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Kalika Journal of multiple- disciplinary studies is an annual peer – reviewed research journal related to different areas of social sciences, natural sciences, education and management. It attempts to furnish the research articles in multidisciplinary aspects. The editorial board is grateful to all contributors for their contribution. We are also indebited to all reviewers who have a significant contribution in this regard. The present volume has included eleven original articles. These articles really reflect the essence of real research.

Contents

Research Article

Ethno-medicinal Plants Used by Local Communities of Pokhara Metropolitan City of Kaski District, Western Nepal

Anisha Dhakal[1], **Deepa Paudel**[1], **Asmit Neupane**[1], ***Deepak Gautam**[1,2]

ABSTRACT

In the diverse landscape of Pokhara Metropolitan City, Kaski district, Western Nepal, traditional medicine remains integral to the healthcare practices of many communities. This study presents a comprehensive exploration of the ethnomedicinal value of locally available plants, emphasizing detailed insights into the research methodology employed. Data were collected from field observation, interview with local people, key informants, consultation with experts and secondary sources. Collected data were analyzed and presented well in table and charts. Data analysis involved a multi-faceted approach, including the systematic compilation of information gathered through interviews and field observations. The collected data were further organized and presented in tables and charts for comprehensive visualization. Plant specimens were meticulously collected, studied, and identified using standard literature and consultation with university professors. The results revealed a rich tapestry of ethnomedicinal practices, showcasing 83 plant species distributed among 76 genera and 55 families, each playing a unique role in local healthcare. Trees emerged as the most prevalent life form, constituting 39.76% of the documented species. Noteworthy species included Ocimum tenuiflorum, Curcuma longa, and Citrus limon, with distinct medicinal applications The conservation and protection of these medicinal plants will further benefit in the prolonged sustainability of cultural as well as biological diversity.

Keywords: Ethnomedicine, Traditional medicine, Pokhara, Medicinal Plants, Lakeside

INTRODUCTION

Plants have been utilized since long period as a primary source of medications (Newman et al., 2003), and the historical practice of using plants in traditional medicine is still continued all over the world. They have been a key source of crude medications for various traditional

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medicine systems (Cuningham et al, 2008; Jayaprasad et al, 2011). Botanists, social scientists, anthropologists, and indigenous medicine practitioners around the world are frequently studying human-plant interactions in the natural environment (Biology Discussion, 2015). The interactions between people and plants have evolved in tandem with the emergence of humans; they have been using plants or plant products from the beginning of time, attempting to exploit them by altering their physical and genetic characteristics to suit their needs (Singh et al, 2011). Since the Vedic period, countries such as Nepal and India have used unrefined herbs as medicine. Medicinal plants are becoming more popular due to a number of purported benefits, including fewer side effects, and better patient compliance (Brown et al, 2008). Even if Nepal is a small country with an area of 147,516 square kilometers, it has a diversified collection of plant species. Nepal is prominent for the variety of assemblage of medicinal as well as aromatic plant resources which grow richly in different types of forest (Dhami, 2008). People from different regions of the country use those plants for medicinal as well as commercial purposes (Miya et al., 2020, 2021; Lamichhane et al., 2021; Pariyar et al., 2021; Singh et al., 2021). The comparison of traditional medicines which is established in terms of bio-active compounds in both plants and animals are practiced by different ethnic groups (Acharya and Shrivastava, 2008). Plants and people provide a mutual benefit among each other and the benefits of plants have been perceived by humans since the old ages. It is reported that Nepal consists of about 1,624 medicinal and aromatic plants and under cultivation and/or in the wild are commercially available in the crude drug market (Shrestha et al., 2002).

