also separates her from her natal family. By taking Kul Mantra, she symbolically departs from her natal family and gets integrated with her husband's family and clan. In this ground, as member of their clan and family, following the marriage, it is the responsibility of her husband and his family to protect her, especially that of her body, *Ijjat* (honour) and purity. Her body and purity is embedded not only with the honor of herself but also with that of the husband's family. If the family cannot protect her properly that may bring *Daag* (blemish) to her body and ultimately to the family.

She needs to be protected because she is considered vulnerable to sexual exploitation. To lessen such vulnerability it is essential to restrict her movement. People rationale that as her husband is often outside of the home, she needs to be kept in domesticity, a safe place. As her body is the most important part of her self, so, it has to be protected by being kept inside the boundary, perceived to be safer. Regarding the 'outside' as an unsafe place (for detail on household space management, see 4.3), the newly married woman is not allowed to go outside. Makhan Jha, 49, considered as a local respectable person, refers to the legend of Sita¹ in the Ramayana who crossed the boundary. In case of inevitability to go outside, a woman has to cover her face with Ghunghat. Her face and identity is most important, so, she has to cover it. Not going outside of Dura is an honorable practice in Lakhanpur. The family gets further honor if she has not gone outside till she has some children or in some cases even the grandchildren.

For the assurance that a daughter-in-law does not go outside of her home, her mother-in-law is responsible to make sure that she is under her nigarani, or direct

surveillance. Newly married daughters-in-law can show their face to women but not to other men. Even inside the home, she cannot show her face to senior male members. Outside the home, she cannot show her face to all the senior male relatives. She also needs permission to chat with outsiders and strangers, especially the men.

Shankar Jha, 47, had an 18 year old daughter who was undertaking her higher secondary education at the local school. He was working at a sub-health post in the neighbouring village as a peon. He was not happy for not being able to get good government job despite his matriculation. He had observed some crucial things about the dowry :

These days amount of *Dahej* is accelerating as the prices of other commodities are also mounting. For a medical doctor, his parents can demand up to Rs. 35 Lakhs. Often the groom's family does bargaining to increase *Dahej* amount. Sometimes, his family deliberately lies to the community pretending they have received more. It is because larger size of *Dahej* is associated with a family's increased social status and it also creates the augmented base for the remaining sons.

The practices of *Dahej*, dowry, denotes to the cash or in-kind, things that a bride's natal family has to provide her husband at her marriage with the exception of some clothes and jewellery which goes to herself. The practice and amount of dowry has increased following the increment in economic activities and flow of cash in Lakhanpur area. No one can think of marrying out a daughter without paying dowry. It increases in line with the groom's family's economic status, and education and employment status of the groom.

If the groom's family is not satisfied with *Dahej* at the wedding or later on they want to have more *Dahej*, they express their dissatisfaction to bride's natal family. To express their dissatisfaction, the groom's family may apply brutality upon the bride. Such violence is aimed to transcend the individual body of the bride and affect her natal family. In this context, the bride's body becomes a medium through which pressure and violence is transcended towards her natal family. As she is not allowed to come out of the house easily, it is not possible for her to communicate her grievances to outsiders. She can get access only to those whom her husband's family lets her talk with. In such situations, she may find herself with multiple layers of sufferings.

Local people take such violence as a ordinary phenomenon and accept it as a normal practice. As a normalized practice, *Dahej* and accompanied violence, gets instilled into the mind of local people, including women and girls through their experience, gossip, hearing or rumours. Witnessing the incident or the rumour itself are equally powerful to inculcate fear inside people. The illustrations of unspecific events often point to the generality of such a situation. The story of beating, killing and any other torture, though the incident has not happened here

and now, but still people believe it because the collective perception is that it is likely to happen and that it can happen to anyone living in a similar situation. Such stories, real or mythical, affect parents, family members and girls through the symbolic imagery of the popular culture. Calculation of numbers, repeated telling, sometimes the escape of the perpetrators or local dismissal of the violence reinforces the terror of dowry and ultimately builds it as an inevitable phenomenon leading to the creation and perpetuation of a culture of fear. The culture of fear is so pervasive among girls and their parents that everyone finds herself/himself in the situation of helplessness. Rumors and gossip, in this way, working covertly (Stewart & Strathern, 2003 : 29), can produce results regardless of verification of the incidents.

Janaki Mishra, 60, does not have any regret that both of his daughters were not educated. He has seen the complications that dowry has brought the area :

These days parents want to educate also to their girls thinking that they will have better life in the future. However, there is a problem in educating them. When she does B. A. (referring to graduation), it is not possible to marry her with a boy having less than her level of education. Along with the increment of groom's educational attainment, the amount of *Dahej* also increases in parallel. This situation ultimately discourages the family from educating the girl and opts for her earlier marriage. Moreover, it has also led to the increasing practice of examining the sex of the fetus and going for abortion in the case of a girl child.

As Janaki Mishra had mentioned in above quote, sex selective abortion in this way becomes an extreme form of gender based violence. It denies the inherent rights of the female child for life and to be born. Additionally, it is stigmatized in such a way that it often has a harmful impact on the mother's health. When the sex of the fetus is known, it already becomes too late to go for abortion. On top of that, to cover the abortion, most of the time couples either choose conventional practices which are often detrimental, leading up to the death of a mother. If they go to the private clinic, where there is no assurance of the knowledge and skills of the service providers, this also leads to unsafe abortion.

In line with several studies, Abrejo, Shaikh, & Rizvi (2009) have come up that there is high rate of sex selective abortion, more specifically, female feticide, in South Asian countries. As widespread in these countries and contributing in maternal mortality, this is a public health problem. Abortion in certain case became legal in Nepal in 2002, however, sex selective abortion is not legal (Frost, Puri & Hinde, 2013). Analyzing the changes in the sex ratio at birth since legalization, these authors show that there is association of sex selective abortion with legalization of abortion.

Lamichhane et al. (2011), based on their studies among the health workers, has found that despite knowing the prohibitory provision of sex selective abortion

health workers perform abortion thinking that these women might seek unsafe services elsewhere. All of these scholars have presented discrimination against women as prime factor for female feticide. Hatlebakk (2017) conducted a recent study based on what he calls as a unique family survey in Nepal to investigate the economic consequences of having a first-born girl. His study focused on the potential costs of having too many children in Nepal. I do not agree with one of his statement in the article which says that abortion of female fetuses is still not a problem in Nepal. My study findings, mainly based on the information from the natives of Tarai, contradict with his claim. Local people in Lakhanpur are aware that the phenomenon of sex selective abortion widely exists there. As George and Dahiya (1998) have shown from their study in Haryana, “parents tend to be calculative in choosing the sex of the next child and the decision is based on the birth order, sex sequence of previous children and number of sons” (p.1).

A husband’s presence in a woman’s life has been perceived by women as pervasive. When they get *sindur*, vermilion powder, from their husband on their forehead, he is there in their life everywhere. It symbolizes the marital status of a woman. An *Ahivat* (a married woman whose husband is still alive) woman only wear vermilion and she becomes *Musmat* when he dies. Following his death, she has to refrain from all her decoration together with wearing red clothes and vermilion powder. More than a decade ago, there began a trend of wearing red clothes and vermilion powder among the hill origin widows (Dahal, 2008) but this has not reached the Madheshi women yet.

The necessity of marriage is not confined only for acceptable conjugal life but ultimately for the procreation. Infertility calls into question the meaning and purpose of both their marriage and their very existence (Mathews & Mathews, 1986). Unlike their claim, a blame for involuntary childlessness goes to a woman and she is not considered complete unless she gives birth or enters into motherhood. Inability to conceive is blamed as a woman’s infertility she is stigmatized for this as a *Banjh*, barren. A woman will get honor in the family and society only when she gives birth.

Along with the educational attainment of girls, families are getting educated daughters-in-law. Teasing such newlyweds, elder women express their dissatisfaction pointing towards their immaturity even to distinguish normal water and holy water for worship (*Aaike chhaudi mairam, paniko kahe jal*). I have found this as an interesting indicator of declining religiosity among youth. To remind such daughters-in-law about their ultimate position in the society they also use another adage which equates the temporality of women’s upper hand in the family with that of rail ride from which eventually they have to get off (*Mogiko muktari, patrike sawari*, women’s upper hand is just like a rail ride). Elder women are using such analogies and satire to socialize newly weds to realize their subordinate position in the family.

4. Conclusions

This article shows-how the micro level cultural institutions like family and marriage, the foundation of the social and cultural life of people from Nepal's Tarai, can contribute in shaping the typical kind of self and situation of women. The very foundation of social life themselves create the foundation for the suppressive self of women. In Lakhanpur, marriage is considered as important to have the honorable identity of a woman in the locality, however, paradoxically, *Dahej*, an inherent constituent of it, is threatening the life and devaluing women's status in the society. The practice of *Dahej* and associated rumors and various incidents related with it, keeps women always vulnerable and in the zone of danger from the ones whom she is supposed to get protection.

Dahej has become a symbol of biopolitics (Foucault, 1977) which exerts social control to keep women and girls inside the domestic chore and moreover a source of constant threat when they begin to understand and observe the weddings and marital consequences in their surroundings. Realization of the cost of *Dahej* on creating complexity in arranging and maintaining marital bond, mainly contributes to limit them in the form of internalized control. In spite of its social and cultural significance, *Dahej* has become a symbol of commodification (Henderson & Petersen, 2002) of marriage. Groom's parents want return from the investment they made for the study of their son. Taking *Dahej* as return on son's studies clearly shows the encroachment of excessive degree of commodification into the micro institution of marriage.

Agreeing with social learning theorists like Kretchmar (2011) who claims that girls learn gender appropriate behavior in their everyday interaction with the adults, I maintain that children learn through the observation and imitation of the behaviors of same-sex adults. As the learning becomes internalized, then the children begin to display gender appropriate behaviors even in the absence of reinforcement from any agent and/or agency. This article also portrays how the very process of construing their self and becoming woman itself is embedded within the gendered and hierarchical social structure. For the maintenance of such inequality, both the coercive and non-repressive measures are in operation in Lakhanpur to socialize and re-socialize girls and women. Re-socialization of grown up women through the process of marriage and also family covertly portrays a woman as an immature and thus rationalizes the need of re-socialization.

While looking at this practice of physical confinement of women in the house, one can infer that women of reproductive age are kept inside. This implies that women are more vulnerable during their reproductive age. Restricting the mixing of blood and keeping the biological aspect of lineage in its line, physical confinement contributes to control her sexual and reproductive behaviour. However, the discursive logic put forth in defense of this practice is the protection

of women. When protection equates to physical confinement, in essence, then it allows enacting body politic (Scheper-Hughes & Lock, 1987) euphemized in the name of protection.

Footnote

1. Sita was living an exiled life in a forest along with her husband Ram and his brother Laxman. Provoked by a deception of a demon King Ravan, when she crossed the boundary created by her brother-in-law, Ravan kidnapped her in absence of Ram and Laxman.

References

- Abrejo, F. G., Shaikh, B. T. & Rizvi, N., "And they kill me, only because I am a girl... A review of sex-selective abortions in South Asia", *The European Journal of Contraception & Reproductive Health Care*, 14(1), 2009, 10-16.
- Creswel, J., *Qualitative Inquiry and Research Design : Choosing among Five Approaches*, Thousand Oaks, CA : Sage Publications, 2007.
- Dahal, K. B., "Finding Ways amidst Adversaries: Coping Strategies of Internally Displaced War Widows Living in Kathmandu", K. N. Pyakuryal, B. K. Acharya, B. Timseena, G. Chhetri & M. D. Uprety (eds.), *Social Sciences in a Multicultural World*, Kathmandu, Nepal : Sociological Anthropological Society of Nepal (SASON), 2008, 249-257.
- Foucault, M., *Discipline and Punish : The Birth of the Prison*, London, UK : Allen Lane, 1977.
- Frost, M. D., Puri, M. & Hinde, P. R. A., "Falling sex ratios and emerging evidence of sex-selective abortion in Nepal : Evidence from nationally representative survey data", *BMJ Open*, 3(5), e002612, 2013.
- George, S. M. & Dahiya, R. S. "Female foeticide in rural Haryana", *Economic and Political Weekly*, 33(32), 1998, 2191-2198.
- Hatlebakk, M., "Son preference, number of children, education and occupational choice in rural Nepal", *Review of Development Economics*, 21(1), 2017, 1-20.
- Henderson, S. & Petersen, A., "Introduction: Consumerism in health care", S. Henderson, & A. Petersen (eds.), *Consuming Health: Commodification of Health Care*, London, UK : Routledge, 2002, 1-10.
- Kretchmar, J. "Gender socialization", The Editors of Salem Press (eds.), *The Process of Socialization*, Pasadena, CA : Salem Press, 2011, 97-108.
- Lamichhane, P., Harken, T., Puri, M., Darney, P. D., Blum, M., Harper, C. C. & Henderson, J. T., "Sex-selective abortion in Nepal : A qualitative study of health workers' perspectives", *Women's Health Issues*, 21(3), 2011, 37-41.
- Leaper, C. & Friedman, C. K., "The socialization of gender", J. E. Grusec & P. D. Hastings (eds.), *Handbook of Socialization : Theory and Research*, New York, NY : The Guilford Press, 2007, 561-587.

- Mayer, P., "Introduction : Socialization and the social anthropologist", P. Mayer (ed.), ***Socialization : The Approach from Social Anthropology***, London, UK : Tavistock Publications, 1970, xiii-xxx.
- Matthews, R. & Matthews, A. M., "Infertility and involuntary childlessness: The transition to nonparenthood", ***Journal of Marriage and the Family***, 641-649, 1986.
- Papanek, H., "Purdah: Separate worlds and symbolic shelter", ***Comparative Studies on Society and History***, 15(3), 1973, 289-325.
- Scheper-Hughes, N. & Lock, M.M., "The mindful body: A prolegomenon to future work in medical anthropology", ***Medical Anthropology Quarterly***, 1(1), 1987, 6-41.
- Schuurman, F. J., "Paradigm lost, paradigm regained? Development studies in the Twenty-First Century", ***Third World Quarterly***, 21(1), 2000, 7-20. ★

Indian Folk Theatre : History and Relevance of its Revival

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India is a land of history and heritage. Our vibrant and rich culture is as diverse as its people. Literature, specially drama and theatre, lives in the soil of our land since the beginning of civilization. Folk theatre is a non-commercial, rural pageantry based on folk traditions and local history. At one time, it was the biggest source of entertainment in the Indian villages. But post-independence, this art form was unable to keep up with the changing times. In my research paper, I propose to trace the history of Indian folk theatre and its current status. I would also attempt to draw attention to its significance for the modern generation vis-a-vis electronic media.

[**Keywords** : Folk theatre, Traditional art form, Sanskrit theatre, Patronage, Revival]

“The theatre is the only institution in the world which has been dying for four thousand years and has never succumbed. It requires tough and devoted people to keep it alive.”

-John Steinbeck, *Once There Was a War* (1958)

Indian Folk Theatre is an amalgamation of music, dance, drama, stylized speech, and spectacle with deep roots in local identity and native culture. This form of theatre is an important indigenous tool that reflects the social-political realities of its time. India has a long, rich and illustrious history of folk theatre. In ancient times, Sanskrit dramas were staged at seasonal festivals or to celebrate special events. Later, actors, singers and dancers were given special places of distinction in the courts of several Indian kings. For instance, the tamasha folk theatre was

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patronized by the Peshwas of the Maratha kingdom. The maharaja of Banaras was the chief patron of grand ramlila, a play based on Ramayan.

If we look to the origin and evolution of folk theatre, we have to admit that this theatrical tradition is interlinked with human civilization. India, in the backdrop of its rich cultural context, has the longest tradition in theatre dating back to at least 5000 years. Developing after its Greek and Roman counterparts, Sanskrit theatre is the earliest form of Indian Theatre. In the Vedic period, people had developed potential artistic qualities, like songs, dances and many religious rituals to express their emotions, hopes and aspirations. Bharat Muni, the ancient Sanskrit Scholar and the first dramaturge, propounded the theory of Indian theatrical art forms in the 'Nayya Shastra', a treatise on the performing arts. The encyclopaedic text consists of 36 chapters with a cumulative total of about 6000 poetic verses describing performance arts and their aesthetics. The subjects covered by the book include dramatic composition, structure of a play and the construction of a stage to host it, genres of acting, body movements, make up and costumes, role and goals of an art director, the musical scales, musical instruments and the integration of music with art performance. The elaborate text hugely inspired Sanskrit theatre, in particular and later folk theatre, in general.

Folk theatre in India made its initial appearance in oral tradition, where it was used to narrate the stories of human lives in real context. Historically speaking, it was during the 15th -16th century that the folk theatre developed influentially in different regions. It used different languages, the languages of the regions in which it emerged. Initially, these were purely devotional in tenor and typically revolved around religion, local legends and mythology. Later, with changing times, it became more secular in content and began to focus on folk stories of romance and valour and biographical accounts of local heroes. Songs and dances also became integral ingredients of these folk forms.

Over the next few centuries, folk theatre played an important part in the growth of modern theatres in different languages. Bhartendu Harishchandra, the 19th-century drama writer who is also known as the father of Hindi theatre, used to combine folk conventions with Western theatrical forms that were popular at that time. Rabindrabath Tagore's plays reflect the influence of Baul singers and folk theatre too. Now, each folk theatre has its particular community, same language, area and way of life. This has led to the infusion of local myths, costumes, and masks into the ancient form of drama, resulting in the evolution of diverse regional styles of folk theatre. The musicality is one of the greatest characteristics of these folk dramas. The musical instruments developed indigenously are special features of these folk plays. Religious movements like Shaivism, Hinduism, Jainism and Vaishnaism have shaped thematic contents of many of these traditional theatres.

According to Indian playwright and critic G. Shankara Pillai, "To understand the various types of folk theatre in a diverse cultural landscape like India, one has to examine all its aspects ... sociological, ethnic, ecological and cultural layers of tradition must be examined in detail, and the backgrounds of traditional forms analyzed in all their multiplicity. These forms (I refrain from calling all of them theatre) have their own idioms of expression, obviously based on the nature, conditions, and ultimate aims of performances."¹

Keeping this observation in mind, while studying various folk theatrical styles, one finds that each has its own unique form dependent on its local customs. They differ from one another in execution, staging, costume, make-up and acting style, although there are some broad similarities. The south Indian forms emphasize on dance forms like Kathakali and Krishnattam of Kerala and actually qualify as dance dramas, while the north Indian forms emphasize on songs, like the Khayal of Rajasthan, the Maach of Madhya Pradesh, the Nautanki of Uttar Pradesh and the Swang of Punjab. The Jaatra of Bengal, Tamasha of Maharashtra and the Bhavai of Gujarat stress on dialogues in their execution, the latter two emphasize on comedy and satire. Puppet theatre also flourished at many places in India - Ravana Chhaya of Orissa, Gopalila of Orissa, Kathputli of Rajasthan and Sakhi Kundhei of Orissa are some of the popular forms in vogue. When we talk about the history of our country, we cannot ignore the contribution of folk theatre. Historically, it was not just a source of entertainment in Indian history; it contributed immensely in creating social consciousness as well. During our freedom struggle, Folk Theatre spearheaded in arousing patriotic fervour in the conscience of the people against the colonial rule of the British. It became effective in many political and social campaigns launched by Mahatma Gandhi. Realising the importance and powerfulness of this traditional medium, the first government of our independent country, planned that people in rural areas should be approached through traditional-folk media for conveying messages for Social, Economic and Cultural Development which ultimately helps in overall National Development.

But, after the initial boost, folk theatre fell off the grid due to lack of steady political and royal patronage. After abolition of Kings and zamindars the professional folk theatre troupes started languishing and some of them were dangerously close to extinction. Many talented artists deserted troupes and migrated to cities for some other employment. There were instances where some of the theatrical folk forms were no longer in vogue due to impact of electronic media and deteriorating financial condition of the sponsors. Only on special occasions, random efforts were made to stage folk plays.

Drowned in the noise of globalization during the 1980s and 90s, these precious art forms declined to pitiable conditions. The Ideas and tastes of the people changed fast with the march of the time. The popularization of radio,

television and cinema as source of entertainment diminished the loyalty of the people towards the folk plays. Aggressive consumerism mesmerized the people's mind due to advent of electronic media. At this stage, one began to ask the question of utility and relevance of reviving the out-dated, multiple streams of folk plays when cinema and television were giving enough entertainment to the people. Their popularity dwindled as they could not compete with the instant reach and popularity of internet and television and were dismissed as cheap entertainment.