Nepal is a country that is multiethnic and multilingual, with 125 ethnic groups reported in census 2021(CBS, 2021). All of these ethnic groups residing in different ecological belts depend on various plants and plant products to meet the requirement of food, fodder, medicine, and so forth. Ethnic groups such as Brahmin, Magar, Chhetri, Kami, Gurung are substantially found residing in these communities. The ethnic societies constitute their own ethnomedicinal folklore and the superiority of ethnomedicine have been serving rural people throughout the world since the ancient past (Dhami, 2008). And the application of various plant resources of these communities is also somehow different than others (Malla et al, 2011). This can be distinctly observed as communities of different regions have different approaches to ethnobotany and their uses. There are a few ethnomedicinal studies and floral exploration from the Kaski district (Acharya et al, 2010; Bhattarai et al, 2011; Rana et al, 2015; Kunwar et al, 2017; Adhikari et al 2010; Adhikari et al, 2019; Miya and Gautam, 2021), but the studies incorporating these localities are rather rare. The ethnomedicinal value of locally

available plants has been integral to healthcare practices, weaving a rich tapestry of indigenous knowledge. However, a comprehensive exploration of these practices, along with a detailed understanding of the research methodology employed, has been notably absent. Despite the cultural significance of ethnomedicinal practices in Pokhara, there exists a conspicuous gap in our understanding, with limited in-depth studies on traditional healthcare systems in this region. The primary objective of this study is to comprehensively explore and document the ethnomedicinal practices associated with locally available plants in Pokhara Metropolitan City, Kaski district, Western Nepal. Specifically, the study aims to identify and catalog plant species used in traditional medicine, understand the cultural significance and traditional knowledge associated with medicinal plants, investigate the distribution and prevalence of ethnomedicinal practices across different communities within Pokhara and to provide insights into the research methodology employed for the documentation of ethnomedicinal practices, ensuring transparency and reliability of the study. As cultural practices evolve and biodiversity faces increasing threats, urgent attention is required to document and analyze the indigenous knowledge associated with medicinal plant use. As a result, this study aims to address this gap by delving into the ethnomedicinal practices of Pokhara, providing a holistic understanding of the relationship between cultural practices, biodiversity, and traditional healthcare. This research not only fills a critical void in our understanding of traditional healthcare in Pokhara Metropolitan City but also contributes to the broader discourse on the interplay between cultural practices, biodiversity, and the sustainability of traditional healing methods.

DATA AND METHODS

Study Area

The present study was conducted in and around three distinct locations of Pokhara metropolitan city, Kaski District Nepal. The study was conducted in Lamachaur-16, Lakeside-6, and Chapakot-23 (Figure 1), strategically chosen to represent distinct characteristics and ethnic compositions. Lamachaur is predominantly involved in business and jobs, Lakeside relies on tourism, and Chapakot is primarily agriculture-based. The residents of the study area are primarily of Brahmin and Chhetri ethnicity. Understandably other ethnicity such as Gurung, Magar, and Newar were also believed to be sharing the space. Lamachaur has latitude of 28.2613^0N and longitude of 83.9721^0E and has ward no.20 on the east, ward no.19 on the west and the north and Madi rural municipality on the south. Lakeside has a latitude

of 28.2100^0 N and longitude of 83.9558^0 E having Ratnachowk on the east, Pame on the west, Sarangkot on the north and Pumdi on the south. Similarly, Chapakot has a latitude of 28.2277^0 N and longitude of 83.8950^0 E having Pumdi on the east, Panchase on the west and Kaski kot on the north. The communities on Lamachaur mostly earn their livelihood through business and jobs whereas Brahmins and Chhetris of Lakeside rely on tourism as their primary income. Similarly, the majority of people in Chapakot are dependent on agriculture as their source of income. The annual average temperature of Pokhara is about 21.5°C. Similarly, the average rainfall in summer is around 799.33 mm and 4.00 mm in winter. The area receives approximately 74% of its annual rainfall during summer (Gautam et al.,2018).

The study was conducted in the months of September and October of 2021 for the collection of ethnomedical information. Respondents were randomly chosen from three sites of Pokhara Metropolitan City (Lamachaur, Lakeside and Chapakot) of Kaski district of western Nepal. Data collection was carried out prioritizing the inclusion of elderly individuals with significant experience in utilizing medicinal plants. The data for this study were gathered through an immersive exploration of ethnomedicinal knowledge within Pokhara Metropolitan City, Kaski district, Western Nepal. To comprehensively understand the traditional healing practices, field surveys and interviews were conducted with local communities and traditional healers. These interactions yielded valuable qualitative insights into the utilization of medicinal plants, along with the associated cultural significance. Botanical surveys, carried out in collaboration with local experts, further identified and cataloged the plant species integral to traditional medicine. Participant observation played a crucial role, allowing researchers to immerse themselves in the local culture and healthcare practices. The study also involved systematic documentation of traditional knowledge, capturing details on plant names, preparation methods, and treated ailments. Additionally, a thorough review of existing literature on ethnomedicinal practices in the region complemented the primary data.