Now, the question arises : Why do we need to keep this dying art form alive? What purpose can it serve in the future of our nation?

The answer is : Because it is our responsibility to preserve an important part of our national heritage. As Kidd (1984) observed : "The plays grew out of the situations, experiences, and analysis of the actors who are themselves villagers...They create their own dramas out of their own collective analysis of their immediate situation and the deeper structures in which they are embedded. This is a genuine expression of the people."²

Padam Shri awardee, Hindi theatre personality Bansi Kaul dispels the misconception about folk theatre, "Most of the folk forms are not cheap entertainment ... They provide us with social wisdom."³ The folk drama has got twin purpose of both entertainment and education. "Our country has a very complex social system which comprises of different castes, classes, creeds and tribes. Maximum population of our country still resides in villages. Electronic media has made a foray in villages but it is still considered impersonal and unbelievable in contrast with the performance of traditional artists whom the villagers can identify with because they speak familiar languages. Traditional art forms and folk theatre can be used to reach these people in the process of change and development of India. Even where modern media have penetrated isolated areas, the older forms maintain their validity, particularly when used to influence attitudes, initiate action and promote change. Extensive experience shows that traditional forms can be effective in dispelling the superstitions, archaic perceptions and unscientific attitudes that people have inherited as part of tradition. These ideas are difficult to modify if the benefits of change are hard to demonstrate and due to the general distrust of outsiders in the mind of common populace. Being insiders, practitioners of the traditional media use a subtle form of persuasion by presenting the required message in locally popular artistic forms. This cannot be rivalled by any other means of communication."⁴ In the last twenty years or so, a new interest in regional cultural expressions and folklore has developed in India, leading to the rediscovery and re-evaluation of indigenous forms of literature and the performing arts. Nowhere is this more apparent than in folk theatre. The traditional theatres such as Yakshagana, Tamasha, Ras Lila, Nautanki, Bhavai, Jatra, and Khayal have gone through a revival. Once considered distasteful and largely forgotten, these regional theatres have received

attention and support from the Sangeet Natak Akademi. Their status has been enhanced by an intellectual reappraisal, which views them as the surviving fragments of the ancient Sanskrit dramatic tradition. As a result, greater familiarity with folk theatre forms has developed in the cities, and the urban attitude has shifted from scorn to curiosity and respect. Kutiyattam, the only surviving specimen of the ancient Sanskrit theatre, thought to have originated around the beginning of the Common Era, is now officially recognized by UNESCO as a Masterpiece of the Oral and Intangible Heritage of Humanity.

Today, folk theatre is considered an art form that keeps the basic elements of a drama intact, while taking on the stories and flavours of the region its stems from. This very aspect makes folk theatre a vibrant and vital aspect of India's intangible cultural heritage. These folk forms are widely used as the source of media for propaganda Health, family planning, adult education, anti-dowry programmes etc. Another asset of using folk media is that it is comparatively cheap. They belong to the community and not to individuals, state or private industry. They do not have to be imported and, therefore, there is no threat of cultural colonialism and foreign ideological domination. Also local talent and localized message would have more credibility. That is why theatre is finding new avenues to negotiate between tradition and modernity.

Over the years, some dramatists took interest in incorporating folk elements in their plays. Vijay Tendulkar, a well-known dramatist, wrote a Marathi play - 'Ghasiram Kotwal' (1972) which had a blend of Marathi folk music, satire and chorus songs with thematic contents of the play. Habib Tanvir, the renowned director and actor, made in-depth study of Chhatisgarh music and dance and used it in his play - 'Charan Das Chor' (1975). Girish Karnad, celebrated actor-dramatist, has also made similar experiment with Kannada folk element in his play 'Nagamandala' (1990). The contemporary litterateurs and dramatists of our country need to actively revive this connection between folk theatre and Indian literature. This will be a healthy way of drawing the attention of young, urban Indians to traditional art forms.

To conclude, the interest in revival is certainly a positive sign for folk theatre. The first step is to help the actors and performers of these art forms. If artists are in good condition, socially and financially, then only they can do their best for the development of the traditional forms to flourish in future. Seminars should be conducted for professional artists, and workshops and training camps should be organized for the amateur artists. Through these efforts, they can establish genuine interest towards their performances. Hopefully, this renewed attention will soon reflect in new patronage, positive coverage and younger artists willing to join folk theatre.

References

1. Pillai, G. Shankara, "Traditional Idiom and Modern Theatre", *Sangeet Natak Quarterly Journal*, July-December, 1985, 43.
2. Kidd, Ross, "The Performing Arts and Development in India: three case studies and a comparative analysis", Georgette Wang and Wimal Dissanayake (eds.), *Continuity and Change in Communication systems : An Asian Perspective*, New Jersey : Ablex Publishing Corporation, 1984, 117.
3. Kaul, Bansi, "Tradition All Around Us", *Sangeet Natak Quarterly Journal*, July-December, 1985, 22.
4. Many Voices, *One World, Communication and Society : Today and Tomorrow*, New Delhi : Oxford, IBH, 1982. ★

Quest for Economic Independence in Willa Cather's My Antonia

Abha*

Willa Sibert Cather is an eminent author from the United States. She is known for her depictions of the U.S. life in the novels such as 'O Pioneers!', 'My Antonia' and 'Death Comes for the Archbishop'. The present paper is an attempt to analyze the quest for economic independence in Willa Cather's My Antonia. Economic independence is about expanding the capacity of women to make genuine choices about their lives through full and equal participation in all spheres of life. It is about recognizing women's work, paid and unpaid, as valuable, both socially and economically. It is about having policies and systems that value and celebrate women's contributions, and reflect the reality of women's lives.

[**Keywords** : Economic independence, Equal participation, Happiness, Freedom of movement]

Pulitzer Prize winner Cather's place in contemporary cultural politics may well be that the first lady of the United States, Laura Bush, featured her work as part of a White House symposium on the literary legacy of women in the American West in September 2002.

Cather was a writer who emerged at a transitional moment in the evolution of American Culture, and the complexity of her work results from her responses to this shifting historical milieu. She was an American of the late Victorian period and she lived her early life in the relatively provincial backwater of rural Nebraska. This was a time of considerable political ferment that was formative in shaping her fiction's social and political magnitude.

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As she spent her childhood with the immigrants, she had the first-hand knowledge of their lives on the prairie land. In all of her novels she illustrated the pioneers' life style, their hardships and their social, economical surroundings. As a child, she moved with her family to Webster county Nebraska .It might be that as a child Cather regarded the natural features of Nebraska as something to be conquered. Something entirely new and beautiful, Nebraska provided the material she needed to become a truly authentic American author. As she once told an interviewer :

“Of course, Nebraska is a storehouse of literary material everywhere is a storehouse of literary material. If a true artist was born in a pigpen and raised in a sty, he would still find plenty of inspiration for his work. The only need is the eye to see.”

This does not mean, of course that Cather was an unimaginative writer. However, like many authors she was a keen observer of life. She had a talent for noticing minute details and saving them for later. It was her talent with words-not just her verisimilitude-that made her the celebrated author she was.

Willa Cather early in life realized that achieving in the world was a male prerogative. Passivity, lack of assertiveness and energy, were traditionally the lot of the female, from childhood Willa was determined to achieve and she made her female characters like herself. She illustrated pioneer's social, cultural and economic problems which they had to face in the yearly years of their settlement. Female characters of her novels are like New Women who despite or perhaps because of their wealth exhibited an independent spirit and were accustomed to acting on their own; who exercised control over their own lives be it personal, social, or economic. The aim of this paper is to show the quest for economic freedom of pioneer women in one of her best novel, *My Antonia*.

Economic independence is about expanding the capacity of women to make genuine choices about their lives through full and equal participation in all spheres of life. It is about recognizing women's work, paid and unpaid, as valuable, both socially and economically. It is about having policies and systems that value and celebrate women's contributions, and reflect the reality of women's lives. Her ideas about economics, many of them, might develop easily enough from her experience of life in a capitalist society. Some of them, however, were recent additions to economic theory. Working knowledge of these ideas was rare, except among professional economists.

Willa Cather has depicted freedom in every walk of life like; freedom is linked with friendship, movement, labor, education, and gender in *My Antonia*. Freedom of movement brings the characters from their previous homes to the opportunities offered by Nebraska. Friendships are a result of choice; the right to choose the kind and quality of work one does leads to economic freedom. The freedom to learn and improve one's mind provides personal progress for characters. The social and

economic mobility of both men and women leads to freedom in the market-place and choice of life style.

Many women characters appear in fiction that have been damaged by or disintegrated under the stresses of life. Just as in life, however, many fictional characters survive, adapt, and triumph; these characters may never be recognized within a larger world, but they are vitally important to other characters and are the objects of deep love and respect. Creating this woman in fiction can often be difficult, because the writer must present a whole character, not one trivialized by sentimentality or stereotyped by convention. Willa Cather in *My Antonia* has developed such characters.

A major twentieth century writer, Willa Cather created some of our most vibrant portraits of American women, Alexandra Bergson, Myra Henshawe, Thea Kronborg, Marian Forrester and the immortal Antonia. The unsentimental stories of their strengths and failures have a special relevance for our time. Willa Cather had written *My Antonia* to present these immigrants life goals.

My Antonia, one of Cather's best works, is an unconventional, romantic novel of prairie life. It tells the story of a remarkable woman whose strength and passion epitomize the pioneer spirit. In *My Antonia*, Willa Cather presents Antonia as the powerful ideal of America. As a hardworking, productive, cosmopolitan immigrant, who is able to move forward by embracing new and old traditions, Antonia embodies all that Cather potentially sees in the American Dream. Through one specific passage, Cather develops powerful themes to emphasize the importance of the feminine traditional role in America by casting Antonia as mother Eve: one who possesses knowledge, goodness, and, most importantly, productivity.

Antonia moves to Nebraska from Bohemia with the rest of her family in her early teenage years. The Shimerdas had been conned into buying their place. They lived in a dingy, dirt floor cave and were very poor. Antonia's father felt that he couldn't deal with the strains of his new life and support his family so he committed suicide. Antonia struggles for survival along with her family. She works on the fields like a man and does not care about Jim's suggestions that it will make her like a man :

“Oh, better, I like to work out of doors than in a house.” She used to sing joyfully. “I not care that your grandmother says it makes me like a man. I like to be like a man.” *My Antonia* (157).

She is forced to do the work of a man and turns from a gentle young lady into a man, in some ways. The elements of fun in her childhood were few and far in between. Antonia's life is full of disappointment and she is forced to grow up much too quickly. Her awareness about the hardships of life is clear when she answers Jim in one of his questions as :

“If I live here like you that is different. Things will be easy for you. But they will be hard for us.” *My Antonia* (145).

The road she takes is full of ditches and bends but it clears and straightens in the end. As soon as her father is buried, Antonia realizes that she now has a heavy burden on her shoulders. Since she is one of the eldest in the family, she must now work to put food on their table. With the help of their neighbours, the Burdens, Antonia is able to establish a meager living for her family. She does this by working on her farm as well as the other farms in the area. While this work is very beneficial for the family, Antonia turns into a rough and wild creature. As Emmaline Burden, Jim's grandmother indicates to Jim-

“Heavy field work'll spoil that girl. She will lose all her nice ways and get rough ones”. My Antonia (143)

When she is old enough, Antonia leaves the prairies and goes in to town to find work. She becomes what we would call today, a live-in housekeeper. She works hard and sends all of her wages home to help her mother and siblings on the farm. Antonia and her friends create a quite reputation for themselves. Years later, Antonia is found in Hastings, Nebraska, married and with eleven children. Her dream has come true, to have land of her own and many delightful little children running wild all over the place. She works hard and is weary but has been repaid as her wish has been fulfilled. She has her land, her family, her garden and she still has the fire of life within her. After the rigors of bearing eleven children and running a farm, she is still vital and stalwart, brown-skinned and hardened, with no flabbiness. Her emotional strength is as great as a child. She survives the dislocation of immigration and the appalling suicide of the dignified father whom she dearly loved. Broken promises of marriage, an illegitimate child, and social ostracism are difficult realities for her, not elements of a cheap melodrama, but she only resolves to make a good life for herself and her child. The burdens that she had to carry were not meant for her shoulders. All through her life's difficulties she remained devoted to whatever family she had. Thoughts of her family always came before thoughts of herself.

For perhaps measures of wealth, career, beauty and love fall short when held next to Antonia. If one could categorize life by that unnamable light or spirit which Antonia never loses, she would surpass all who belittle her achievements in other areas. Instance, life may be hard but it's the hard times that make us stronger. It is a wonderful story of a strong woman who builds a great life out of a bad situation. Along with Antonia other female characters of the novel shares the same spirit of the protagonist.

Norwegian immigrant, Lena Lingard a small farm girl from a poverty-stricken family. She had one thing on her mind: money. She wanted freedom from worry about where her next meal would come from, or how she would pay for a new dress. Lena began her journey to wealth by becoming one of the many hired girls in the town of Black Hawk. She works for Mrs. Thomas the dressmaker in Black Hawk. She soon began making money with her new found talent, and used

this money in helping her poor mother. She is always busy in knitting stockings for little brothers and sisters, and even the Norwegian woman who disapproved of her, admitted that she is a good daughter of her mother. She enjoys her life even in bad times of her. In Lincoln develops intimacy with Jim and informs him about Antonia's conditions.

Cather conjures Lena to contrast sharply with Antonia: while Antonia possesses an independence that gives her quiet inner strength, Lena craves excitement and autonomy, refusing to marry any of the men who fall in love with her beauty and charisma. Her choice to live in San Francisco is nearly as extreme for someone from Black Hawk as Jim's decision to move to New York. It is no coincidence that Lena becomes important to Jim's life at the moment he begins to transition out of childhood and into adulthood. Lena is a sexual figure in this novel. Jim remarks on Lena's sleepy eyes, her attractive features and figure and her seductive charms. Just as Antonia comes to embody Jim's memories of childhood innocence and purity, Lena, with her desire for sophistication and her precocious sexuality, comes to represent Jim's emergence as a young adult. Lena aspires to earn money, success, and independence. She is sophisticated, fashionable and she becomes a successful dressmaker in Lincoln. Lena later moves to San Francisco with Tiny Soderball.

Tiny Soderball is one of the hired girls in Black Hawk and a friend to Antonia and Lena. She worked hard while she lived in black hawk. She started her working carrier at the Boy's Home hotel in Black Hawk. When she struck out on her own she went to Seattle and built a lodging-house in Seattle and during the time that she was running it she heard many a story about miners coming down from the northern territories with the stories of striking it rich. She decided to go for the glory. She sold her business and set out for the Alaskan territory, but without a little bit of help. She went in the company of a carpenter and his wife whom she had persuaded to go along with her.

The day she arrived she heard a tale from a man claiming that there had been a rich gold strike farther up river and with that she and her companions and around fifteen hundred people set out as well. But unfortunately within a few weeks she along with the droves of other people was out of work. Tiny and the carpenter's wife began to cook for them in a tent. The miners gave her a building lot, and the carpenter put a log hotel for her. This not only initiated her business savvy but helped her become extraordinarily wealthy. After about ten years of being a hard core business woman she lost interest in much of what she held dear for the majority of her life up to that point. She said frankly that nothing interested her much now but making money. Not much may have gotten her excited any more but she was still a good person at heart. She is just the same as she always was. She is careless, but she is level-headed.

Another important character in this series is Frances Harling, the daughter of Mrs. Harling in whose house Antonia works as a housemaid. Mrs. Harling is the

matriarch of the Harling family and a charismatic active woman. Her daughter Frances shares her quality of becoming independent in every segment of life. She is the oldest of the Harling children. She has all the information about people around her town and has a very sound business mind. She has her father's business acumen and manages her father's accounts with a concern for others and philanthropy which her father lacks.

In this novel, Cather represented two different economical societies; one of the immigrants's which is portrayed by the hard working pioneer women like Antonia Shimerda, Lena Lingard and Tiny Soderball, a part of the earning strata willingly or unwillingly. This rural society of prairie farmlands competes with the other society of urban land which is represented by Frances Harling the modern New Woman.

References

- Cather, Willa, *My Antonia*, Boston : Houghton Mifflin Co., 1918.
- Edith, Lewis, *Willa Cather Living - A Personal Record*, New York : Alfred A. Knopf, 1953, 13.
- James E. Miller, Jr., "My Antonia : A Frontier Drama of Time", *American Quarterly*, 10(4), Winter 1958, 476.
- Murphy, John J., *My Antonia : The Road Home*, Boston : Twayne, 1989.
- Rosowski, Susan J., "Willa Cather's Women", *Studies in American Fiction*, 9, Autumn 1981, 261-75. ★

Relevance of Skill Education in Perspective of Home Science

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Skill education is a form of education that focuses on cultivating personal life skills such as self reflection, critical thinking, problem solving and interpersonal skills. It aims to help children reach their full personal potentials and to prepare them for the challenges of everyday life. The present paper is an attempt to identify the importance of skills in Home Science subject, to assess the causes of less employment for Home Science graduates, to ascertain the reason for skill gap and To strategize and incorporation of new thrust areas to make Home Science syllabus skill oriented. It has been shown on the basis of empirical evidence collected from seventy seven respondents (teachers in home science colleges) that skill education is the need of today and no subject can thrive in the absence of skill education. In the context of Home Science the importance of skill education is highlighted as it equips the students with multiple skills.

[Keywords : Education, Skill education, Home Science, Multiple skills]

1. Introduction

Home Science is the science of a home and it includes all the things that concern the person, home, family members and resources. It is the education for better living and the core of this education is the application of various principles of science and humanities to improve human environment, family nutrition,

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management of resources and child development. In home science, the science is studied in an artistic way and at the same time, art is developed scientifically in the form of skills. A skill is the ability to carry out a task with determined results often, within a given amount of time, energy or both. It is a type of work or activity which requires special training and knowledge.

Home Science is a discipline which equips an individual with various skills in cooking, stitching, laundering, management, communication etc. In spite of a multi-disciplinary approach, this subject is losing its shine by the each day. Though various attempts are made to attract students like - renaming of Home Science, RAWE, Experiential Learning, Hands on Training etc. even at some of the universities the admission were made open to boys also, but still the data regarding enrollment in the subject is poor. This is a matter of serious concern. The possible reason behind this may be less job/ employment/entrepreneurship opportunities. Today in the era of globalized world, the new demands of industries are providing up. The curriculum of the various universities (both agriculture and traditional) need to be modified according to the current demands. Most institutions do not prepare candidates for the new global trends, making them struggle while facing the competencies of the professional realm. Recognizing the need, efforts are being made with positive steps such as National Qualification framework (NQF) National Skills Qualification Framework (NSQF). This will also lead to a paradigm shift in employment from being qualification based to a skill based economy. Keeping this thing in mind a project entitled 'Status of Available Training Packages, Development of Entrepreneurial Skill and Identification of Future Need in Home Science Graduates' funded by ICAR was sanctioned for the financial year 2017-18.

2. Objectives

The present paper is a part of the same and exploring the perception of home science according to the point of view of students.

The objectives of the study are :

1. To identify the importance of skills in Home science subject.
2. To assess the causes of less employment for Home Science graduates.
3. To ascertain the reason for skill gap and
4. To strategize and incorporation of new thrust areas to make Home Science syllabus skill oriented.

3. Methodology

Total seventy seven respondents (teachers in home science colleges) participated in the study. These were selected from different home science colleges in India. Some were contacted personally and others were contacted through mails. A well-constructed questionnaire was used for the purpose of the study which was evaluated by twelve Home Science teachers.

4. Results and Discussion

Home science as a subject offers wide range of skills to its students. But still students are suffering for good and satisfying jobs. In present research this problem was focused primarily by identifying the importance of skills subject as well reasons for less job opportunities. This provides a strong base to identify the new thrust area as per the reports of Sector Skills Council (National Skill Development Council) and the procedure of its implication. All this is described in the following four headings : Background information of respondents; Importance of Skills in Home Science; Reasons for less employment opportunities; and Identification of new thrust areas and industry collaboration for its implementation (New thrust areas to be included in the subject at UG level; Reasons for the gap between the current skills and the required skills; Industries which can be collaborated to increase employment; Suggestion for industry collaboration with Home Science; and Suggestion and Importance of placement cell in the college/University).