This multifaceted approach, incorporating community engagement, botanical surveys, participant observation, and literature review, ensures a holistic understanding of ethnomedicinal practices in Pokhara, contributing to the depth and authenticity of the study. Total 60 individuals (20 from each site); 6 key informants (2 from each site) were directly interviewed and cross checking was done with the consultation of 3 ethnomedicinal experts. The selection of 60 respondents for the study was guided by statistical considerations and practical constraints. This sample size is widely accepted in ethnobotanical research, allowing for meaningful insights into local knowledge while balancing resource and time limitations.

Additionally, it aligns with established norms and facilitates thorough interviews and botanical surveys within the available timeframe. The primary research tool employed for data collection in this study was structured interviews. These interviews were designed to gather detailed information from respondents regarding their knowledge of local plant use and practices. The structured format ensured consistency across interviews, enabling systematic data analysis and interpretation. The specimens were collected, critically studied and identified with the help of standard literature (Haines, 1961; Hooker, 1872-1897; Hara et al., 1978, 1982; Hara and Williams, 1979; Siwakoti, 1995; Polunin and Stainton ,1984) as well as consultation with university professors. The collected data underwent a rigorous process of qualitative analysis. Transcripts from structured interviews were systematically coded to identify recurring themes and patterns. This thematic analysis provided valuable insights into the local plant use practices. Additionally, statistical methods, including descriptive statistics, were applied to quantify certain aspects of the data. The combination of qualitative and quantitative analyses offered a comprehensive understanding of the study's subject matter.

Figure 1

Map Showing Different Wards of Pokhara Metropolitan City
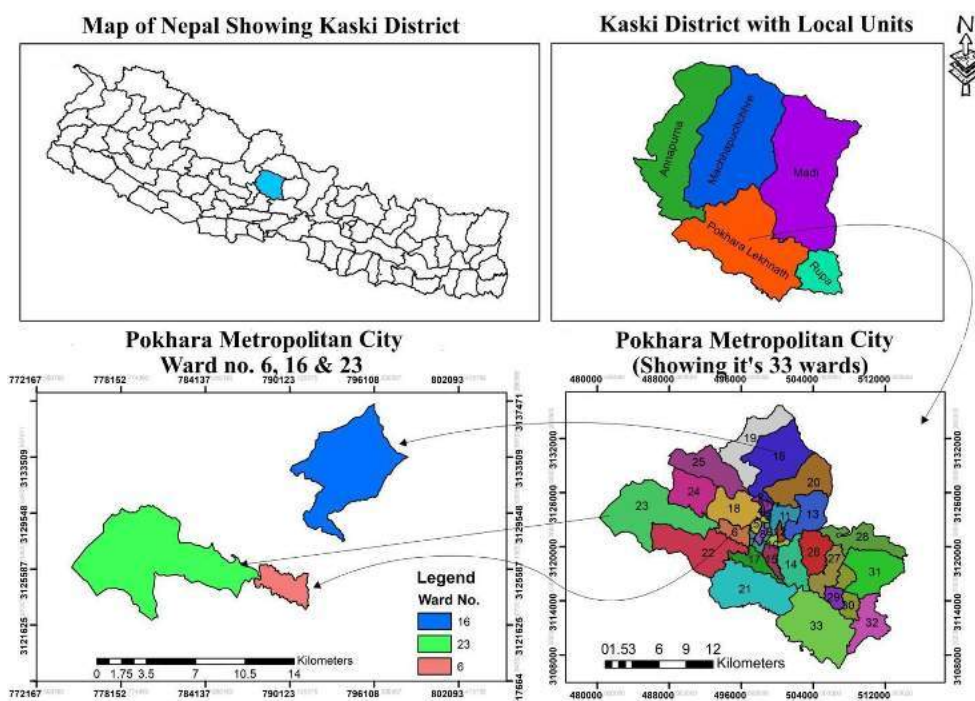
RESULTS AND DISCUSSION

Medicinal plants play a vital role in Nepal's primary health care systems. Most ethnic groups have relied on them for the treatment of various diseases and for their livelihood since the dawn of civilization. This has been proven from different ethnomedicine related publications. The local communities of the study area proved to be rich in ethnomedicinal culture. A total of 83 different plant species were documented belonging to 76 different genera and 55 families (Table 1). The widespread life form of plants is tree (39.76%) followed by herb (38.55%), shrub (13.25%), climber (3.62%), grass (2.41%), and fern (2.41%) (Figure 2). Most of the medicinal plants reported belong to the family Fabaceae: six plant species. Plant species belonging to the family Asteraceae and Zingiberaceae are four each.

The local community of study area has profound knowledge on different trees, herbs and shrubs species with ethnomedicinal value. The studied area is ethnobotanically rich with diversified species. These different communities are found to be using these plant species in terms of food, medicine, timber and fodder. It was found that *Ocimum tenuiflorum* L.(31%) was the most common species used as a medicine in these communities, followed by *Curcuma longa L.* (23%), Citrus limon(L.) Osbeck (19%),*Centella sciatica* (L.) Urb. (15%) and *Zingiber officinale Roscoe* (12%). The local people of these communities are more advanced in terms of their education and economy. Even so, they tend to incline more towards the traditional methods of medicine more than the science-based ones. The lack of general awareness and superstition among the community since the old ages has been the contributing factor towards this endurance of knowledge. The younger generation seems to be incorporating traditional values along with modern medicine. The people of these areas are perturbed due to the fact that unplanned development and increasing population has resulted in loss of species with ethnomedicinal values. The plants need to be preserved in natural habitat and can be done so by establishing botanical gardens by impelling the locals for ex situ conservation (Malla et al., 2015).

Figure 2

Pie Chart Showing the Life Form of Plants (n=83)
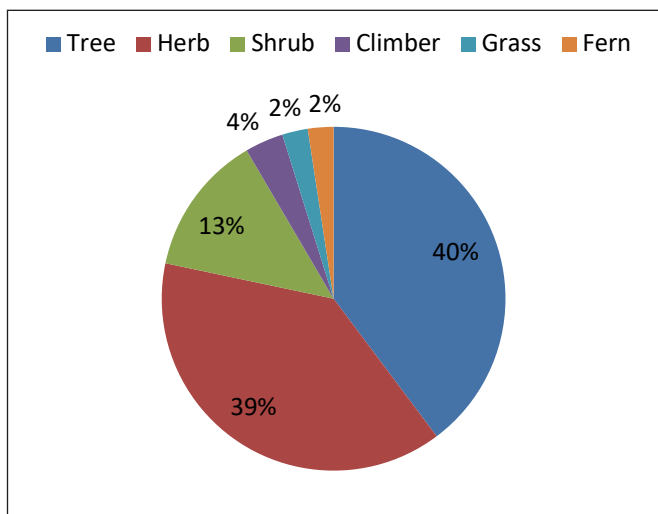
Table 1

List of Ethnomedicinal Plants Used by Local Communities of Kaski

S. N.	Scientific Name	Local Name	Family	Life form	Part used	Uses	Modes of uses
1.	*Acacia cat-echu (L.f.) Willd.*	Khair	Leguminosae	Tree	Flower, wood	gonorrhea, diarrhea, dys-entery	The flower and wood are used to treat gonorrhea, diarrhea and dys-entery.
2.	*Acacia niloti-ca (L.) Delile*	Babul	Leguminosae	Tree	Young plant	Venereal	The young plant is used to treat venereal.
3.	*Achyranthes bidentata Blume*	Datiwan	Amaranthaceae	Herb	Whole body	Typhoid, anti-allergic, asthma	The whole body is used to treat ty-phoid and asthma. It is also regarded as anti-allergic.
4.	*Acmellacalva (DC.) R.K. Jansen*	Marathi	Compositae	Herb	Fruit or Flower	Intestinal worms	The fruit and the flower of the spe-cies is extracted for the treatment of intestinal worms.