4.1 Background Information of Respondents

Teachers of home science from various institutes were approached for their inputs. Respondents from all the streams {Extension education (24%) followed by Textile and apparel Designing (22%), Human development (20%), Foods and nutrition (18%) and Family resource management (16%)} and twelve states {Rajasthan (38%) and Karnataka (18%). Less than 10 percent contribution was from the states of Gujarat (8%), Madhya Pradesh (7%), Maharashtra (5%), Punjab, Delhi and Telangana (4%)}, participated in the research

4.2 Importance of Skills in Home Science

Skills have great importance with education especially in case of home science because the subject itself offers multiple skills. Most of the respondents also agree with this, as 84% revealed that skills are necessary as it promotes entrepreneurship and generates employment (78%).

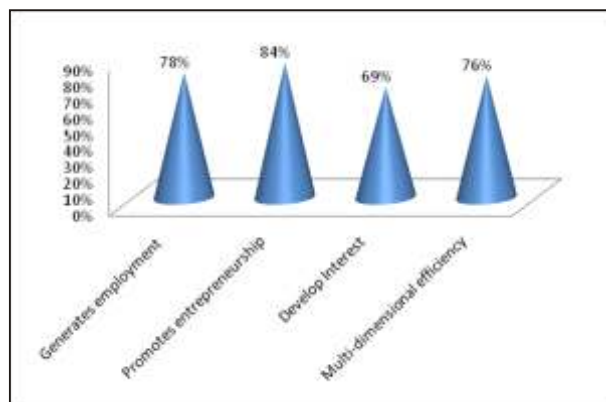


Figure-1 : Importance of Skills in Home science

Sixty nine percent feels that skills makes the courses interesting and provides efficiency in multi-dimensions of training (76%).

4-3 Reasons for Less Employment Opportunities in Home Science

The reasons being were fixed mind set regarding the discipline (72%), job roles not spelled out (72%) need based modification of the syllabus (70%), no industry collaboration (85%), traditional indigenous knowledge (55%). One more problem acted as an obstacle for mothers to work in industries was no day care facilities at industries (As majority of female opted this course so this reason almost affected almost all the students).

Table-1 : Reason for less employment opportunities for home science graduates

N=77

| S. No. | Particulars (Reasons) | Percentage |
|--------|--|------------|
| 1. | No industrial collaboration | 85 |
| 2. | Job roles not spelled out well | 72 |
| 3. | Traditional indigenous knowledge which cannot be generalized | 55 |
| 4. | No grass root concrete outreach programme on regular basis | 61 |
| 5. | Fix mind set regarding this discipline | 72 |
| 6. | Less lecturers posts in Home Science | 66 |
| 7. | Need based modification of the syllabus | 70 |
| 8. | Time consuming jobs less preferred by female | 43 |
| 9. | No day care facility at Industrialized centers | 55 |

4-4 Identification of New Thrust Areas and Industry Collaboration for its Implementation

4-4-1 New Thrust Areas to be included in the Subject at UG level

NSDC (National Skill development Cooperation) is working with 38 sector skill councils (SSC) for the quality assurance in skill education in India , out of these 38 SSC , ten SSC (namely Media and Entertainment Council, Health Care Council, Retailing and Online Trading, Food Industry Capacity and Skill Initiative, Textile and Handloom Sector Skill Council, Apparel Making and Home Furnishing Sector, Beauty and Wellness Sector Skill Council, Tourism and Hospitality Sector Skill Council and Media and Entertainment Skill Council) have few jobs roles which are same as syllabus of Home Science is offering and have future perspectives for home science graduates.

Respondents in present research were asked to mention new thrust areas of their subjects which are helpful in providing more job opportunities to the students. For this few areas were incorporated in the tool and the respondents were asked to select them on the basis of their preferences. Online trading (55%),

beauty and fitness (66%), handicraft (66%) and hotel industry (55%). Ergonomics (58%) and hospitality and tourism (58%) came out to be new ventures in the field of home science.

Few associated areas were selected in the field of home science. They are housekeeping for children and elderly (63%), fashion stylist (68.65%) food counselor for special groups and therapeutic counselor (66%). When asked about the skill gap between the demand and supply of skill (i.e. input and output) for the practical's offered at the UG level, 76% respondents accepted that there is a gap in the offered skill and the skills required at market level.

These suggested areas than compared and assessed with the reports of respective sector skill council (Projected Skill requirements in 2022) and a comprehensive picture is given below :

Table - 2 : Suggestion on new thrust areas by academicians and associated SSC reports

| Thrust areas by Identified by Academicians | Assessment of Respective Sector Skill Council's Skill Report (Secondary source) |
|--|---|
| Hospitality and tourism | <p>This sector currently employs over 6.9 million people and is expected to employ more than 13 million by 2022.</p> <p>Skills provided in home science related to above job roles are travel agent, receptionist, travel guide, event planner, worship manager, kitchen manager etc.</p> <p>Job roles related to above sector as suggested by NSDC is destination experts, team leaders ticketing expert, front office associate, F&B services associate, housekeeping associate.</p> <p>Skill required for the above job roles are coordinational relationship skills, leadership skills, communication skills, housekeeping skills etc.</p> |
| Media and entertainment | <p>The Indian media and entertainment is expected to grow at a CAGR (compound annual growth rate) of 14.2% by 2018, has a high demand for skilled professionals across each of its sub-sectors. Film and television sectors employ a major portion of the workforce due to the digitization of the technology.</p> <p>Skills provided to the students in home science related to media and entertainment industry is programme planning, execution and evaluation, planning and implementation of audio-visual aids, research, journalism, blogging etc.</p> <p>Job roles identified can be as animator, game designer, script writer, programmers, broadcast operators etc.</p> <p>Skill required for the above job roles include animation skills, user interface skill (soft skill for game concept designing), compositing skills, generic programming skills, writing styles, creative and conceptualization skills etc.</p> |
| Teaching research and extension | <p>In India only 23% of the population receives some form of training education. The number of students enrolled in higher education is expected to grow from 22 million (2012) to 34 million (2022).</p> |

| | |
|--|--|
| | <p>Skills provided in home science are related as counsellor, as a teacher and trainer in vocational institutes.</p> <p>Job roles can be research staff, lab assistant, trainers mobilizer, master trainers, placement coordinators, project managers etc.</p> <p>skills required are pedagogical skills, basic research skills, training skills, through knowledge of subject matter, teaching skills etc</p> |
| Beauty and wellness | <p>Employment in beauty sector is expected to grow at a CAGR (computed annual growth rates) of 20% in organized sector. Fitness segments is expected a CAGR of 19% and 22% in organized sector.</p> <p>Skills provided in home science are fitness expert, yoga expert, spa assistant, gym trainer, image consultant etc.</p> <p>Job roles can be GYM trainer, physiotherapist, centre manager (GYM or slimming), slimming therapist, spa manager, and front desk executive skills.</p> <p>Skills required are fitness and nutrition skills, injury rehabilitation, communication and motivational skills, general spa orientation etc.</p> |
| Health care | <p>Health care sector was contributing by 3.7% to the total GDP of India (2013) Health care sector involves around 300 divisions , which is dominated by other human health activities.</p> <p>Diet Planner and Counselor, General duty assistance, Frontline Health Worker are the job roles which can be adopted by a non medical student.</p> <p>Suggested Job roles could be- Community health worker, geriatric and children attendant or care caretaker.</p> <p>Skills provided in home science related to this sector are food counseling, food grading, customize diet planning, community nutrition, menu planning etc. Diet planner and counselor, general duty assistance, front line health worker are the job roles which can be adopted by a home science student.</p> <p>Skill required for this are - core clinical skills, Essentials of nutrition sanitation and environment, General care of the patient, Customize menu planning according to preferences.</p> |
| Textile, apparel, home furnishing and handloom | <p>Currently 15.23 million people are employed in the textile sub sector across yarn and fabric, home textiles, technical, textiles and ready made garments. Human resource requirement in the sector is expected to 21.54 million by 2022.</p> <p>Skills provided under home science are fashion stylist, CAD operator, fiber and fabric quality inspector, accessory designer.</p> <p>Job roles related to this as skilled out by NSDC are operators, supervisors, production manager, merchandisers, sample designer etc. Skill needed are basic machine operation skills related to different processes global market trends, designing skills computer literacy and so on.</p> |
| Food Processing | <p>This sector is expected to provide 4.40 million additional job opportunities by the end of 2022.</p> <p>Skills provided are related to food preservation, food processing F&B services, cafeteria and canteen</p> <p>Skill gaps exist in food processing sector, ancillary industries such as bottling and packaging, workforce to be skilled in basic hygiene and sanitary practices. , customer relationship management skills which are integral to maintaining healthy relationship with institutional players, such as hotels, restaurants and retailers.</p> |

4.4.2 Reasons for the Gap between the Current Skills and the Required Skills

Reasons for the gap between the current skills and the required skills were asked from the respondents and their responses are presented in the table below :

Table- 3 : Reasons behind skill gap as per the academicians N=77

| S. No. | Particulars (Reasons) | Percentage |
|--------|---|------------|
| 1. | Due to the existing curriculum | 60 |
| 2. | Not need based | 63 |
| 3. | Need of skill courses | 75 |
| 4. | Lack of infrastructure or resources | 67 |
| 5. | Lack of Home Science teachers | 51 |
| 6. | Too professional market | 69 |
| 7. | Lack of campus placement | 75 |
| 8. | Lack of academic industry inter linkage | 88 |

A large number of respondents opted (88%) that the major reason for the gap between the current skills and the required skills in home science were lack of academic industry inter linkage, followed by lack of placement (75%). Professional market demand (69%) was also listed as an important reason for the skill gap. Few respondents mentioned the need of modifying the syllabus (60%) and making it need based (63%).

4.4.3 Industries to be Collaborated to Increase Employment

Today India is moving ahead with skill India and Make in India Mission. As a result more and more industries are getting introduced. This opportunity can be beneficial for the courses like Home Science, as it offers multiple skills to their students. When the respondents were asked to put their views on it, they suggested to collaborate with fashion houses (81%), beauty and wellness (67%), tourism and hospitality industry, media agencies (73%) toy making industry (72%), event planner (70%) food industry (79%). Some new options were opted by the respondents as curriculum development companies (72%), teachers training institute (70%) and administration of ECE centres (66%). Because, Home Science is a discipline in which we study various aspects of home making such as stitching, cooking, embroidery, research, journalism, child development etc. These aspects have assumed a different form in today's aspect in the form of different industries

Table-4 : Industries which can be collaborated to increase employment N=77

| S. No. | Particulars (Reasons) | Percentage |
|--------|-------------------------------|------------|
| 1. | Health care through life span | 73 |
| 2. | Beauty and Wellness | 67 |
| 3. | Tourism and Hospitality | 66 |

| | | |
|-----|---|----|
| 4. | Sales and Marketing | 58 |
| 5. | Hotels and Restaurants | 69 |
| 6. | Agriculture implement manufacturing industry | 63 |
| 7. | Food industry | 79 |
| 8. | Event planners | 70 |
| 9. | Media agencies | 73 |
| 10. | Toy making industry | 72 |
| 11. | Hospital and diet counselor | 81 |
| 12. | Hospital and mental health counselor | 75 |
| 13. | Textiles | 75 |
| 14. | Architectural | 72 |
| 15. | Women and child care | 78 |
| 16. | Curriculum development companies | 72 |
| 17. | Degree focusing on giving training to teachers | 70 |
| 18. | Cooperate offices focusing on administration of ECE centers | 66 |
| 19. | Fashion houses textile industries | 81 |

4.4.4 Suggestion for Industry Collaboration with Home Science

Internship and campus placement has been an integral part of all the professional courses be it engineering, medical, pharmacy and so on. Same is the case with home science. A lot many options were suggested for the collaboration of industries with home science. These were one week orientation between the industry and the students (63%), needs of industry be spelled out (76%), organizing screening tests (66%), internship programme in line with industries (90%), proper consultation while syllabus formation (75%), MoUS (70%) and training of students and faculty (85%).

Table-5 : Suggestion for industry collaborate with Home Science N=77

| S. No. | Particulars (Steps) | Percentage |
|--------|--|------------|
| 1 | One week orientation between the students and the industry representatives | 63 |
| 2 | Identification of the needs of the industry should be spelled out | 76 |
| 3 | Organize a aptitude test along with an interview to recruit the students | 66 |
| 4 | Internship programmes with industries | 90 |
| 5 | While framing syllabus industry people can be consulted | 75 |
| 6 | MoUs with identified areas | 70 |
| 7 | Trainings of students as well as faculty | 85 |

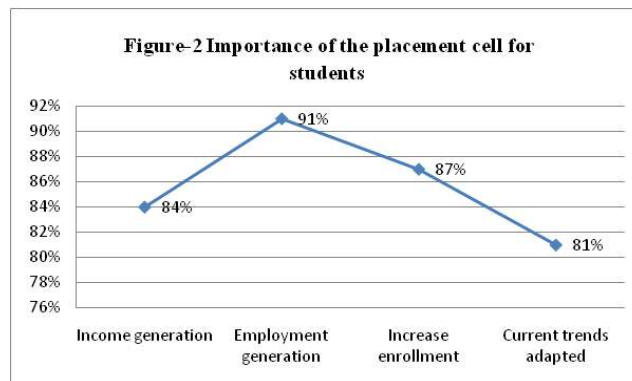
4.4.5 Suggestion and Importance of placement cell in the college/University

Requirement of placement cell was felt on an urgent basis in all the home science colleges. Some suggestion were put forward for the improvisation of the placement cell by the respondents such as organizing placement fairs (82%), active placement cell (79%), six month training programme (79%), Frequent visit of industry experts (93%) and so on. The duration of the training in industries was also suggested by different individuals for different time such as (3-4months) 7%, (4-6 months) 36%, (6 months and above) 39% and so on.

Table-6 : Suggestions for placement cell in the University N=77

| S. No. | Particulars (Suggestions) | Percentage |
|--------|--|------------|
| 1. | Placement fairs | 82 |
| 2. | Active placement cell | 79 |
| 3. | Proper duration of the internship programme | |
| | # 3-4 months | 7 |
| | # 4-6 months | 36 |
| | # 6 months and above | 39 |
| 4. | Internship programme merged with the placement | 79 |
| 5. | Six month training programme | 79 |
| 6. | Frequent visits of industry experts | 93 |

Many factors were opted for the importance of placement cell for the students. These were income generation (84%), employment generation (91%), increase in student’s enrollment, personally adapted to current trends (81%) and so on. When they asked about the importance of placement cell for the benefit of the subject (46%) of the respondents favored it.



5. Conclusion

Skill education is the need of today and no subject can thrive in the absence of skill education. In the context of Home Science the importance of skill education is highlighted as it equips the students with multiple skills. Skill education leads to

enlighten and help to empowerment. With reference to Home Science motivates the students to explore with multiple job opportunities. New thrust areas and placements cell will add feather to the cap. Hospitality and tourism, Beauty and well ness, Health care, food processing are the emerging trends of the global world , which can be merged with the existing skills of home science. This will not only increase the enrollment of students but will also increase its survival in the competitive world today.

References

- http://agritech.tnau.ac.in/org_farm/orgfarm_vermicompost.html
http://msde.gov.in/Executive_Summary/Beauty_and_Wellness.pdf
http://msde.gov.in/Executive_Summary/Education_and_Skill_Development.pdf
http://msde.gov.in/Executive_Summary/Food_Procesing.pdf
http://msde.gov.in/Executive_Summary/Furniture_and_Furnishings.pdf
http://msde.gov.in/Executive_Summary/Handlooms_Handicrafts.pdf
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http://msde.gov.in/Executive_Summary/Travel_Tourism_and_Hospitality.pdf
<http://msde.gov.in/executive-summary-report.html>
<http://www.kvk.pravara.com/pages/Widly%20Adopted%20Technologies/15.Vermicompost%20Production/Vermicompost%20Production.htm>
<http://www.nsdcindia.org/sites/default/files/files/Summary-QP-NOS-list-as-on-04th-Nov-2016.pdf> cited on December 22, 2016
Njuguna, J.M. (2013) The role of Kitchen gardens in food security and nutritional diversity : A case study of workers at James Finlay Kenya-Kericho.chss.uonbi.ac.ke/.../Kitchen%20Garden%20Research%20★

Gender Bias for Income Opportunities in Villages : A Study of Kalisindh Thermal Power Project

Reeta Karra*, Pooja Jain and P. N. Mishra*****

Money is necessary for human being to fulfil their basic needs such as food, cloth and shelter irrespective of their gender. Money can be earned by choosing any mode of earning out of available income opportunities. Male and female can choose earning method on the basis of their education and talent. This study is focused to study gender bias for available income opportunities for villagers' living in vicinity of Kalisindh Thermal Power Project. Required information has been gathered through survey of villagers living in villages Devri, Motipura, Nimoda, Singhania and Undal. a structured questionnaire was filled during survey. Convenience and judgemental sampling method were used for selection of villagers. Frequency, percentage, simple arithmetic mean and ANOVA are the statistical tools used for the analysis. The study revealed that there is no biasing of gender for availing available income opportunities for villagers living in vicinity of Kalisindh Thermal Power Project.

[**Keywords** : ANOVA, Convenience sampling, Judgemental sampling, Education, Income opportunities]

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1. Introduction

Male or female both require money for fulfilling their basic need like food, water, clothes and shelter etc. To earn money they have to work. Therefore income is imperative for survival of everyone irrespective of their gender. Available income opportunities may be different for male and female as per their perception and expectation. It depends upon their education level and talent. Karra et al. (2017) described available education facilities in villages located in vicinity of Kalisindh Thermal Power Project.

Klasen (2002) suggested that gender inequality in education directly affects economic growth by lowering the average level of human capital. In addition, growth is indirectly affected through the impact of gender inequality on investment and population growth. Francis et al. (2015) found that female CFOs were more conservative in their financial reporting.

Kalisindh thermal power project is constructed near village Undal in state Rajasthan. For construction of this thermal power project, land of five villages viz. Devri, Motipura, Nimoda, Singhania and Undal was acquired, for which compensation was paid to villagers. In this study our objective is to study effect of gender on income opportunities available for villagers living in vicinity of Kalisindh Thermal Power plant (KaTPP). For this purpose statistical tool ANOVA has been applied on earning sources considered for available income opportunities for villagers. This paper presents the findings and interpretation.

2. Literature Review

Many pioneers have presented their views related to this work. Few of them are mentioned here : Drèze and Sen (1989); Pritchett and Summers (1996); Dollar and Kraay (2000); World Bank (2000); Ravallion (2001) reported that gender inequality may reduce economic growth. Economic growth advances well-being as measured by such indicators as longevity, literacy, and poverty.

Galor and Weil (1996); Lagerlöf (1999) examined the links between gender inequality in education or earnings on fertility and economic growth in an overlapping generations framework.

Lagerlöf (1999) showed that initial gender inequality in education can result in high fertility, low economic growth, and continued gender inequality in education, thus creating a poverty trap that justified public intervention.

Seguino (2000b) found that gender gap in education reduced economic growth in a sample of export-oriented middle-income economies, whereas gender gap in pay increased it.

Knowles, Lorgelly, and Owen (2002) extended the Solow model by considering male and female human capital as separate and thus imperfectly substitutable, factors of production.

Mohan and Chen (2004); Levi, Li, and Zhang (2008); Huang and Kisgen (2013) investigated the impact of female executives on various corporate decisions such as financing, investment, mergers and acquisitions.

Cadsby and Maynes (2005) suggested that women tend to behave more like one another than men, i.e. their decisions were less individually oriented and more in line with the decisions of others. They investigated gender differences in trading activity.

Skalpe (2007) compared the gender pay gap among chief executive officers (CEOs) in a sample of Norwegian tourism and manufacturing firms. He found that more than 20% of the CEOs in tourism were women, as opposed to less than 6% in the sample of manufacturing firms. His results confirmed that female CEOs were wage discriminated in both sectors.

Levi, Li & Zang (2008) examined whether the gender of CEOs or corporate directors played a role in the pricing and form of mergers and acquisitions.

Barua, Davidson, Rama, and Thiruvadi (2010) and Peni and Vahamaa (2010) found that firms with female CFOs had lower absolute discretionary accruals or higher income-decreasing discretionary accruals.

Dyreng, Hanlon, and Maydew (2010) did not find that executive gender affected corporate tax avoidance.

Ge, Matsumoto, and Zhang (2011) did not find that CFO gender affected discretionary accruals.

Booth, A. L., & Nolen, P. (2012) stated that women are under-represented in high-paying jobs and in high-level occupations.

Charness, & Gneezy, (2012) found that women invest less, and thus appear to be more financially risk averse than men.

Robb & Watson (2012) examined the performance of female- and male-owned firms and found that female-owned firms underperform in comparison to male-owned firms.

Francis, B., Hasan, I., Park, J. C., & Wu, Q. (2015) investigated the effect of CFO gender on corporate financial reporting decision-making. They focused on firms that experience changes of CFO from male to female. They compared in their paper the firms' degree of accounting conservatism between pre- and post-transition periods.

Karra et al. (2017) concluded in their article various sources of available income opportunities for villagers living in vicinity of Kalsindh Thermal Power Project.

Karra & Mishra (2017) described problems of school education in villages faced by villagers for education of their children.

Karra et al (2018) presented the findings emerged from analysis of new business opportunities developed for people having different education levels.

3. Objective

This study is focused to single objective of analysis of gender bias for available income opportunities in villages located in vicinity of Kalisindh Thermal Power Project.

4. Rationale

Basic needs such as food, water, clothes etc. can be fulfilled by money. Money can be earned with available income opportunities. Fulfilment of basic needs is imperative for survival of everyone irrespective of their gender. Kalisindh Thermal Power Project is constructed near village Undal, Rajasthan. Few more villages are also situated in neighbouring area of this Thermal Power Project. No study has earlier been carried out to find out gender bias for available income opportunities in these villages. This research is to analyze gender bias for available income opportunities for villagers living in vicinity of Kalisindh Thermal Power Project. The researcher has gone through exhaustive amount of literature available related to this field of study. Very little research in this field is carried out till now. This study is an venture to plug this gap.

5. Hypothesis

Hypotheses framed and tested for this study are mentioned as under:-

H₁ : “There is no significant effect of gender on earning from wage / salary”.

H₂ : “There is no significant effect of gender on earning from farming”.

H₃ : “There is no significant effect of gender on earning from shop”.

H₄ : “There is no significant effect of gender on earning from wood and wood products”.

H₅ : “There is no significant effect of gender on earning from tourism”.

H₆ : “There is no significant effect of gender on earning from trading”.

H₇ : “There is no significant effect of gender on earning from rental income”.

H₈ : “There is no significant effect of gender on earning from handicraft items”.

H₉ : “There is no significant effect of gender on earning from pension”.

H₁₀ : “There is no significant effect of gender on earning from poverty funds”.

H₁₁ : “There is no significant effect of gender on Governmental aids / assistance (unemployment wage) received”.

H₁₂ : “There is no significant effect of gender on in kind aids received from the Government (coal etc)”.

H₁₃ : “There is no significant effect of gender on aids /assistance received from NGOs”.

H₁₄ : “There is no significant effect of gender on earning from allowances for elderly”.

H₁₅ : “There is no significant effect of gender on earning from other sources”.

6. Research Methodology

The descriptive type of research is used for this study. A survey of villagers living in five villages i.e. Devri, Motipura, Nimoda, Singhanian and Undal have been carried out. Required information has been gathered by filling a structured questionnaire during survey. Convenience sampling and judgemental sampling was considered appropriate for selection of villagers because there is not much difference among the people of these villages. Reliability analysis was done to identify internal consistency of the variables. Table-1 shows Cronbach’s alpha value of the scale. It was found to be greater than 0.7. This shows adequate internal consistency. Frequency, percentage, simple arithmetic mean and ANOVA are the statistical tools used for the analysis.

Table-1 : Reliability Statistics

| Name of Village | Cronbach Alpha |
|-----------------|----------------|
| Devri | 0.735 |
| Motipura | 0.771 |
| Nimoda | 0.724 |
| Singhanian | 0.757 |
| Undal | 0.809 |

7. Data Analysis and Findings

Money is necessary for human being to fulfil their basic needs irrespective of their gender. Male and female may have different perceptions and expectations for earning money. Accordingly they choose the opportunity so that they can earn money. It depends upon their education and talent also.

Our objective of this present investigation is to study gender bias for available income opportunities for villagers living in vicinity of Kalisindh Thermal Power Project. For assessing the objective following indicators were considered :

- » Earning from wage/salary
- » Earning from farming
- » Earning from shop
- » Earning from wood and wood products
- » Earning from tourism
- » Earning from trading
- » Earning from rental
- » Earning from handicraft items

- » Earning from pension
- » Earning from poverty fund
- » Governmental aids/assistance (unemployment wage) received
- » In Kind Aids received from Government (coal etc)
- » Aids/Assistance received from NGOs
- » Earning from allowance for elderly
- » Earning from other sources

The data related to this objective was analyzed with the help of statistical tools percentage and ANOVA. The findings of analysis are interpreted as below:-

7.1 Gender

Findings emerged through percentage analysis are described as below :

Data contained in table below show that majority of respondents from all five villages, who participated in this survey, are male. No female participated from village Devri. Only 4% females of village Motipura, 7% females from village Nimoda 28% females from village Singhanian and 15 % females from village Undal participated in survey. It infers that still in villages' position of females is backward; they do not come in front.

Table-2 : Gender

| Name of Village | Male (%) | Female (%) |
|-----------------|----------|------------|
| Devri | 100 | 0 |
| Motipura | 96 | 4 |
| Nimoda | 93 | 7 |
| Singhanian | 72 | 28 |
| Undal | 85 | 15 |

8. Interpretation of ANOVA

The findings and interpretation of ANOVA table is described as below :

8.1 Interaction between Gender and Earning from Wage/Salary

ONE WAY ANOVA of indicator 'Earning from wage/salary' of objective gender bias for income opportunities available for villagers living in vicinity of KaTPP is presented as below :

Table-3 : ANOVA : Earning from Wage/Salary

| | Sum of Squares | Df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|-------|-------|
| Between Groups | 0.009 | 1 | 0.009 | 0.023 | 0.879 |
| Within Groups | 94.110 | 251 | 0.375 | | |
| Total | 94.119 | 252 | | | |

It can be observed from table-3 that F value of interaction between the gender and earning from wage/salary is 0.023 with degree of freedom 1, which is not significant. In the light of this the null hypothesis namely “There is no significant effect of gender on earning from wage/salary” is not rejected. Hence, it may be concluded that indicator earning from wage/salary of Income opportunities available for villagers is independent of gender and perception of male and female is at par for this indicator.

8.2 Interaction between Gender and Earning from Farming

ONE WAY ANOVA of indicator ‘Earning from farming’ of objective gender bias for income opportunities available for villagers living in vicinity of KaTPP is presented as below :

Table-4 : ANOVA : Earning from Farming

| | Sum of Squares | Df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|-------|-------|
| Between Groups | 0.537 | 1 | 0.537 | 0.787 | 0.376 |
| Within Groups | 171.187 | 251 | 0.682 | | |
| Total | 171.723 | 252 | | | |

It can be observed from the above table that F value of interaction between the gender and earning from farming is 0.787 with degree of freedom 1, which is not significant. In the light of this the null hypothesis namely “There is no significant effect of gender on earning from farming” is not rejected. Hence, it may be concluded that indicator earning from farming of Income opportunities available for villagers is independent of gender and perception of male and female is at par for this indicator.

8.3 Interaction between Gender and Earning from Shop

ONE WAY ANOVA of indicator ‘Earning from shop’ of objective gender bias for income opportunities available for villagers living in vicinity of KaTPP is presented as below :

Table-5 : ANOVA : Earning from Shop

| | Sum of Squares | Df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|-------|-------|
| Between Groups | 0.008 | 1 | 0.008 | 0.072 | 0.789 |
| Within Groups | 28.901 | 251 | 0.115 | | |
| Total | 28.909 | 252 | | | |

It can be observed from the above table that F value of interaction between the gender and earning from shop is 0.072 with degree of freedom 1, which is not significant. In the light of this the null hypothesis namely “There is no significant effect of gender on earning from shop” is not rejected. Hence, it may be concluded that indicator earning from shop of Income opportunities available for villagers is

independent of gender and perception of male and female is at par for this indicator.

8.4 Interaction between Gender & Earning from Wood and Wood Products

ONE WAY ANOVA of indicator 'Earning from wood and wood products' of objective gender bias for income opportunities available for villagers living in vicinity of KaTPP is presented as below :

Table-6 : ANOVA : Earning from Wood and Wood Products

| | Sum of Squares | Df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|---|------|
| Between Groups | 0.000 | 1 | 0.000 | — | — |
| Within Groups | 0.000 | 251 | 0.000 | | |
| Total | 0.000 | 252 | | | |

It can be observed from the above table that F value of interaction between the gender and earning from wood and wood products is negligible, hence insignificant. In the light of this the null hypothesis namely "There is no significant effect of gender on earning from wood and wood products" is not rejected. Hence, it may be concluded that indicator earning from wood and wood products of Income opportunities available for villagers is independent of gender and perception of male and female is at par for this indicator.

8.5 Interaction between Gender and Earning from Tourism

ONE WAY ANOVA of indicator 'Earning from tourism' of objective gender bias for income opportunities available for villagers living in vicinity of KaTPP is presented as below :

Table-7 ANOVA : Earning from Tourism

| | Sum of Squares | Df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|---|------|
| Between Groups | 0.000 | 1 | 0.000 | — | — |
| Within Groups | 0.000 | 251 | 0.000 | | |
| Total | 0.000 | 252 | | | |

It can be observed from the above table that F value of interaction between the gender and earning from tourism is negligible, hence insignificant. In the light of this the null hypothesis namely "There is no significant effect of gender on earning from tourism" is not rejected. Hence, it may be concluded that indicator earning from tourism of Income opportunities available for villagers is independent of gender and perception of male and female is at par for this indicator.

8.6 Interaction between Gender and Earning from Trading

ONE WAY ANOVA of indicator 'Earning from trading' of objective gender bias for income opportunities available for villagers living in vicinity of KaTPP is presented as below :

Table-8 : ANOVA: Earning from trading

| | Sum of Squares | Df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|---|------|
| Between Groups | 0.000 | 1 | 0.000 | — | — |
| Within Groups | 0.000 | 251 | 0.000 | | |
| Total | 0.000 | 252 | | | |

It can be observed from the above table that F value of interaction between the gender and earning from trading is negligible, hence insignificant. In the light of this the null hypothesis namely "There is no significant effect of gender on earning from trading" is not rejected. Hence, it may be concluded that indicator earning from trading of Income opportunities available for villagers is independent of gender and perception of male and female is at par for this indicator.

8.7 Interaction between Gender and Earning from Rental

ONE WAY ANOVA of indicator 'Earning from rental' of objective gender bias for income opportunities available for Villagers living in Vicinity of KaTPP is presented as below :

Table-9 : ANOVA : Earning from rental

| | Sum of Squares | Df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|-------|-------|
| Between Groups | 0.002 | 1 | 0.002 | 0.124 | 0.725 |
| Within Groups | 3.982 | 251 | 0.016 | | |
| Total | 3.984 | 252 | | | |

It can be observed from the above table that F value of interaction between the gender and earning from rental is 0.124 with degree of freedom 1, which is not significant. In the light of this the null hypothesis namely "There is no significant effect of gender on earning from rental" is not rejected. Hence, it may be concluded that indicator earning from rental of Income opportunities available for villagers is independent of gender and perception of male and female is at par for this indicator.

8.8 Interaction between Gender and Earning from Handicraft Items

ONE WAY ANOVA of indicator 'Earning from handicraft items' of objective gender bias for income opportunities available for villagers living in vicinity of KaTPP is presented as below :

Table-10 : ANOVA : Earning from Handicraft Items

| | Sum of Squares | Df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|---|------|
| Between Groups | 0.000 | 1 | 0.000 | — | — |
| Within Groups | 0.000 | 251 | 0.000 | | |
| Total | 0.000 | 252 | | | |

It can be observed from the above table that F value of interaction between the gender and earning from handicraft items is negligible, hence insignificant. In the light of this the null hypothesis namely “There is no significant effect of gender on earning from handicraft items” is not rejected. Hence, it may be concluded that indicator earning from handicraft items of Income opportunities available for villagers is independent of gender and perception of male and female is at par for this indicator.

8·9 Interaction between Gender and Earning from Pension

ONE WAY ANOVA of indicator ‘Earning from pension’ of objective gender bias for income opportunities available for villagers living in vicinity of KaTPP is presented as below:

Table-11 : ANOVA: Earning from pension

| | Sum of Squares | Df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|-------|-------|
| Between Groups | 0.000 | 1 | 0.000 | 0.124 | 0.725 |
| Within Groups | 0.996 | 251 | 0.004 | | |
| Total | 0.996 | 252 | | | |

It can be observed from the above table that F value of interaction between the gender and earning from pension is 0.124 with degree of freedom 1, which is not significant. In the light of this the null hypothesis namely “There is no significant effect of gender on earning from pension” is not rejected. Hence, it may be concluded that indicator earning from pension of Income opportunities available for villagers is independent of gender and perception of male and female is at par for this indicator.

8·10 Interaction between Gender and Earning from Poverty Fund

ONE WAY ANOVA of indicator ‘Earning from poverty fund’ of objective gender bias for income opportunities available for villagers living in vicinity of KaTPP is presented as below :

Table-12 : ANOVA : Earning from Poverty Fund

| | Sum of Squares | Df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|---|------|
| Between Groups | 0.000 | 1 | 0.000 | — | — |
| Within Groups | 0.000 | 251 | 0.000 | | |
| Total | 0.000 | 252 | | | |

It can be observed from the above-12 table that F value of interaction between the gender and earning from poverty fund is negligible, hence insignificant. In the light of this the null hypothesis namely “There is no significant effect of gender on earning from poverty fund” is not rejected. Hence, it may be concluded that indicator earning from poverty fund of Income opportunities available for villagers is independent of gender and perception of male and female is at par for this indicator.

8.11 Interaction between Gender and Governmental Aids/Assistance (Unemployment Wage) Received

ONE WAY ANOVA of indicator ‘Governmental aids/assistance (unemployment wage) received’ of objective gender bias for income opportunities available for villagers living in vicinity of KaTPP is presented as below :

Table-13 : ANOVA : Governmental Aids/Assistance (Unemployment Wage) Received

| | Sum of Squares | Df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|---|------|
| Between Groups | 0.000 | 1 | 0.000 | — | — |
| Within Groups | 0.000 | 251 | 0.000 | | |
| Total | 0.000 | 252 | | | |

It can be observed from the above table that F value of interaction between the gender and Governmental aids/assistance (unemployment wage) received is negligible, hence insignificant. In the light of this the null hypothesis namely “There is no significant effect of gender on Governmental aids/assistance (unemployment wage) received” is not rejected. Hence, it may be concluded that indicator Governmental aids/assistance (unemployment wage) received of Income opportunities available for villagers is independent of gender and perception of male and female is at par for this indicator.

8.12 Interaction between Gender and In Kind Aids Received from the Government (Coal Etc)

ONE WAY ANOVA of indicator ‘In Kind Aids received from Government (coal etc)’ of objective gender bias for income opportunities available for villagers living in vicinity of KaTPP is presented as below :

Table-14 : ANOVA : In Kind Aids received from Government (Coal etc.)

| | Sum of Squares | Df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|---|------|
| Between Groups | 0.000 | 1 | 0.000 | — | — |
| Within Groups | 0.000 | 251 | 0.000 | | |
| Total | 0.000 | 252 | | | |

It can be observed from the above table-13 that F value of interaction between the gender and In kind aids received from Government (Coal etc.) is negligible, hence insignificant. In the light of this the null hypothesis namely “There is no significant effect of gender on In kind aids received from Government (Coal etc.)” is not rejected. Hence, it may be concluded that indicator In kind aids received from Government (Coal etc.) of Income opportunities available for villagers is independent of gender and perception of male and female is at par for this indicator.

8.13 Interaction between Gender and Aids/Assistance received from NGOs

ONE WAY ANOVA of indicator ‘Aids/Assistance received from NGOs’ of objective gender bias for income opportunities available for villagers living in vicinity of KaTPP is presented as below :

Table-15 : ANOVA: Aids/Assistance received from NGOs

| | Sum of Squares | Df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|---|------|
| Between Groups | 0.000 | 1 | 0.000 | — | — |
| Within Groups | 0.000 | 251 | 0.000 | | |
| Total | 0.000 | 252 | | | |

It can be observed from the above table that F value of interaction between the gender and aids/assistance received from NGOs is negligible, hence insignificant. In the light of this the null hypothesis namely “There is no significant effect of gender on aids/assistance received from NGOs” is not rejected. Hence, it may be concluded that indicator aids/assistance received from NGOs of Income opportunities available for villagers is independent of gender and perception of male and female is at par for this indicator.

8.14 Interaction between Gender and Earning from Allowance for Elderly

ONE WAY ANOVA of indicator ‘Earning from allowance for elderly’ of objective gender bias for income opportunities available for villagers living in vicinity of KaTPP is presented as below :

Table-16 : ANOVA : Earning from Allowance for Elderly

| | Sum of Squares | Df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|-------|-------|
| Between Groups | 0.041 | 1 | 0.041 | 0.219 | 0.640 |
| Within Groups | 46.679 | 251 | 0.186 | | |
| Total | 46.719 | 252 | | | |

It can be observed from the above table that F value of interaction between the gender and earning from allowance for elderly is 0.219 with degree of freedom 1, which is not significant. In the light of this the null hypothesis namely “There is

no significant effect of gender on earning from allowance for elderly” is not rejected. Hence, it may be concluded that indicator earning from allowance for elderly of Income opportunities available for villagers is independent of gender and perception of male and female is at par for this indicator.

8.15 Interaction between Gender and Earning from other sources

ONE WAY ANOVA of indicator ‘Earning from other sources’ of objective gender bias for income opportunities available for villagers living in vicinity of KaTPP is presented as below :

Table-17 : ANOVA : Earning from other Sources

| | Sum of Squares | Df | Mean Square | F | Sig. |
|----------------|----------------|-----|-------------|-------|-------|
| Between Groups | 0.215 | 1 | 0.215 | 0.669 | 0.414 |
| Within Groups | 80.773 | 251 | 0.322 | | |
| Total | 80.988 | 252 | | | |

It can be observed from the above table that F value of interaction between the gender and earning from other sources is 0.669 with degree of freedom 1, which is not significant. In the light of this the null hypothesis namely “There is no significant effect of gender on income from other sources” is not rejected. Hence, it may be concluded that indicator income from other sources of Income opportunities available for villagers is independent of gender and perception of male and female is at par for this indicator.

9. Conclusion and Suggestions

The study revealed that there is no biasing of gender for availing available income opportunities for villagers living in vicinity of Kalisindh Thermal Power Project. Thus, we conclude that Income opportunities available for villagers are independent of gender and perception of male and female is at par.

During survey it had been observed that after so many years of independence villages are still under developed. They don’t have awareness of many new facilities available for them. Their income is less to fulfil their basic needs even. NGOs can adopt these villages and may work out some plans for raising their income growth and henceforth their living standard. NGOs shall educate villagers about Government aids, allowances, subsidies and Government schemes. Traders can also avail the opportunity to expand their business and can generate employment opportunities for local villagers.

10. Limitations of the Study

Limitations observed during this study are mentioned as below :

1. The study is focused on villages located near to the Kalisindh Thermal Power Project. Therefore, findings cannot be the generalized. However few findings are common that may be generalized.
2. For collection of primary data convenience and judgmental sampling has been used; it has its own limitations.

References

- Barua, A., Davidson, L. F., Rama, D. V. & Thiruvadi, S., "CFO gender and accruals quality", *Accounting Horizons*, 24(1), 2010, 25-39.
- Booth, A. L. & Nolen, P., "Gender differences in risk behaviour : does nurture matter?", *The Economic Journal*, 122(558), 2012.
- Cadsby, C. B. & Maynes, E., "Gender, risk aversion, and the drawing power of equilibrium in an experimental corporate takeover game", *Journal of Economic Behavior & Organization*, 56(1), 2005, 39-59.
- Charness, G. & Gneezy, U., "Strong evidence for gender differences in risk taking", *Journal of Economic Behavior & Organization*, 83(1), 2012, 50-58.
- Dollar, D. & Kraay, A., *Growth is good for the poor*, World Bank, Washington, DC :, Mimeo, 2000.
- Dreze, J. & Sen, A., *Hunger and Public Action*, Oxford University Press on Demand, 1989.
- Dyreng, S. D., Hanlon, M. & Maydew, E. L., "The effects of executives on corporate tax avoidance", *The Accounting Review*, 85(4), 2010, 1163-1189.
- Francis, B., Hasan, I., Park, J. C. & Wu, Q., "Gender differences in financial reporting decision making: Evidence from accounting conservatism", *Contemporary Accounting Research*, 32(3), 2015, 1285-1318.
- Galor, O. and D. N. Weil, "The Gender Gap, Fertility, and Growth", *American Economic Review*, 86(2). 1996, 374-387.
- Ge, W., Matsumoto, D. & Zhang, J. L., "Do CFOs have style? An empirical investigation of the effect of individual CFOs on accounting practices", *Contemporary Accounting Research*, 28(4), 2011, 1141-1179.
- Huang, J. & Kisgen, D. J., "Gender and corporate finance: Are male executives overconfident relative to female executives", *Journal of Financial Economics*, 108(3), 2013, 822-839.
- Karra R. & Mishra P. N., "School Education in villages near Kalisindh Thermal Power Project (KaTPP), Jhalawar, Rajasthan", *IOSR Journal of Humanities and Social Science*, Ver. II, 22(2), 2017, 42-53.
- Karra R., Mishra P. N. & Jain P., "Parents' Satisfaction regarding Schooling near a Thermal Power Project - A Case Study of Kalisindh Thermal Power Project", *International Journal of Development Research*, 7(7), 2017, 13727-13731.
- Karra R., Mishra P. N. & Jain P., "Income sources of villagers' in the vicinity of Kalisindh Thermal Power Project (KaTPP), Jhalawar, Rajasthan", *International Journal of Humanities and Social Science Research*, 3(7), 2017, 01-10.