S. N.	Scientific Name	Local Name	Family	Life form	Part used	Uses	Modes of uses
5.	*Acorus calamus L.*	Bojho	Acoraceae	Herb	Rhizome	Asthma, cough	The rhizome of the plants is used to treat asthma and cough.
6.	*Adhatodazeylanica Medik.*	Asuro	Acanthaceae	Tree	Leaf	Catarrh, cough	The leaf is used to treat catarrh and cough.
7.	*AgeratinaAdenophora (Spreng.) R.M.King & H.Rob.*	Banmara	Compositae	Shrub	Leaf	Cuts and wounds	The leaf is applied to heal the cuts and wounds.
8.	*Allium cepa L.*	Pyaj	Amaryllidaceae	Herb	Bulb, leaf	Whooping cough, vegetable, eczema, rheumatic pain	The bulb and leaf of the species are used to treat whooping cough, eczema and rheumatic pain.
9.	*Allium sativum L.*	Lasun	Amaryllidaceae	Herb	Bulb	Diarrhea, gastritis	The bulb of the plant is used to treat diarrhea and gastritis.
10.	*Aloe vera (L.) Burm.f.*	Ghiukumari	Asphodelaceae	Herb	Leaf	Fever, skin infection, burns	The leaf of the plant is used for the treatment of fever, skin infection and burns.
11.	*Amaranthus hypochondriacus L.*	Latte ful	Amaranthaceae	Herb	Whole plant	Diarrhea, wounds	The whole plant is used to treat diarrhea and wounds.
12.	*Amomum subulatum Roxb.*	Alainchi	Zingiberaceae	Herb	Fruit	Cough and cold	The fruit of the plant is used to treat cough and cold.
13.	*Ananas comosus (L.) Merr.*	Bhui-ka-tahar	Bromeliaceae	Shrub	Fruit	Indigestion	The fruit of the plant is used to treat indigestion.
14.	*Annona squamosa L.*	Sarifa	Annonaceae	Shrub	Leaf	Ulcer, dysentery, wound	The leaf of the plant is used to treat ulcer and dysentery as well as to heal the wounds.

S. N.	Scientific Name	Local Name	Family	Life form	Part used	Uses	Modes of uses
15.	*Artemisia dubiaL. ex B.D.Jacks.*	Titepati	Asteraceae	Herb	Leaf	Allergy, anti-bacterial	The leaf of the plant has anti al-lergic as well as antibacterial prop-erties.
16.	*Asparagus racemo-susWilld.*	Kurilo	Asperagaceae	Shrub	Whole plant	Diabetes	The whole plant is used in the treat-ment of diabetes.
17.	*Azadirachta-indicaA.Juss.*	Neem	Meliaceae	Tree	Leaf and bark	Fever, cough and skin dis-orders	The leaf and the bark of the plant are used to treat fever, cough and skin disorders.
18.	*Basella alba L.*	Poisag	Basellaceae	Herb	Apical shoot	Insomnia	The apical shoot of the plant is used to treat insomnia.
19.	*Bauhinia pur-purea L.*	Koiralo	Leguminosae	Tree	Bark	Gastritis	The bark of the plant is used to treat gastroenteri-tis.
20.	*Berberis ari-stata DC.*	Chutro	Berberidaceae	Shrub	Bark and root	Typhoid, jaundice, di-arrhea	The bark and root of the plant are used in the treat-ment of typhoid, jaundice and diar-rhea.
21.	*BlumeaLac-era(Burm.f.) DC.*	Kurkure	Asteraceae	Herb	Leaf	Cuts	The leaf of the plant is used to heal cuts.
22.	*Bombax cei-ba L.*	Simal	Bombacaceae	Tree	Root, Bark	Dysentery, fracture	The root and bark of the plant are used in the treat-ment of dysentery and fracture.
23.	*Cannabis sati-va L.*	Bhang	Cannabaceae	Shrub	Leaf, flower	Piles	The leaf and flow-er of the plant are used to treat piles.
24.	*CentellaAsiat-ica(L.) Urb.*	Ghod-tapre	Apiaceae	Herb	Whole body	Cough, ty-phoid	Whole plant is used to cure cough and typhoid.
25.	*Chenopodium*						