- Karra R., Mishra P. N. & Jain P., “Effect of Education on New Business Opportunities - A Study of Kalisindh Thermal Power Project”, *International Journal of Academic Research and Development*, 3(1), 2018, 420-424.
- Klasen, S., “Low schooling for girls, slower growth for all? Cross-country evidence on the effect of gender inequality in education on economic development”, *The World Bank Economic Review*, 16(3), 2002, 345-373.
- Knowles, S., Lorgelly, P. K. & Owen, P. D., “Are educational gender gaps a brake on economic development? Some cross-country empirical evidence”, *Oxford Economic Papers*, 54(1), 2002, 118-149.
- Lagerlöf, N., *Gender Inequality, Fertility, and Growth*, Australia : University of Sydney, Department of Economics, 1999. .
- Levi, M. D., Li, K. & Zhang, F., “Mergers and acquisitions : The role of gender”, Working Paper, University of British Columbia, 2008.
- Mohan, N. J. & Chen, C. R., “Are IPOs priced differently based upon gender?”, *The Journal of Behavioural Finance*, 5(1), 2004, 57-65.
- Peni, E. & Vähämaa, S., “Female executives and earnings management”, *Managerial Finance*, 36(7), 2010, 629-645.
- Pritchett, L. & Summers, L. H., “Wealthier is healthier”, *Journal of Human resources*, 1996, 841-868.
- Ravallion, M., “Growth, inequality and poverty: looking beyond averages”, *World Development*, 29(11), 2001, 1803-1815.
- Robb, A. M. & Watson, J., “Gender differences in firm performance: Evidence from new ventures in the United States”, *Journal of Business Venturing*, 27(5), 2012, 544-558.
- Seguino, S., “Gender inequality and economic growth : A cross-country analysis”, *World Development*, 28(7), 2000, 1211-1230.
- Skalpe, O., “The CEO gender pay gap in the tourism industry-Evidence from Norway”, *Tourism Management*, 28(3), 2007, 845-853.
- World Bank, *World Development Report 2000/01 : Attacking Poverty*, New York : Oxford University Press, 2000. ★

Impact of Need Based Training on Production Workforce of Ludhiana Knitwear Industry

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Training and development programs are the basic structural and functional foundations for the development of employees in any industry. In today's competitive business, training is the most important tool to improve workers' skills, knowledge and their attitude towards work. The purpose of the current study was to find out the need of the respondents for training to improve their skill sets, impart training on identified gap areas and evaluate the effect of training on employee's job performance and understanding of the work. The data was collected from 375 respondents in production department selected from twenty five knitwear industries of Ludhiana. The result shows that the training was very effective and 70% respondents were satisfied with the training content in meeting their specific needs. More than half of the respondents showed increased motivation to work and 70-90% of them reported that there is enhancement in their existing skill sets. Demonstration was chosen as the most liked training method used by the expert and more than 80% of the respondents demanded more training in the near future.

[Keywords : Training, Development, Employees, Skills, Knowledge, Abilities]

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1. Introduction

Knitting Industry is playing a major role in the economy of India and Ludhiana contributes an immense proportion of the total knitwear products produced in our country. To improve the process of working, the industry needs knowledgeable, skillful and efficient employees who can adapt themselves to the changing needs to meet the global competition. Therefore, in today's scenario, training has become a mandatory tool to survive for the hard working employees. Training is the nerve that suffices the need of the fluent and smooth functioning of work and helps in enhancing the quality of work life of employees and organizational development. The main purpose of training can be summarized as essential for learning new skills and up gradation of the existing ones, increased motivation to work and work simplification. (Robert, 2004)

Training and development refers to the practice of providing training, workshop, coaching, mentoring or other learning opportunities to the employees to inspire, challenge and motivate them to perform the functions of their position to the best of their ability. It is critical in the organization in this era of competition due to the fact that organization need to survive, grow and develop. (Pandey, 2007). The National Policy on Skill Development aims to train about 104.62 million people afresh and additional 460 million are to be re-skilled, up-skilled and skilled by 2022. (Sanghi and Srija, 2015). Keeping in mind the importance of training, need based training sessions were organized in twenty five purposively selected knitwear industries of Ludhiana and their impact was studied.

2. Objectives

The objectives of this study were two-fold :

1. To impart need based training in selected knitwear industries of Ludhiana.
2. To study the impact of training.

3. Methodology

3-1 Selection of Industries and Respondents

Twenty five knitwear industries (large, medium and small) of Ludhiana city were purposively selected and a total of 375 respondents (15 from each industry) were selected on the basis of the recommendation of the respective Production Managers and their permanent job profile in the industry.

3-2 Identification of Gap Areas in Skill Sets of the Respondents

Preliminary visits were made in the industries to develop rapport and find out the gap areas in the existing skill sets of production workforce.

3-3 Conducting Need Based Training Sessions

Need based training sessions were conducted for selected respondents.

3-4 Construction of an Interview Schedule

As regards the tool used to find out the impact of training on selected respondents, a detailed interview schedule was constructed and used in this study.

3-5 Studying the Impact of Training

The impact of training was studied by the responses of selected respondents who were administered the interview schedule.

4. Results and Discussion

4-1 Need Based Training

The visits made to various knitwear industries revealed the following gap areas in the skills of selected respondents from the Production Department :

- ▶▶ Self understanding of work
- ▶▶ Ability to work on advanced machines
- ▶▶ Inability to express themselves
- ▶▶ Achieving quality in stipulated time
- ▶▶ Motivation to work in an organized manner
- ▶▶ Ergonomics
- ▶▶ Cleanliness of the workstation
- ▶▶ Adherence to safety norms

Based on the identified gap areas, need based training sessions were organized in each industry and their impact was studied.

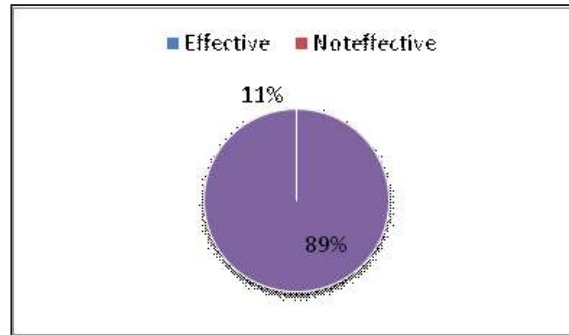


Training Sessions in Knitwear Industries of Ludhiana

4-2 Impact of Training

The impact of training was studied after few days of the training session in each industry so that the workers could incorporate the new and suggested things in their regular working.

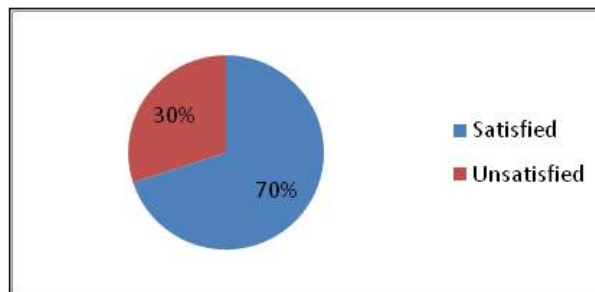
4.2.1 Effectiveness of the Training Session



Distribution of Workers according to the Effectiveness of the Training Session

The collected data shows that majority of the respondents found training session to be effective whereas a small percentage of 11% respondents reported it to be non effective majorly because of its short duration and lack of proper seating arrangement in the industry to attend the lecture.

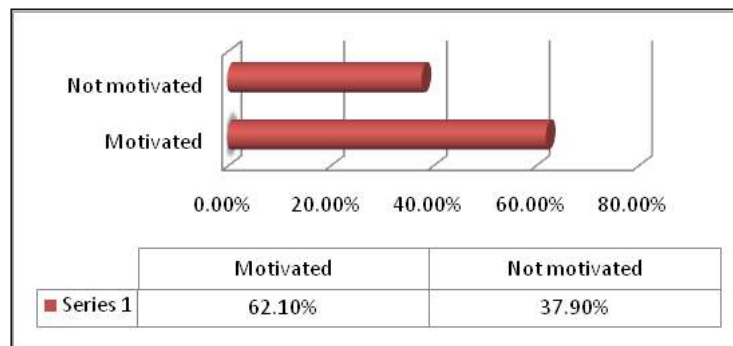
4.2.2 Satisfaction Level of the Workers



Distribution of the Workers according to their Satisfaction Level

The data revealed that majority of the respondents were satisfied that the training targeted at their specific problems and they were able to learn a lot in the training session. Thirty percent respondents however thought it to be general and wanted more time to understand their specific problems.

4.2.3 Motivation Level of Workers after the Training Program

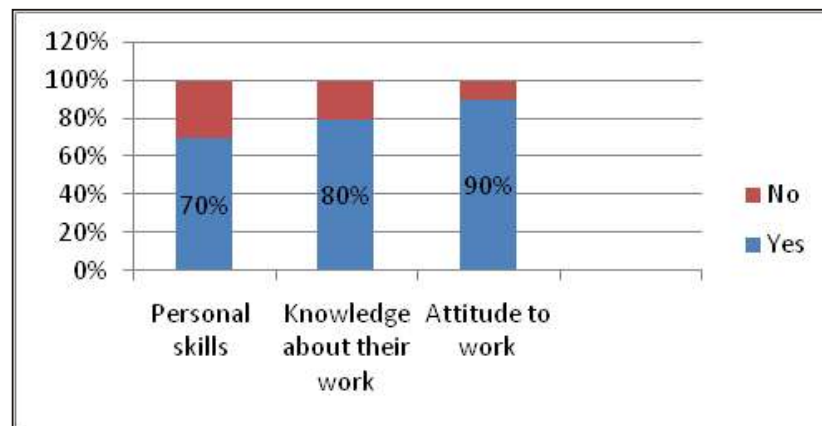


Distribution of Workers according to their Motivation Level

The data showed that more than half of the respondents were motivated to work in an organized manner in the near future for quality compliance and to meet their deadlines in work schedule. However, 38% respondents felt that they were already highly motivated for their work and so there has been no change in their motivation level after the training session.

4.2.4 Enhancement in Specific Skills of the Workers

The data showed that 70% respondents were able to enhance their specific personal skills like abiding to instructions, daily reporting, expressing their problems etc. According to 80% respondents, great enhancement was seen in their knowledge about machine maintenance, knowhow of advanced machines, ergonomics, safety symbols etc. and 90% respondents felt that they have developed a positive outlook for their work after the training which has improved their overall working attitude.



Distribution of Workers according to their Enhancement in Specific Skills

4.2.5 Liking for Method of Instruction used by the Expert in the Training

Four methods of instructions were used in the training program and the respondents were asked to rank the most liked method for their learning. Their responses are shown in the following table :

Table-1 : Methods of Instructions used in the Training Program n=375

| Methods | Score | Rank | Weighted mean score |
|---------------|-------|------|---------------------|
| Lecture | 40 | IV | 10.7 |
| Discussion | 100 | II | 26.7 |
| Demonstration | 170 | I | 45.3 |
| Presentation | 65 | III | 17.3 |

The data revealed that most of the respondents liked the methods of instruction used in the training session and they were able to learn a lot through

demonstrations (Rank I) with weighted mean score 45.3 and discussions (Rank II) with weighted mean score of 26.7. According to them, lecture and presentation were least preferred methods with weighted mean score 10.7 and 17.3 respectively.

4.2.6 Demand for More Training



Distribution of respondents according to their demand for more training

The data revealed that more than 80% respondents were so satisfied with the training that they demanded for more of such sessions in the future. They suggested that every employee should be given training after a certain period of time for their growth. They also expressed that for new comers in their respective industry, attending such training sessions should be made mandatory.

5. Conclusion

Ludhiana is known for its knitwear production but lack of trained workforce is one of the major problems faced by the Ludhiana knitwear industry. Thus, need based training is an important step in developing 'human resource' and 'improving job knowledge and skills' but it can only be implemented if the existing skill sets and the gaps are known to the promoters of the industries. The present study made an effort in identifying skill based needs where training was required by production workforce in the knitwear industries of Ludhiana and conducting the training sessions. The analysis of data on impact of training concludes that the effort was successful and majority of the respondents were able to meet their specific training needs and were highly satisfied from the content and method of instruction used in the training. They have also shown interest in attending and learning from such trainings in the future. Thus, it is recommended that the industry promoters should take keen interest in organizing such training sessions on regular basis for general and need based growth of the required skills of their workers.

Acknowledgement

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References

- International Labour Organization (2008) *Skills for Improved Productivity, Employment Growth and Development*. <https://dfat.gov.au/ilo-assessment> (accessed on 12.5.18)
- National Skill Development and Entrepreneurship Development Policy India 2015*. pib. nic.in (accessed on 10.6.18)
- NITI Aayog (2015) *Report of the Sub-Group of Chief Minister on Skill Development* niti.gov.in (accessed on 15.6.18)
- Pandey, S., “Improvising skill development and employability potential through higher education, research and innovations in India”, *Int J Innov Res in Sc, Engg, Tech*, 2007, 5(1), 680-88.
- Robert, L. M., *Human Resource Management*, 10th Ed. Thompson South Western, 2004.
- Sanghi S and Srija A (2015) Skill Development & Productivity of Workforce. niti.gov.in (accessed on 15.6.18) ★

Study of Role Stress among Primary School Teachers of East Delhi

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and Narendra Kumar*****

In the present study, the researchers attempt to assess the Role Stress of primary school teachers of East Delhi. For the present study, 200 primary school teachers were randomly selected from various primary Schools of East Delhi. Role/Occupational Stress Questionnaire. By Samuel H. Osipow and Arnold R. Spokane (1987) was used. For data analysis, Mean, S.D., and t-test were used. Results show that primary school teachers were found to have varied stress on different dimensions of role stress.

[**Keywords** : Role stress, Teaching and learning, Primary school teachers, Disorders]

1. Introduction

The modern pattern of is said to be a world of achievements for both teachers and learners. It is also called a world of stress. Every individual finds stress everywhere in his daily life, whether it is within the family, student life, school life, professional life, any enterprise or any other social or economic activity. The concept of role-stress is one of the significant and interactive concepts ever developed in the social and biochemical sciences. It's potential as a prime intellectual tool for not only understanding but also explaining the individual

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behavior and collective human behavior and disorders. Stress can be defined as a state that occurs when people are faced with demands from the environment that require them to change in some way, Stress arousal is an automatic response. Stress is a state of imbalance between when the external demands exceed the resources of the individual. Teaching is more stressful today because teachers have many deadlines to meet as well as more responsibilities to shoulder. These responsibilities include lesson planning, teaching, accountability for student performance, classroom management and discipline, supervisory role, and extracurricular activity conducting and monitoring.

A lot of research work has been done on the teacher's occupational/role stress during the last two decades (Chakrabarty, A. 1990; Davis, D. & Grace, E.D., 1992, Kaur K., 2000, Greenglass, E. 2002; Cooper, C. L., 2007, Christine C. A., 2012, Reddy G. L. and Anuradha R. 2013). Pitchers R.T. and Soden R. (1998) found the role overload as significant stressors. They studied the levels of strain, organizational roles and stress in Australian and Scottish Vocational and further education lectures. Kousar et al. (2004) conducted a study on elementary school principals. The study revealed that female school heads take more stress as compared to male heads. Burchiellie R. and Bartram T. (2006) found high level of stress among the teachers at the school. Ramchandran R. and Rajendran R.(2007) found that the personal variables; sex, age, educational levels, years of experience and types of schools, are major sources of stress related to the teaching profession. Nagra & Arora (2013) found that teacher educators experienced moderate level of occupational stress & significant differences were indicated regarding occupational stress among teacher educators in relation to gender and marital status. No research study was found on the primary teachers of East Delhi. Therefore, the researchers attempted to observe the phenomena of role stress among primary school teachers of East Delhi.

2. Research Methodology

2.1 Method

For the present study, Descriptive Survey method of research was used to accomplish the objectives of the study.

2.2 Population

Primary Teachers of Government and Private Schools of East Delhi were taken as the population in the present study.

2.3 Sample

For the present study, 200 primary teachers of Government and Private Schools of East Delhi were taken as sample of the study. For this purpose, simple random sampling technique was used at each stage. The detailed distribution of sample is presented in table-1 on next page.

Table-1 : Sampling Frame and Sample Size

| S. No. | Type of School | No. of Schools Selected Randomly | No. of Teachers Selected per school | Total No. of Teachers Selected |
|--------------|--------------------|----------------------------------|-------------------------------------|--------------------------------|
| 1. | Government Schools | 20 | 05 | 100 |
| 2. | Private Schools | 20 | 05 | 100 |
| Total | | 40 | | 200 |

2.4 Tool Used

For data collection in the present study, Role/Occupational Stress Questionnaire. By Samuel H. Osipow and Arnold R. Spokane (1987) was used. The role-stress questionnaire is a part of the occupational stress Inventory (OSI). It is a concise measure of three dimensions or domains of occupational stress, psychological strain and coping resources. Amongst all these three domains the occupational stress domain was measured by a set of six scales which are collectively called as the Occupational Role Questionnaire (ORQ).

Table-2 : Indices of Role Stress

| Variable | Sr. No. | Index | No. of Items |
|--------------|---------|----------------------|--------------|
| Role Stress | 1. | Role overload | 10 |
| | 2. | Role insufficiency | 10 |
| | 3. | Role ambiguity | 10 |
| | 4. | Role boundary | 10 |
| | 5. | Responsibility | 10 |
| | 6. | Physical Environment | 10 |
| Total | | | 60 |

3. Results and Discussion

To study the nature of total Role Stress and its all dimensions of total primary school teachers of East Delhi (N=200), mean and standard deviation (S.D.) were calculated. All statistical values were calculated with the help of Microsoft Excel. The trends of total Role Stress with all dimensions of total primary school teachers of East Delhi are presented in Table-3 on next page.

It is revealed from the table-3 that the mean value for total role stress of primary school teachers of East Delhi was found to be 152.845 while the maximum score may be 200. Hence, it may be interpreted that all the primary school teachers of East Delhi were found to have high level of role stress. When the mean values for its all dimensions Role overload, Role insufficiency, Role ambiguity, Role boundary, Responsibility, Physical environment were calculated, it was observed

that the mean values were 27.805, 25.750, 23.210, 25.970, 27.620, and 22.490 respectively. It indicates that primary school teachers of East Delhi were in stress mainly due to role overload, the second most causal factors for stress were found to be responsibility. The score for responsibility shows that the primary teachers have a great deal of responsibilities for activities and work, they perform. They also realize when there was a mistake on their part in their work performance. They are not comfortable to complete the job responsibilities assigned to them. The primary teachers were also found to be in stress moderately due to role insufficiency and role boundary. They were found to have no clarity about job and time management, confusion on the part of supervision, when assigned work and less ambitious about their job. Some of the teachers were not satisfied with the supervision. The least causal factor for stress among primary school teachers of government schools was observed to be physical environment. It indicates that primary school teachers of East Delhi are not in stress due to physical environment of the schools that includes interpersonal relationship between the teachers and the authorities of the school administration. Physical environment was not a big issue for primary school teachers of East Delhi.

Table-3 : Statistics Showing the Role Stress of Primary School Teachers

(N = 200)

| Dimensions of Role Stress | Mean | S.D. |
|----------------------------------|-------------|-------------|
| Role Overload | 27.805 | 5.091 |
| Role Insufficiency | 25.750 | 6.909 |
| Role Ambiguity | 23.210 | 7.152 |
| Role Boundary | 25.970 | 5.227 |
| Responsibility | 27.620 | 5.299 |
| Physical Environment | 22.490 | 6.703 |
| Total Role Stress | 152.845 | 19.865 |

4. Conclusions

The primary school teachers of East Delhi were found to have high level of role stress. Primary school teachers of East Delhi were found in stress mainly due to role overload, the second most causal factors for stress were found to be responsibility. The results reveal that the prescribed workloads to the primary teachers are somehow more than their expectation and capacity. The primary teachers were also found to be in stress moderately due to role insufficiency and role boundary. They were found to have no clarity about job and time management, confusion on the part of supervision, when assigned work and less ambitious about their job. The least causal factor for stress among primary school teachers of government schools was observed to be physical environment.

References

- Burchiellie, R. and Bartram T., "Like an iceberg floating alone : A case study of teacher stress at a victorian primary school", *Australian Journal of Education*, 2006, 50(3), 2006, 312-327.
- Chalmers, A., *Workload and Stress in New Zealand Universities : A Follow-up on the 1994 Study*, Wellington : New Zealand Council for Educational Research, 2004.
- Christine, C. A., "The Incidence and Types of Occupational Role Stress among University Research Administrators", *Research Management Review*, 19(1), 2012, 1-23.
- Cooper, C. L., "Stress in teaching: a study of occupational stress and its determinants among Italian school teachers", *Stress and Health*, 23(4), 2007, 231-241.
- Davis, D. & Grace, E. D., "Secondary school teachers coping resources and perceived symptoms and sources of job stress", *Dissertation Abstract International*, 54(3), 1992.
- Gillespie, N., Walsh, M., Winefield, A., Dua, J. and Stough, C., "Occupational stress in universities; staff perceptions of the causes, consequences and moderators of stress, Work and Stress", 15(1), 2001, 53-72.
- Greenglass, E., "Work stress, coping, and social support: implications for women's occupational well-being", D. Nelson and R. Burke (eds.), *Gender, Work Stress and Health*, Washington, D.C. : American Psychological Association, 2002.
- Kaur, K., *Occupational Stress of High and Higher Secondary School Teachers in Relation to Mental Health and Coping Resources*, Ph. D. Thesis, Panjab University, Chandigarh, 2000.
- Kousar, T. & Sohail, T., "Occupational Role Stress and Health related Quality of Life among Secondary School Teachers", *Journal of Arts and Social Sciences*, 1(1), 2004, 9-24.
- Nagra, V. & Arora, S., "Occupational Stress and Health Among Teacher Educators", *International Journal of Advanced Research in Management and Social Sciences*, 2(8), 2013, 1-13.
- Pithers, R. T. and Soden R., "Scottish and Australian Teachers Stress and Strain : A Comparative Study", *British Journal of Educational Psychology*, 68, 1998.
- Ramchandran, R. and Rajendran, R., "Perceived sources of stress among the teachers", *Journal of the Indian Academy of Applied Psychology*, 33(1), 2007, 133-136.
- Reddy G. L. and Anuradha R., "Occupational Stress of Higher Secondary Teachers Working in Vellore District", *International Journal of Educational Planning & Administration*, 3(1), 2013, 9-24. ★

ICT : A Deed for Sustainable Development Goals

S. Jindal* and L. Vatta**

The improvement of quality education for all is not the only SDG where ICT plays a major role. ICT has proved to play a fundamental role in the improvement of education, the battle against climate change and even the progress on gender equality, but it's also important to ensure sustainability by finding local solutions for the electronic waste. The present paper discusses an overview and role of ICTs in rural development and how India gears up to achieve SDG's through innovation of ICTs. It has been shown that India's national development goals and it's "sab ka saath, sab ka vikas" or "development with all, and for all", policy initiatives for inclusive development converge well with the SDGs, and India will play a leading in determining the success of the SDGs, globally.

[**Keywords** : Information, ICT, Sustainable development goals, 2030 agenda for SDGs]

1. Introduction

Information is the key to democracy and information empowerment is fundamental to a successful democracy. The advent of IT has changed the way people live, learn, work and relate. In India, majority of the people live in rural areas. The rural population is living in about 600,000 villages spread over 2.76 million km², across India with little or no infrastructure like roads, transport, power supply, clean drinking water, health care, education system, communication

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network etc. further pushing them to poverty. To achieve the development agenda in a harmonize manner seventeen SDG's had been formulated by the UN, to be achieved within one generation (all 2030). Similar goals were agreed to, by all the UN member states in 2000.

India being an agrarian society, agriculture plays a vital role in the economy. With the increasing rate of population, it would be difficult for India to keep pace with the rural development, until the government redefines its policies and strategies, deploy innovations of ICTs with active participation of the people. ICT's denote a wide range of services, applications and technologies, using various types of hardware and software, often running over telecom networks. The technologies range from old technologies such as radio and TV to new ones such as cellular mobile links, satellite links etc. It also comprise a various of internet based tools (The world wide web, online forums, e-publications) and non-internet services (direct modem to modem links, dial in bulletin board systems). ICT facilitate improvement in information management and dialogue between individuals, groups, communities etc. while technological innovations increase with the involvement of more hybrid advancements (tele and video conferencing, multitask devises, other wireless systems) and at the same time traditional devises also.

Advantages of using ICT for development:

1. It helps in analyzing present development status.
2. Increase approach and access among individual and government.
3. Technology helps in reduction of unemployment.
4. Improve communication.
5. Help to improves scope access.
6. Boosting medial access.
7. Secure society.
8. Cost less as compare to the competitive technologies.

2. Objective

The paper discusses an overview and role of ICTs in rural development and how India gears up to achieve SDG's through innovation of ICTs.

3. SDG's : Need for Today

Progress made during the MDG; s period has proven that, with sound strategies and targeted interventions, global action can work. India is poised to carry forward this momentum into the 2030 agenda for sustainable development, 'for transforming our world' and ensuring that the most vulnerable are not left behind. This agenda comprise 17 SDGs and 169 related targets which have been adopted and signs by the government of India in September 2015.

The SDG's and India's journey towards them can be summed up as follows :

3-1 SDG-1 : End poverty in all its forms everywhere

As per a report by World Bank (2016) one in every five is poor in India. 80% of total poor in India lives in villages and we have 25% and 14% poverty rate for villages and urban respectively. Various Government interventions namely Pradhan Mantri Jan Dhan Yojana, Skill India, Pradhan Mantri Fasal Bima Yojana, Make In India, Black Money Disclosure Window, Pradhan Mantri Awas Yojana, The Pradhan Mantri Gram Sadak Yojana (PMGSY) is running to compact properly.

3-2 SDG-2 : End hunger, achieve food security and improved nutrition and promote sustainable agriculture

A report on the Global Hunger Index that was released on October 12 became one of the most talked-about subjects on social media. The report suggested that India has slipped further in hunger index. India ranks 100 out of 119 countries on an index that weighs the abilities of countries to provide food security for their citizens.

Twenty one per cent of Indian children suffer from wasting, that is, have a weight lower than normal for their height. Only three other countries in the world have worse statistics for child wasting than India. Moreover, India's child wasting numbers have actually got worse since 1992, increasing from 20% to 21% in 2017, making it a laggard in South Asia. Hunger and undernourishment lead to severe problems. Children and youth in this state suffer from numerous nutritional deficiencies which adversely impact their overall health.

Minister of State (Independent) for Planning, Rao Inderjit Singh said in a written reply to Rajya Sabha that "the government of India accords high priority to the issue of hunger and malnutrition and is implementing several schemes to improve food situation in the country. The government allocates food grains at highly subsidized prices to states and union territories under the National Food Security Act, 2013, covering up to 75 per cent of population in rural and 50 per cent of population in urban areas.

Government is also implementing other welfare schemes like Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGA), National Health Mission (NHM), Mid Day Meal (MDM) scheme, Integrated Child Development Services Scheme (ICDS), Annapurna Scheme for senior citizens etc."

3-3 SDG-3 : Ensure healthy lives and promote well-being for all at all ages child health

The National Health policy, launched in March 2017 aspires to ensure that everyone has access to healthcare, especially the poorest. It emphasizes wellness

and preventive healthcare, good quality maternal and child care, as well as comprehensive primary healthcare with two-way referrals. It aims to make healthcare affordable, through free drugs, diagnostics and emergency services, while leveraging India's innovation and technology capacity. One significant element of the National Health Policy is that it proposes to raise public health expenditure to 2.5% of the GDP by 2025, as well as to cut family health expenditure by 25%, by 2025. The aim is to reach more than 90% full immunization coverage among children in the country by 2020. After three phases, 2.1 crore children and 55.9 lakh pregnant women have been vaccinated. It has also strengthened the health system by enabling access to health services, sometimes for the first time, in remote parts of the country.

3.4 SDG- 4 : Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

With the passing of the Right of Children to Free and Compulsory Education Act in 2009 (hereafter RTE), elementary education for every child between 6 and 14 became a Fundamental right in India. With this various schemes attempts to ensure the education for all. According to Mr. Javadekar (Honorable HRD minister, India) "Sustainable Development Goal 4 aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all". India recognized that accountability in financing of education was critical to achieve SDG4 and associated targets and called for accountability on the part of both the "development partners" and the "individual countries". The SDG4-Education 2030 agenda requires increased, well-targeted financing and effective and efficient utilization of allocated funds, he said India was investing nearly 4.5 per cent of the GDP on education, despite competing demands on resources. There has been a broad consensus that investment in education be gradually increased to reach a level of six per cent of the Gross Domestic Product (GDP), and efforts are being made to step up the outlay on education by facilitating substantial increase in both public and private sector investment in education.

3.5 SDG-5 : Achieve gender equality and empower all women and girls

Gender inequality in India refers to health, education, economic and political inequalities between men and women in India. Gender inequalities, and their social causes, impact India's sex ratio, women's health over their lifetimes, their educational attainment, and economic conditions. The Ministry of Women and Child Development is administering various schemes namely Swadhar and Short Stay Homes (to provide relief and rehabilitation to destitute women and women in distress), Working Women Hostels (for ensuring safe accommodation for working women away from their place of residence), Support to Training and Employment Program for Women {(STEP) to ensure sustainable employment and income generation for marginalized and asset-less rural and urban poor women},

Rashtriya Mahila Kosh {(RMK) to provide micro-finance services to bring about the socio-economic upliftment of poor women}, National Mission for Empowerment of Women {(NMEW) to strengthen the overall processes that promote all-round Development of Women}, Rajiv Gandhi National Creche Scheme for Children of Working Mothers {(including single mother) to provide day care facilities for running a crèche of 25 children in the age group 0-6 years from families having monthly income of less than Rs 12,000}, One Stop Centre (to provide integrated support and assistance to women affected by violence), Women Helpline (intended to provide 24 hours immediate and emergency response to women affected by violence), Sabla Scheme (for holistic development of adolescent girls in the age group of 11-18 years) for gender equality/socio-economic development/empowerment of women. In order to strengthen the process of gender budgeting the Ministry of Women and Child Development has been undertaking various capacity building measures for the officials of the State Governments by organizing training programs/workshops regularly. To improve employability a separate Ministry of Skill Development and entrepreneurship has been created. Social security to the workers including women in the unorganized sector was attempted to provide by Government through the enactment of Unorganized Workers' Social Security Act 2008.

The Maternity Benefit Act, 1961 and Indira Gandhi Matritva Sahyog Yojana (IGMSY) Scheme is being implemented to provide maternity benefit. The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 has been enacted, which covers all women, irrespective of their age or employment status and protect them against sexual harassment at all workplaces both in public and private sector, whether organized or unorganized.

3-6 SDG- 6 : Ensure availability and sustainable management of water and sanitation for all

A major fresh water has unfolded India. The crisis is the lack of access to safe water supply to millions of people as a result of inadequate water management and environmental degradation. This crisis is slowly undermining the economic and social prosperity of the country. The fresh water crisis is already evident in many parts of India, varying in scale and intensity at different times of the year. Many fresh water eco-systems are degrading. The fresh water crisis is not the result of natural factors, but has been caused by human actions.

The hot summer temperatures and the acute scarcity of water in most parts India lends future urgency to the situation to ,signaling a need to adopt a totally different approach in managing our natural general and water in particular, unlike other environmental, and problems end of pipe solutions can make an enormous different in case of water. For instance, if low cost end of pipe water purification systems are available to the poorest sections of the society, many of the diseases related to polluted water would eliminated. It is not enough to just

increase spending on the supply of safe drinking water and sanitation facilities. Simultaneously, we need to plug the leakage in our system, ensuring that the resources allocated for the sector are utilized honestly and efficiently. As the situation become more critical, it will lead to growing need to innovation and original including a reorientation of our science and technology programmes.

3-7 SDG- 7 : Ensure access to affordable, reliable, sustainable and modern energy for all

There is no development without fuelling the engine of growth. Energy is critical and people with no sustainable access to energy are deprived of the opportunity to become part of national and global progress. And yet, one billion people around the world live without access to energy. Almost three billion people, 41% of the world's population, do not have access to clean fuels and technologies for cooking. Goal 7 of the SDGs aims to correct this enormous imbalance by ensuring everyone has access to affordable, reliable, and modern energy services by the year 2030. To expand energy access, it is crucial to enhance energy efficiency and to invest in renewable energy. Asia has been the driver of progress in this area, expanding access at the twice the rate of demographic growth. 72% of the increase in energy consumption from modern renewable sources between 2010 and 2012 came from developing regions, including parts of Asia. Energy from renewable resources-wind, water, solar, biomass and geothermal energy-is inexhaustible and clean. Although the solution to energy's climate crises lies off-grid, renewable energy currently constitutes only 15% of the global energy mix. According to 2013-14 figures, the total installed capacity for electricity generation in India registered a compound annual growth rate of 7%. However, as of 2015, 237 million people in India do not have access to electricity. The government's National Solar Mission is playing an important role in the work towards renewable energy, and interventions in rural electrification and new ultra mega power projects are moving India towards achieving universal energy access.

3-8 SDG-8 : Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Nearly 2.2 billion people live below the US\$2 poverty line and poverty eradication is only possible through stable and well-paid jobs. Also 470 million jobs are needed globally for new entrants to the labour market between 2016 and 2030. Small and medium-sized enterprises that engage in industrial processing and manufacturing are the most critical for the early stages of industrialization and are typically the largest job creators. They make up over 90% of business worldwide and account for between 50-60% of employment. The unemployment rate in India is estimated to be approximately 5% at All India level (2013-14) and the labour force is set to grow by more than 8 million per year. 'No one left behind' is at the core of the sustainable development agenda for 2030 and if economic growth is to build a

fairer world, it must be inclusive. This is the idea behind Goal 8, which aims to sustain an economic growth rate of 7% for the least developed countries by 2030, and achieve full and productive employment for all men and women everywhere in the next 15 years. Nearly 2.2 billion people live below the USD 2 poverty line and that poverty eradication is only possible through stable and well-paid jobs. It is estimated that 470 million jobs will be needed globally for the new entrants to the labour market between 2016 and 2030.

3-9 SDG-9 : Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

A lot of investment is being made in transport like road, railway, shipping and aviation over the past few years. Capacity Addition Projects are being done, to elaborate, development of new ports. There is a thrust on air connectivity to Tier II and Tier III cities. Doubling farmer income is a goal which the nation is striving to achieve at this juncture. A research published in Economic and Political Weekly using NSSO data reveals that doubling income depends much more on animal husbanding, diversification to horticulture etc than just the crops. There is a thrust on transforming rural India, using various initiatives like rural road connectivity for every habitation by 2019, one crore houses for those who are in 0/1 or 2 kuccha rooms by 2019, 4 crore women in about 40 lakh self-help groups as part of the livelihood movement.

3-10 SDG-10 : Reduce inequality within and among countries

Inequalities are rising. In 2014, the richest 1% of the world's population held 48% of the world's wealth in 2014, while the bottom 80% of the people together hold only 6% of the global wealth. The imbalance is put into stark relief when one considers that only 80 individuals have as much wealth as the 3.5 billion people worldwide with the lowest incomes. To reduce inequality, policies should be universal in principle, paying attention to the needs of disadvantaged and marginalized populations. Inclusion has to be promoted actively, in social as well as political spheres, for all ages, sexes, races, religions and ethnicities to create conditions of equity within countries. To create a fairer international system globally, global financial markets will require improved regulation, and developing countries will have to have a greater voice in international decision making.

3-11 SDG-11 : Make cities and human settlements inclusive, safe, resilient and sustainable

By 2050, 70 % of the world's population will live in cities, making cities critical in achieving a sustainable future for the world. Businesses, together with governments at various levels, and civil society organizations and citizens are collectively engaged in pursuing ambitious objectives to make cities more competitive, safe, resource-efficient, resilient and inclusive. Cities seeking to

realize their sustainability objectives can benefit from engaging with business early in the planning and strategy development process, leveraging the capability of business to identify innovative and cost-effective solutions to complex, cross-cutting urban sustainability challenges.

3·12 SDG-12 : Ensure sustainable consumption and production patterns

Achieving economic growth and sustainable development requires that we urgently reduce our ecological footprint by changing the way we produce and consume goods and resources. Agriculture is the biggest user of water worldwide, and irrigation now claims close to 70 percent of all freshwater appropriated for human use. The efficient management of our shared natural resources, and the way we dispose of toxic waste and pollutants, are important targets to achieve this goal. Encouraging industries, businesses and consumers to recycle and reduce waste is equally important, as is supporting developing countries to move towards more sustainable patterns of consumption by 2030. A large share of the world population is still consuming far too little to meet even their basic needs. Halving per capita global food waste at the retailer and consumer levels is also important for creating more efficient production and supply chains. This can help with food security and shift us towards a more resource efficient economy.

Sustainable consumption and production is about promoting resource and energy efficiency, sustainable infrastructure, and providing access to basic services, green and decent jobs and a better quality of life for all. Its implementation helps to achieve overall development plans, reduce future economic, environmental and social costs, strengthen economic competitiveness and reduce poverty. It also requires a systemic approach and co-operation among actors operating in the supply chain, from producer to final consumer. It involves engaging consumers through awareness-raising and education on sustainable consumption and lifestyles, providing consumers with adequate information through standards and labelling and engagement in sustainable public procurement. This will involve a new global partnership between business, consumers, policy makers, researchers, scientists, retailers, the media, and development co-operation agencies.

3·13 SDG-13 : Take urgent action to combat climate change and its impacts

There has been a marked acceleration in global warming since the mid-20th century with an average temperature increase of 1°C between 1961 and 2016 (measures against the pre-industrial period which serves as a reference). The effects are clearly visible, one of the most remarkable being the sea level rise as the thermal expansion of water due to this increased warming causes this water to take up more and more of the ocean's surface. The melting of the ice caps also contributes to this sea level rise, and the gradual retreat of the summer Arctic sea ice is a further indication of global warming. India's investment in climate Change

appears to be ramping up domestically as well. Action plan on Climate Change listed 20 initiatives for securing environment. A major drive is under way nationwide to add 0.8 million hectares of forest per year, coupled with efforts to improve forest management, conservation and regeneration and to boost local capacity and job creation for some of India's poorest communities. These initiatives will help offset 11 percent of India's annual emissions, according to the ministry report. The solar Mission sets a target to install 20 gigawatts (GW) of solar capacity by 2020 and 200 GW by 2050. It is the most ambitious solar plant that any country has put forward so far. The Mission for Enhanced Energy Efficiency contains Initiatives designed to improve the efficiency for energy use across sectors. The Government has set the programme will include a series of mandated efficiency standards for vehicles, buildings, and appliances; a market - based mechanism to trade energy-efficiency; certificates and other mechanisms to finance efficiency efforts, such as tax exemptions and insurance funds.

3.14 SDG-14 : Conserve and sustainably use the oceans, seas and marine resources for sustainable development

The world's oceans their temperature, chemistry, currents and life - drive global systems that make the Earth habitable for humankind. How we manage this vital resource is essential for humanity as a whole, and to counter balance the effects of climate change. Over three billion people depend on marine and coastal biodiversity for their livelihoods. However, today we are seeing 30 percent of the world's fish stocks over-exploited, well below a level at which they can produce sustainable yields. Oceans also absorb about 30 percent of the carbon dioxide produced by humans, and we are seeing a 26 percent rise in ocean acidification since the beginning of the industrial revolution. Marine pollution, an overwhelming majority of which comes from land-based sources, is reaching alarming levels, with an average of 13,000 pieces of plastic litter to be found on every square kilometer of ocean.

In India several strategies have been put in place for realizing the Blue Revolution in the country. These include strengthening marine research, developing an eco-friendly marine industrial and technology base as well as implementing the National Fisheries Action Plan. Significant progress has been made with respect to preservation and management of the marine ecosystem. For instance, the Coastal Ocean Monitoring and Prediction System tracks the levels of marine pollution along the coastline. Additionally, the Online Oil Spill Advisory System enhances the effectiveness of the national response to marine oil spills. India is also implementing the revised National Oil Spill Disaster Contingency Plan. Further, the Sagarmala programme is focused on improving port connectivity, port-linked industrialization and coastal community development. Under this initiative, support is also provided for the development of deep sea fishing vessels and fish processing centres

3-15 SDG-15 : Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss

Human life depends on the earth as much as the ocean for our sustenance and livelihood. Plant life provides 80 percent of our human diet, and we rely on agriculture as an important economic resource and means of development. Forests account for 30 percent of the Earth's surface, providing vital habitats for millions of species and important sources for clean air and water; as well as being crucial for combating climate change.

Today we are seeing unprecedented land degradation, and the loss of arable land at 30 to 35 times the historical rate. Drought and desertification is also on the rise each year, amounting to the loss of 12 million hectares and affects poor communities globally. Of the 8,300 animal breeds known, 8 percent are extinct and 22 percent are at risk of extinction.

The Sustainable Development Goals aim to conserve and restore the use of terrestrial ecosystems such as forests, wetlands, drylands and mountains by 2020. Promoting the sustainable management of forests and halting deforestations is also vital to mitigating the impact of climate change. Urgent action must be taken to reduce the loss of natural habitats and biodiversity which are part of our common heritage.

Protected and restored ecosystems and the biodiversity they support can help mitigate climate change and provide increased resilience in the face of increased human pressures and mounting disasters. Healthy ecosystems also produce multiple benefits for all communities: clean air, water, food, raw materials and medicines, to name a few. In 2014, 15.2 per cent of the world's terrestrial and freshwater environments were covered by protected areas, which are recognized, dedicated and managed to achieve the long-term conservation of nature. A fundamental measure of their efficacy is the extent to which they include places that contribute significantly to the maintenance of global biodiversity, such as key biodiversity areas (KBAs). Globally, the percentage of terrestrial, inland freshwater and mountain KBAs covered by protected areas has increased from 16.5 per cent to 19.3 per cent, 13.8 per cent to 16.6 per cent, and 18.1 per cent to 20.1 per cent, respectively, from 2000 to 2016. Safeguarding KBAs around the globe in all three ecosystems is critically important for maintaining genetic, species, and ecosystem diversity, and in turn the benefits they provide to people

3-16 SDG-16 : Promote peaceful inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

In India, the judiciary is overburdened due to the large number of pending cases, though the caseload has declined slightly - from 41.5 lakh in 2014 to 38.5

lakh in 2015. India has prioritised the strengthening of justice through government initiatives including Pragati Platform, a public grievance redressal system, and the Development of Infrastructure Facilities for the Judiciary including Gram Nyayalays for villages. Targets of which are :

- ▶ Significantly reduce all forms of violence and related death rates everywhere.
- ▶ End abuse, exploitation, trafficking and all forms of violence against and torture of children.
- ▶ Promote the rule of law at the national and international levels and ensure equal access to justice for all.
- ▶ By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organised crime.
- ▶ Substantially reduce corruption and bribery in all their forms.
- ▶ Develop effective, accountable and transparent institutions at all levels.
- ▶ Ensure responsive, inclusive, participatory and representative decision-making at all levels.
- ▶ Broaden and strengthen the participation of developing countries in the institutions of global governance.
- ▶ By 2030, provide legal identity for all, including birth registration.
- ▶ Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements.
- ▶ Strengthen relevant national institutions, including through international co-operation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime.
- ▶ Promote and enforce non-discriminatory laws and policies for sustainable development.

3·17 SDG-17 : Strengthen the means of implementation and revitalize the global partnership for sustainable development

Urgent action is needed to mobilize, redirect and unlock the transformative power of trillions of dollars of private resources to deliver on sustainable development objectives. Long-term investments, including foreign direct investment, are needed in critical sectors, especially in developing countries. These include sustainable energy, infrastructure and transport, as well as information and communications technologies. The public sector will need to set a clear direction. Review and monitoring frameworks, regulations and incentive structures that enable such investments must be retooled to attract investments and reinforce sustainable development. National oversight mechanisms such as supreme audit institutions and oversight functions by legislatures should be strengthened. The Government of India is an important part of this new global partnership, and it has been strengthened by the country's efforts to build

networks within the region and with the world. South-South co-operation has been a crucial part of this, as is India's membership and leadership in institutions like the Shanghai Cooperation Organization, BRICS and its New Development Bank, and the South Asian Association for Regional Cooperation, as well as with UN agencies and programmes around the world

4. Role of ICT to Achieve Agenda 2030

- ▶▶ ICT i.e. information, communication and technology is the backbone of today's world. It has paved the way for the attainment of a developing country like India.
- ▶▶ It is fighting with hunger and poverty, has tried to bring about farmers and scientists on a common platform. Weather forecast can help to reduce chances of crop damage. Kisan Seva Kendra helps in solving problems related to Agriculture, thus increasing Agriculture production.
- ▶▶ Health for all can be witnessed by policy formulation and their implementation. This requires collection of a large amount of data, which is feasible only through ICT. Emergency can be tackled through video conferencing and medical transcription.
- ▶▶ ICT connects teachers and students to audio-video learning resources and information related to their curriculums. E-learning helps to bridge the gap between teachers and students. It also promotes distance learning.
- ▶▶ ICT reduce gender inequality by increasing women's access to health nutrition, education, training employment and even political participation particularly for those who face social isolation.
- ▶▶ ICT can helps green energy by sustainably managing like smart buildings, intelligent transport systems, new efficiencies in energy consumption and growth and decent work, ICT skills are so important that without digital literacy one cannot even find job listing and make applications.
- ▶▶ ICT's is also generating new job opportunities in social media and internet (Such as coding, data entry, tagging, blogging, website designing etc).
- ▶▶ ICT is increasingly acting as a powerful aid in electoral processes all over the world.
- ▶▶ It is not being claimed here that ICT could important SDG's on its own. In a country like India, where resources are a constraint it is necessary that the basic facilities for communication should be provided. Basic literacy skills must be strengthened, which will facilitate e-learning.
- ▶▶ Since independence, we have pursued the dream of eliminating poverty from India. We have chosen the path of removing the poverty by empowering the poor. We have placed priority on education and skill development. Our attack on poverty includes expanded conventional schemes of development, direct

transfer of benefits, funds to the unbanked insurance within the reach of all and pension for every one's sunset years.

5. Conclusion

The Sustainable Development Goals form a cohesive and integrated package of global aspirations the world commits to achieving by 2030. Building on the accomplishments of their predecessors the MDGs, the SDGs address the most pressing global challenges of our time, calling upon collaborative partnerships across and between countries to balance the three dimensions of sustainable development-economic growth, environmental sustainability, and social inclusion.

The government of India is strongly committed to the 2030 Agenda, including the SDGs, as evidenced by the statements of the Prime Minister and other senior Ministers at national and international meetings. India's national development goals and its "sab ka saath, sab ka vikas" or "development with all, and for all", policy initiatives for inclusive development converge well with the SDGs, and India will play a leading in determining the success of the SDGs, globally. As Prime Minister Narendra Modi noted, "these goals reflect our evolving understanding of the social, economic and environmental linkages that define our lives."

References

- [//economictimes.indiatimes.com/articleshow/55542022.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst](http://economictimes.indiatimes.com/articleshow/55542022.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst)
- Aijaz, R. (2017), Preventing hunger and malnutrition in India, <http://www.orfonline.org/research/preventing-hunger-and-malnutrition-in-india/>
- energywall.in/energy-crisis-in-india/
- hdr.undp.org/en/content/gender-inequality-index-gii
- <http://pib.nic.in/newsite/printRelease.aspx?relid=162046> cited on 21-2-2018
- <http://in.one.un.org/page/sustainable-development-goals/sdg-16/>
- <http://in.one.un.org/page/sustainable-development-goals/sdg-17/>
- <http://in.one.un.org/page/sustainable-development-goals/sdg-12/>
- http://niti.gov.in/writereaddata/files/Report_SDG-9.pdf
- <http://pib.nic.in/newsite/PrintRelease.aspx?relid=162046> cited on 21-2-2018
- <https://scroll.in/article/854073/worse-than-iraq-bangladesh-and-even-north-korea-these-charts-show-how-hunger-haunts-india>
- <http://www.in.undp.org/content/india/en/home/post-2015/sdg-overview/goal-14.html>
- <http://www.in.undp.org/content/india/en/home/post-2015/sdg-overview/goal-15.html>
- <https://counterview.org/2017/07/03/ensure-inclusive-and-equitable-quality-education-and-promote-lifelong-learning-opportunities-for-all/>
- <https://economictimes.indiatimes.com › News › Politics and Nation>
- <https://economictimes.indiatimes.com/news/politics-and-nation/implementing-multiple-schemes-to-address-hunger-and-malnutrition-government/articleshow/55542022.cms>

https://en.wikipedia.org/wiki/Gender_inequality_in_India

<https://group.bnpparibas › ... › Climate change: what is the situation today?>

<https://unstats.un.org/sdgs/report/2016/goal-15/>

<https://sustainabledevelopment.un.org/memberstates/india>

<https://unstats.un.org/sdgs/report/2017/goal-15/>

<https://www.financialexpress.com/india-news/more-funding-needed-from-oecd-to-achieve-sdg4-goals-prakash-javadekar/918322/?/>

<https://www.munplanet.com/articles/sustainable-development-goal-11-sustainable-cities-and-communities/how-to-make-cities-and-human-settlements-inclusive-safe-resilient-and-sustainable>

Mishra, C. K. (02017). Invest in children's health to secure India's future well-being.

<https://www.hindustantimes.com/opinion/invest-in-children-s-health-to-secure-india-s-future-well-being/story-aZjXkQ55Wi87IxeKZJ7GZO.html>

pib.nic.in/newsite/PrintRelease.aspx?relid=132945

planningcommission.gov.in/reports/genrep/bkpap2020/32_bg2020

PTI (2017). More funding needed from OECD to achieve SDG4 goals: Prakash Javadekar

Rai, A., Aparajita and Singh, A. (2017) Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

www.socialwatch.org/taxonomy/term/738

www.yourarticlelibrary.com/.../role-of-natural-resources-in-economic-development/3... ★

Health Hazards of Ambient Air Pollution during Infancy and Childhood : An Overview

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Ambient air pollution is now recognized as an important problem affecting human health both nationally and worldwide. As revealed by the National Ambient Air Quality Monitoring Programme of Central Pollution Control Board, the level of the major air pollutants; particulate matter (PM), carbon monoxide, sulphur dioxide and nitrogen dioxide is continuously on rise in India due to an increase in emissions from industrial establishments, automobiles, domestic cooking and non-point sources like open refuse burning, unpaved roads, construction and building demolition activities. Many epidemiological studies have shown link between air pollution and health hazards like respiratory tract illness, asthma exacerbations and cardiovascular diseases. The studies have proved that infants and children are more vulnerable to the adverse effects of air pollution than are adults. In addition to the physical health problems, air pollution has also been found to affect children's intellectual functioning, behavior and emotional states in certain studies of India and abroad. Exposure to lead and polychlorinated biphenyls (PCBs), two major persistent and biocumulative air toxins, have been found to be associated with behaviours similar to those of developmental disorders like autism and attention deficit hyperactivity disorder (ADHD), functional abnormalities, poor school performance and learning disabilities in children. However, there is need for greater scientific understanding of the spectrum of health effects of air pollution, especially in India.

[Keywords : Ambient air pollution, Health, Infants, Children]

1. Introduction

Rapid deterioration of the environment is becoming a serious cause of concern for the health of humans all over the world. Day to day increase in population in the

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cities, intense anthropogenic activities are making the air we breathe more and more toxic. Industrial emissions, increasing number of vehicles, badly maintained roads, burning of waste in open and use of generators due to power cut-offs are the main sources of air pollutants in India. The polluted air of cities is posing serious threats to the health of the people residing in the near vicinity of industries, roads and commercial hubs. As per the 2016 Environmental Performance Index, more than 3.5 billion people, i.e., about half of the world's population, are exposed to unsafe air quality which also includes 75% of India's population. However, Indian air quality standard limits the safe exposure to particulate matter (PM_{2.5}) up to 40 µg/m³ and a recent study reveals that 50% population living in 45% districts of India is exposed at PM_{2.5} concentration beyond 40 µg/m³ (Chaudhary, S. and Dey, S., 2016). According to Ambient Air Pollution Database, WHO (2016), India has 13 cities in worlds top 20 most polluted cities with Delhi leading the pack along with Patna, Gwalior, and Raipur respectively. Out of 1215 most polluted cities recorded, 133 were Indian with 31 in top 100 most polluted cities.

A large number of observational epidemiological studies of disease occurrence in the human populations, in-vitro and in-vivo studies of animals and humans have found association between the rising ambient air pollution and increased respiratory mucosal symptoms, exacerbation of asthma, chronic obstructive pulmonary disease (COPD) as well as cardiovascular diseases and mortality (World Health Organization, 2003 and Health Effect Institute, 2002).

Recent studies have proved that people exposed to toxic air pollutants at sufficient concentrations and durations may also have an increased chance of damage to the immune system, neurological, reproductive (e.g., reduced fertility) and developmental problems (USEPA, 2001). Infants and children are found to be one of the most susceptible groups towards the health hazards of air pollution. Air pollution has been linked to diseases and infections that kill around six lakhs children under five years of age per year (Rees, N., 2016). A study even shows that about 2.2 million school children in Delhi are growing up with irreversible lung damage which they will never recover (Ghosal, A & Chatterjee, P., 2015). The number of premature deaths due to outdoor air pollution is projected to increase from 3 million people globally in 2010 to a global total of 6 to 9 million people in 2060 (OECD). Total welfare losses due to air pollution in India amounted to more than 500 billion US\$ (~8.5% of country's GDP) in the year 2013 (381% increase from 1990) (Jain, D., 2016).

In the present paper, various air pollutants and their toxic effects on human body are being discussed. Various researches conducted to study the effects of air pollution on physical and mental health in India and abroad have been summarized. In the end certain suggestions for future researches in this direction are given. Such scientific studies on health effects of children may prove to be of great assistance to policy makers and health workers in making effective air pollution policies to ensure protection of infants and children's health.

2. Toxic Air Pollutants and their Sources

Toxic air pollutants also known as hazardous air pollutants (HAPs) are those pollutants that are known or suspected to cause cancer or other serious health effects such as reproductive effects or birth defects or adverse environmental effects. United States Environmental Protection Agency (USEPA, 2000) has listed about 188 pollutants referred to as HAP. Particulate Matter (PM), SO₂, NO₂, benzene, volatile organic compounds (VOCs), ozone, lead are the major air pollutants measured by the Central Pollution Control Board (CPCB) under the National Ambient Air Quality Monitoring (NAAQM) programme in our country. These air pollutants are released mainly from combustion processes especially of diesel-powered engines, power generation, wood burning, crushing, grinding operations and other industrial activities (Table-1). Out of these air pollutants, particulate matter; inhalable and respirable particles of diameter less than 2.5 micron (PM_{2.5}) and of diameter less than 10 microns (PM₁₀) are considered to be the most hazardous for human health. They are a complex mixture of dry solid fragments, solid core with liquid coatings and small droplets of liquid. These tiny particles vary greatly in shape, size and chemical composition. They may constitute black carbon, sulphates, nitrates, minerals, dust etc.. Particulates are highly carcinogenic and have been classified in Group I Carcinogens because of their ability to penetrate deep into the lungs and bloodstreams (IARC).

The type of pollutants emitted in the air may vary from place to place depending on the sources and meteorological parameters like wind speed, wind direction, rainfall, relative humidity, temperature, barometric pressure etc. Some pollutants remain airborne or react in the atmosphere to produce other harmful substances. Ground level ozone is an example of a secondary pollutant formed by chemical reaction of volatile organic compounds and nitrogen oxides in the presence of sunlight. Other air pollutants deposit into and contaminate land and water. Children can be exposed to toxic air pollutants through contaminated air, water, soil, and food.

3. Entry of the Pollutants into the Human Body

Toxic air pollutants enter the body mainly through breathing. Toxic air pollutants can also be ingested through contaminated soil, food and water or absorbed through the skin. Once a pollutant enters the body, it can stay in the lungs, be exhaled or move into the blood from the lungs or from the digestive system or skin.

In the blood it is carried to all parts of the body. As it moves around the body, a pollutant can undergo chemical changes and trigger pro-inflammatory responses (Gonzalez- Flecha, 2004). Toxic air pollutants can cause health problems by interfering with normal body functions. Most commonly they change chemical reactions within individual cells, the building blocks of living things. These

changes can kill cells, impair cell function, or re-direct cell activity. The results can be damaged organs, birth defects when the cells of an unborn child are damaged, or cancer that develops when cells begin to grow at an uncontrolled rate. The mechanism involved in the cellular damage and various pathological conditions inside the body due to the toxic pollutants like PM has been very well discussed by Elisa Ghelfi (2011) of Department of Environmental Health, Boston, USA in her paper on 'Air Pollution and Reactive Oxygen Species'. Free radicals and oxidative stress have been implicated in inflammatory response after exposure to particulate matter (PM) (Donaldson et al., 2005). Both organic and transition metals present in PM are able to generate free radicals. Free radicals are active molecules with an unpaired electron. In biological settings free radicals are potentially very dangerous since they can react indiscriminately with neighboring molecules in order to acquire one electron. This process of electron stealing leads to oxidation and often inactivation of target molecules and cellular damage. Excessive amounts of Reactive Oxygen Species (ROS) is referred to as oxidative stress and contributes to depletion of antioxidants, cause aberrant cell death and have been implicated in a variety of pathological events like cardiovascular diseases, inflammation and neurodegenerative diseases (Chen & Nadziejko, 2005).

Some toxic air pollutants such as lead, mercury, and dioxins degrade slowly or not at all. These pollutants may bioaccumulate in humans directly or through animals. Lead is mainly emitted through leaded petrol and industries. Industrial emissions, especially from coal-fired power plants, are the leading source of environmental mercury. Although the levels of airborne mercury may not be hazardous, mercury deposits into soil and surface waters and ultimately accumulates in fish which is further consumed by people (American Academy of Pediatrics, 2001).

In majority of the cases as the air pollutants are inhaled through the lungs, the initial symptoms of toxicity are respiratory problems like coughing, sneezing, breathing problem, dizziness etc. If the exposure to these air pollutants continues, it may affect other organ systems also in addition to respiratory system. The short term and long term clinical and subclinical effects of various pollutants on children are being discussed under physical and mental health hazards.

4. Effects of Ambient Air Pollution on Physical Health of Infants and Children

The effect of exposure to air pollutants can be studied from an early stage of prenatal development. The toxicity may lead to many physical problems like organ damage and dysfunctioning of organ systems during the prenatal periods. Later at the stages of infancy and childhood, the problems may be aggravated. There are many reasons given behind greater susceptibility of children as compared to the adults. Due to higher minute ventilation and higher levels of physical activity, the

exposure to the air pollutants is much more in children as compared to the adults. The breathing rate is also higher as compared to the adults. In a recent study it has been proved that children two years of age and under have ten times the risk of adults from exposure to toxins because infants take 45 breaths to 10 adult breaths (USEPA, 2001). Their lungs, airways and immune systems are weaker. Their skin is thinner and more permeable, and they have a larger surface area for absorption relative to weight. Similarly, the elderly people and the patients suffering from respiratory and heart diseases are also highly vulnerable to the toxic effects of these air pollutants. Even a small amount of toxic air pollutant may lead to health hazards.

The major air pollutants and their toxic effects on physical health of people including children have been briefly described below in table no.1. Depending on the level of exposure, these air pollutants may cause various physical health problems. The air pollutants may affect the respiratory, cardiovascular, ophthalmologic, dermatologic, neuropsychiatric, hematologic, immunologic, and reproductive systems. The molecular and cell toxicity may also induce a variety of cancers in the long term (Loomis D, Huang W, Chen G, 2014; Rodopoulou S, et al, 2014; Carugno M et al, 2016). In case of long term or chronic exposures they may even prove to be fatal.

Table-1 : Major air pollutants and their short term and long term effects on physical health

| Air Pollutant | Major Sources of Emission | Short term Effects | Long term Effects |
|--|---|--|--|
| Particulate Matter (PM ₁₀ & PM _{2.5}) | Motor engines, industrial activities | Wheezing cough, dry mouth, breathing problems or decreased lung functions | Respiratory diseases like asthmatic bronchitis and COPD, heart disease like cardiopulmonary & cardiac dysrhythmias, cancer |
| Carbon mono oxide | Burning coal, wood, motor engines, industrial activities | Headache, weakness, dizziness, nausea, vomiting | Cardiovascular diseases |
| Sulphur-di-oxide | Burning of fossil fuel, natural volcanic processes, industrial activities | Damages to the eyes (lacrimation and corneal opacity), mucous membranes, the skin (redness, and blisters), and respiratory tracts ; Bronchospasm, pulmonary edema, pneumonitis, and acute airway obstruction | Respiratory irritation and dysfunction, cardiovascular diseases |

| | | | |
|--|--|---|---|
| Nitrogen-di-oxide | Mainly motor engines | Coughing and wheezing, eyes, nose or throat irritations, headache, dyspnea, chest pain, diaphoresis, fever, bronchospasm, and pulmonary edema | Respiratory diseases |
| Lead | Industrial activities; smelters, battery plants, irrigation water wells and wastewaters, leaded petrol | High blood pressure, infertility, digestive and renal dysfunctions, and muscle and joint pain, abdominal pain, anemia, aggression, constipation, headaches, irritability, reduced sensations, and sleep disorders | Damage to cardiovascular, renal, reproductive and nervous systems |
| Polycyclic aromatic hydrocarbons (PAH) | Fuel combustion, wood fires, motor engines | Respiratory dysfunctions | Damage to CNS, cancer |

Source : Ghorani-Azam, Adel et al, 2016

5. Effects of Ambient Air Pollution on Mental Health/ Neuro-psychological Health of Infants and Children

As it has already been discussed by Gonzalez- Flecha (2004) and Elisa Ghelfi (2011), the air pollutants may damage various organ systems of the body systems like respiratory, circulatory systems and impair their functioning. Similarly, human epidemiological studies have shown that air pollution may negatively affect the Central Nervous System (CNS) and contribute to the developmental disorders like ASD, ADHD among children. Decreased cognitive function has also been reported in children, adults and the elderly. Olfactory dysfunction, auditory deficits, depressive symptoms and other adverse neuropsychological effects have also been reported.

Primary mechanisms of air pollution neurotoxicity are related to oxidative stress and neuroinflammation which are also involved in the etiopathology of various neurodegenerative diseases. The nervous system, particularly the central nervous system (CNS), is vulnerable to oxidative stress because it has high metabolic demands, high energy use, widespread axon and dendrite networks, high cellular content of lipids and proteins, and low levels of endogenous scavengers, such as vitamin C and superoxide dismutase, which, to some extent, may be due to the CNS being isolated (Pajovic SB et al, 2003). The CNS in a child could be especially susceptible to oxidative stress from environmental toxicants because of its immature blood brain barrier and a wide range of exposures. White matter lesions have also been reported due to the toxic effects of air pollutants. A clear connection has been found between these lesions and decreases in brain

volume, loss of memory, vision and cognitive impairment (De Groot, De Leeuw et al, 2002). On the basis of extensive review of literature the neuropsychological problems specific to various toxic air pollutants have been listed in the table-2.

Table-2 : Major air pollutants and their Neuropsychological Effects on children

| S. No. | Air Pollutant | Neuropsychological Effects |
|--------|--|---|
| 1. | Particulate Matter (PM _{2.5} & PM ₁₀) | Delayed psychomotor development, Decreased verbal and nonverbal intelligence, decreased memory, Autistic Spectrum Disorder(ASD) and Attention Deficit Hyperactivity Disorder (ADHD) |
| 2. | Paracyclic Aromatic Hydrocarbons (PAH) | Behaviour problems, lower visual motor abilities, delayed psychomotor development, reduced verbal intelligence, ADHD |
| 3. | Nitrogen di oxide (NO ₂) | Delayed psychomotor development, reduced executive function (attention and working memory), ASD |
| 4. | Sulphur di oxide (SO ₂) | Delayed psychomotor development, ASD |
| 5. | Lead (Pb) | Reduced verbal and nonverbal intelligence, ASD |
| 6. | Ground level ozone (O ₃) | Lowered global and verbal development scores, ASD |

Source : Garciduenas, L.C. et al, 2014 and Gonzalez, E.Z. et al, 2015

As far as Indian studies are concerned, mental health is a nascent field of research. However, there are few studies conducted in India which throw light on the effect of hazardous air pollutants on nervous system functioning during various age groups (Gupta and Rastogi, 1989; Saxena and Saxena, 1988). A study by Sinha, S.P. (1995) examines and compares the neurotoxic effects of lead on the psychomotor behaviour of 960 school going children (9-14 years) of four areas; road side area, industrial area, commercial area and remote residential area of Agra city.

6. Conclusion

There is a growing evidence of impact of hazardous air pollutants on the physical and mental health of infants and children. However, there are a few aspects of research on health hazards of air pollutants on children which need to be taken care of. Firstly, majority of the studies in this field follow cross-sectional approach. The approach of studies in this area should focus more on longitudinal approach as proper feedback could be obtained from a continuous 10-11 year old study of the same subjects. There is a need for more studies on cumulative effect of various pollutants found in ambient air pollutants rather than focusing on individual pollutants like PM, SO₂, NO₂ etc. These studies should have humans as subjects and not the animals exclusively. Studies should incorporate personal monitoring of air pollutants inhaled by the children for studying their day to day exposure to air pollution. In the case of neuropsychological testing, the tests should be more culturally sensitive for use in various countries. Lastly, researchers from various fields like health professionals, pediatricians, behavioral scientists, psychologist and environmentalists need to collaborate with each other for an in-depth understanding of the broad spectrum of health hazards of air pollution.

References

- American Academy of Pediatrics, Goldman L. R., Shannon, M. W., "Committee on Environmental Health. Technical report : mercury in the environment : implications for pediatricians", *Pediatrics*, 108, 2001, 197- 205."
- Carugno M, Consonni D, Randi G, Catelan D, Grisotto L, Bertazzi PA, et al., "Air pollution exposure, cause-specific deaths and hospitalizations in a highly polluted Italian region", *Environ Res.*, 147, 2016, 415-24.
- Chen, L. C. & Nadziejko, C. "Effects of subchronic exposures to concentrated ambient particles (CAPs) in mice. V. CAPs exacerbate aortic plaque development in hyperlipidemic mice", *Inhalation Toxicology*, 17(4-5), 2005, 217-224.
- Chowdhury, Sourangsu & Dey, Sagnik, "Cause-specific premature death from ambient PM2.5 exposure in India : Estimate adjusted for baseline mortality", *Environment International*, 91, 2016, 283-290
- De Groot, J.C., De Leeuw, F. E., et al., "Periventricular cerebral white matter lesions predict rate of cognitive decline", *Annals of Neurology*, 52(3), 2002, 335-341.
- Donaldson, K., et. al., "Combustion-derived nanoparticles: A review of their toxicology following inhalation exposure", *Particle and Fibre Toxicology*, 2, 2005, 1743-8977.
- Elisa Ghelfi, "Air Pollution, Reactive Oxygen Species (ROS), and Autonomic Nervous System Interactions Modulate Cardiac Oxidative Stress and Electrophysiological Changes", Anca Moldoveanu (ed.), *Advanced Topics in Environmental Health and Air Pollution Case Studies*, 2011, ISBN: 978-953-307-525-9.
- Garciduenas, L.C. et. al., "Air Pollution and detrimental effects on children's brain. The need for a multidisciplinary approach to the issue complexity and challenges", *Frontiers in Human Neuroscience*. 8, 2014, 613. doi: 10.3389/fnhum.2014.00613.
- Ghorani-Azam, Adel et. al., "Effects of air pollution on human health and practical measures for prevention in Iran", *Journal of Research in Medical Sciences*. 2016, 21:65.
- Ghosal, Anirudha & Chatterjee, Pritha, "Landmark study lies buried: How Delhi's poisonous air is damaging its children for life", *The Indian Express*, April 2, 2015. available: <http://indianexpress.com/article/india/india-others/landmark-study-lies-buried-how-delhis-poisonous-air-is-damaging-its-children-for-life/>
- Gonzalez, E.Z. et al., "Air Pollution and Neuropsychological Development: A Review of the Latest Evidence", *Endocrinology*, 156(10), Oct. 2015, 3473-3482. doi: 10.1210/en.2015-1403
- Gonzalez-Flecha, "Oxidants mechanisms in response to ambient air particles", *Molecular Aspects of Medicine*, 25 (1-2), Feb-Apr., 2004, 169-82.
- Gupta, Anju, Rastogi, M. R., "Vehicular Pollution : Visual Vigilance & Eye Related Problems", *Indian Journal of Environmental Protection*, 11(12), 1993, 917-921.
- Health Effect Institute (HEI), "Understanding the health effects of the particulate matter mix : Progress and next steps" *HEI perspective*, 2002.
- International Agency for Research on Cancer, Evaluation, *IARC Monographs - 109*, IARC.

- Jain, Deepti, "Air pollution cost India 8.5% of its GDP in 2013: study". *Livemint*, September 9, 2016. available: <http://www.livemint.com/Opinion/AU3JZ499V8mJKHbUEZEDmO/Air-pollution-cost-India-85-of-its-GDP-in-2013.html>
- Kumar, P. and Saxena, V. B., *Disturbances in Psychological Functions of Workers Occupationally Exposed to Organic Solvent*, Unpublished doctoral thesis, Kanpur University, India.1985.
- Loomis D, Huang W, Chen G., "The International Agency for Research on Cancer (IARC) evaluation of the carcinogenicity of outdoor air pollution : Focus on China", *Chin J Cancer*, 33, 2014, 189-96.
- OECD, *Policy Highlights*, The economic consequences of outdoor air pollution, Organisation for Economic Co-operation and Development
- Pajovic, S. B., Saicic, Z. S., Spasic, M. B., Petrovic, V. M., "The effect of ovarian hormones on antioxidant enzyme activities in the brain of male rats", *Physiol Res*, 52, 2003, 189-94.
- Rees, Nicholas, *Clear the air for children : The impact of air pollution on children*, UNICEF, October 2016.
- Rodopoulou S., et. al., "Air pollution and hospital emergency room and admissions for cardiovascular and respiratory diseases in Doña Ana County, New Mexico", *Environ Res.*, 129, 2014, 39-46.
- Saxena, A. and Saxena, V. B., *Behavioural Effects of Occupational Exposure to Lead*, Unpublished doctoral thesis, Kanpur University, India, 1988.
- Sinha, S. P., *Neurotoxic Effects of Lead (Pb) on Intelligence and Psychomotor Behaviour of school going children of Agra city*, Report of UGC Project, Dayalbagh Agra, 1995, 100.
- US Environmental Protection Agency, Office of Air and Radiation, *Air Quality Index : A Guide to Air Quality and Your Health*, Research Triangle Park, NC : Environmental Protection Agency; 2000. Publication No. EPA-454/R-00-005. Available at: www.epa.gov/airnow/aqibroch. Accessed August 8, 2003
- US Environmental Protection Agency, *Latest findings on national air quality: 2000 status and trends*, Research Triangle Park, NC : Environmental Protection Agency; 2001. Publication No. EPA 454/K-01-002. Available at: www.epa.gov/airtrends/reports.html. Accessed August 8, 2003
- WHO, *Ambient Air Pollution Database*, May 2016 available: http://www.who.int/phe/health_topics/outdoorair/databases/WHO_AAP_database_May2016_v3web.xlsx?ua=1
- World Health Organization (WHO) Working Group. (2003). *Aspects of air pollution with particulate matter ozone and nitrogen dioxide*, Available from: http://www.euro.who.int/__data/assets/pdf_file/0005/112199/E79097.pdf ★

Habit of Concentration as Study Habit's Dimension in Relation to Academic Achievement of Hindu and Muslim Senior Secondary Students

Sushil Kumar Sharma* , Bhawana Pandey
and Narendra Kumar*****

In the present study, the researchers attempted to study the habit of concentration as Study Habit's dimension in relation to academic achievement of Hindu and Muslim senior secondary students of Kumaun region. For this purpose, 200 Hindu and Muslim senior secondary students of different Government schools of Kumaun region were finally taken as sample. Study Habits Inventory developed by B. V. Patel was used. For data analysis, Mean, S.D., t-test and Pearson product moment correlation coefficient were used. Results show that Hindu students were found to have better habit of concentration for their studies in comparison of Muslim students. It was also found that the academic achievement of both Hindu and Muslim students was not significantly related with study habit's dimension habit of concentration.

[**Keywords** : Study habit, Concentration, Academic achievement, Senior secondary students]

1. Introduction

Good study habits are very important aspect of student life because these can distinguish between good and average students. Most of the teenagers don't want to

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study due to various other habits in their life especially when there are many computer games to play, friends to chitchat with and TV to watch are available for them. Besides, developing the habit of concentration, it helps in making students a peacemaker and effective person in their lives. The home passes to- them family culture, values, way of thinking, way of living, traditions, beliefs, and life practices. Even the cultural aspect of the development is transmitted to them through their family. The Senior Secondary education is a central link between elementary and higher education. The students who develop and practice for making good habit of concentration are expected to achieve more and more in their studies in comparison of the students who don't have the good habit of concentration. Thus, good habit of concentration is very influential to the academic achievement of every student at all levels. Riaz, A., Kiran, A. and Malik, N. H. (2002) attempted to study the relationship of study habits and educational achievement. The findings of the study revealed that there was a significant impact of study habits on the educational performance of students. Nalini, Ganesha Bhatta (2009) attempted to study the study habits students in relation to academic achievement, socio-economic status, learning environment, school adjustment and intelligence. Anwar (2013) found that there was significant difference between the academic achievement of students having good study habits and poor study habits. Sharma (2012) found that good study habits of the students are significantly related with high level of academic achievement. Evans Atsiaya Siah and Julius K. Maiyo (2015) found that there was a significant and positive relationship between study habits and academic achievement. Currently, there is no research evidence of any kind available in this regard on the senior secondary students of Kumaun region. So it was felt that there was a need to work on this issue. Hence, the researchers conducted an empirical research to obtain evidence as to how the religion, habit of concentration are related with the academic achievement of senior secondary students of Kumaun Region.

2. Research Methodology

2.1 Method

In the present study, Normative Survey method of research was used. All the necessary steps have been followed which have suggested being essential for the Normative Survey Method of research by most of the educationists.

2.2 Population

For the present study, population is defined as the students of Hindu and Muslim Religion of class XI studying in government senior secondary schools of Kumaun region.

2.3 Sample

For the present study, 200 students (both Hindu and Muslim) of class XI studying in Government Senior Secondary Schools of Kumaun region were taken as sample.

2.4 Tool Used

The study habits of the students were measured by Study Habits Inventory developed by Dr. B. V. Patel. For the study habit's dimension "habit of concentration", 04 items were included in this inventory. The student was asked to give his/her opinion on a 5 points scale viz. Always, Often, Sometimes, Hardly and Never.

3. Results and Discussion

To study the significance of differences between Hindu and Muslim senior secondary students on study habit's dimension habit of concentration, t-test was used. All statistical values were calculated with the help of Microsoft Excel. Summary of t-test for difference between Hindu and Muslim students on study habit's dimension habit of concentration is given in the following table :

Table-1 : Summary of t-test for difference between Hindu and Muslim senior secondary students on study habit's dimension Habit of Concentration

| Religion | N | Sum | Sum of Squares | Mean | S.D. | t- value |
|-------------------------------------|-----|------|----------------|--------|-------|----------|
| Hindu | 102 | 1471 | 22559 | 14.422 | 3.649 | 2.507* |
| Muslim | 98 | 1293 | 18065 | 13.194 | 3.219 | |
| *p<0.05 (Significant at 0.05 level) | | | | | | |

It is evident from data contained in table above that t-value between the means of Hindu and Muslim students of Kumaun region on study habit's dimension habit of concentration was found to be 2.507. To find out the table value for degree of freedom (df) -198 at 0.05 level of significance and 0.01 level of significance, p-value calculator (<https://www.danielsoper.com/statcalc/calculator.aspx?id=8>) for student's t-test was used. Table values for degree of freedom (df) -198 at 0.05 and 0.01 level of significance were found to be 1.973 and 2.601, respectively. This indicates that the calculated t-value (2.507) was greater than the table value at 0.05 level of significance but less than the table value at 0.01 level of significance. This reveals the fact that Hindu and Muslim students were found to be differed significantly on study habit's dimension habit of concentration at 0.05 level of significance. Since, the mean difference was in favor of Hindu students which indicate that Hindu students were found to have better habit of concentration than Muslim students of senior secondary schools of Kumaun region

To study the relationship of study habit's dimension habit of concentration with academic achievement of Hindu and Muslim senior secondary students, Pearson product moment correlation coefficients were calculated. Summary of product moment correlations of study habit's dimension habit of concentration with academic achievement of Hindu and Muslim students are presented in Table-2 on next page.

Table-2 : Summary of product moment correlation of study habit's dimension habit of concentration with academic achievement of Hindu & Muslim senior secondary students

| Religion | Hindu | | Muslim | |
|--|----------------------|------------------------|----------------------|------------------------|
| Variable | Academic Achievement | Habit of Concentration | Academic Achievement | Habit of Concentration |
| N | 102 | 102 | 98 | 98 |
| Sum | 28757 | 1471 | 22744 | 1293 |
| Sum of Squares | 8377311 | 22559 | 5573394 | 18065 |
| Mean | 281.931 | 14.422 | 232.082 | 13.194 |
| S.D. | 51.686 | 3.649 | 55.141 | 3.219 |
| Product | 416809 | | 301601 | |
| Correlation | 0.109* | | 0.088* | |
| * $p > 0.05$ (Not significant at 0.05 level) | | | | |

It is evident from Table above that Pearson product moment correlation coefficient between academic achievement and study habit's dimension habit of concentration of Hindu students was found to be 0.109. The table values at 0.05 and 0.01 levels of significance and at degree of freedom (df) - 100 are 0.195 and 0.254 respectively. Therefore, it is depicted that the obtained value of the correlation coefficient was less than table value 0.195 at 0.05 level of significance. This indicates the fact that academic achievement of senior secondary students of Hindu religion was not found to be significantly correlated with study habit's dimension habit of concentration. Similarly, correlation coefficient between academic achievement and study habit's dimension habit of concentration of Muslim students was found to be 0.088. Table values at 0.05 and 0.01 levels of significance and at degree of freedom (df) - 96 are 0.199 and 0.260 respectively. Therefore, it is depicted that the obtained value of the correlation coefficient was less than table value 0.199 at 0.05 level of significance. This indicates the fact that academic achievement of senior secondary students of Muslim religion was not found to be significantly correlated with study habit's dimension habit of concentration.

4. Conclusion

The results show that Hindu and Muslim students were found to be differed significantly on study habit's dimension habit of concentration and it was also concluded that Hindu students were found to have better habit of concentration than Muslim students of senior secondary schools of Kumaun region. It was also concluded that the academic achievement of both Hindu and Muslim students was not found to be significantly related with study habit's dimension habit of concentration.

References

- Anwar, E., "A correlational study of academic achievement and study habits: Issues and concerns", *Excellence International Journal of Education and Research*, 1(2), 2013, 46-51.
- Bolling, S., *The Advantages & Disadvantages of Study Habits for College Students*, New Jersey : Prentice Hall Inc., 2000
- Evans, Atsiaya Siahi and Julius K. Maiyo, "Study of the relationship between study habits and academic achievement of students : A case of Spicer Higher Secondary School, India", *International Journal of Educational Administration and Policy Studies*, 7(7), 2015, 134-141.
- Nalini, H. K., Ganesha Bhatta H. S., "Study Habits and students Achievement in relation to some influencing factors", *Eductracks*, 9(2), 2009, 26-36.
- Patel, B. V., "Study Habits Inventory", Pestonjee, D. M. (ed.), *Second Hand Book of Psychology and Social Instrument*, New Delhi : Concept Publishing Company, 1976.
- Patel, M. R., "Study Habits of Pupils and its impact upon their Academic Achievement", *The Progress of Education*, LXX 1(4), 1996, 74-76.
- Riaz, A., Kiran, A. & Malik, N., "Relationship of Study Habits with Educational Achievement", *International Journal of Agriculture and Biology*, 4 (3), 2002, 370-371.
- Sharma, D., "A study of achievement motivation, study habits and academic achievement among secondary school students", *Educational Quest-An International Journal of Education and Applied Social Sciences*, 3(1), 2012, 17-21 ★

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