S. N.	Scientific Name	Local Name	Family	Life form	Part used	Uses	Modes of uses
Al-bum L.	*Bethe*	Chenopodi-aceae	Shrub	Young shoot	Constipa-tion, nutri-tion	The young shoots of the plant are used to cure con-stipation and nutritional diseases.	
26.	*Cinnamomum tamala(-Buch.-Ham.) T.Nees&E-berm.*	Tejpat	Lauraceae	Tree	Leaf and bark	Gastritis, fever	The leaf and bark of the plant are used in the treat-ment of gastritis and fever.
27.	*Citrus aurantiifo-lia(Christm.) Swingle*	Kagati	Rutaceae	Tree	Fruit	Skin disorder, jaundice	The fruit of the plant is used to cure skin disorder and jaundice.
28.	*Citrus li-mon(L.) Os-beck*	Nibua	Rutaceae	Tree	Fruit	Food poison-ing	The fruit of the plant is used in the treatment of food poisoning.
29.	*Coffea Arabi-ca L.*	Coffee	Rubiaceae	Tree	Fruit	Headache	The fruit of the plant is used to treat headache.
30.	*Coriandrum sativum L.*	Dhaniya	Apiaceae	Herb	Leaf, seed	Stomach disorders, diabetes	The leaf and seed of the plant are used in the treat-ment of stomach disorders and dia-betes.
31.	*Crotonbon-plandianus-Baill.*	Mirchaiya-jhaar	Euphorbiaceae	Herb	Leaf, Root	Ulcer, cuts	The leaf and root of the plant are used to cure ulcer and cuts.
32.	*Curcuma angustifolia Roxb.*	Barkhesarro	Zingiberaceae	Herb	Rhizome	Stomach ache, gastritis	The rhizome of the plant is used in the treatment of stomachache and gastritis.
33.	*Curcuma lon-ga L.*	Besar	Zingiberaceae	Herb	Rhizome	Sore throat, fever, com-mon cold	The rhizome of the plant is used to treat sore throat, fever and common cold.
34.	*Cyathea spinulosaWall. ex Hook.*	Chhatre	Cyatheaceae	Fern	Soft pith	Body pain	The soft pith of the plant is used to cure body pain.

S. N.	Scientific Name	Local Name	Family	Life form	Part used	Uses	Modes of uses
35.	*CynodonDactylon(L.) Pers.*	Dubo	Poaceae	Herb	Whole plant	Diarrhea, dysentery	Whole plant is used in the treatment of diarrhea and dysentery.
36.	*Cyperus rotundus L.*	Mothekaseru	Cyperaceae	Herb	Tuber	Stomach ache	The tuber of the plant is used to treat stomach ache.
37.	*Dalbergia sissoo DC.*	Sisau	Fabaceae	Tree	Leaf, Stem	diarrhea, scabies	The leaf and stem of the plant are used in the treatment of diarrhea and scabies.
38.	*Drymariadiandra Blume*	Abhijalo	Caryophyllaceae	Herb	Whole plant	Sinusitis	Whole plant is used to cure sinusitis.
39.	*Erythrina stricta Roxb.*	Phaledo	Fabaceae	Tree	Bark	Typhoid	The bark of the plant is used to treat typhoid.
40.	*Euphorbia hirta L.*	Aanklejhar	Euphorbiaceae	Herb	Whole plant	Piles	Whole plant is used to cure piles.
41.	*Ficus benghalensis L.*	Bar	Moraceae	Tree	Milky juice	Heel cracks, venereal Disease, cataract	*The milky juice of the plant is used to treat venereal diseases, cataract and heel cracks.*
42.	*Ficus religiosa L.*	Peepal	Moraceae	Tree	Leaf, Bark and Fruit	Rheumatoid arthritis, diabetes, atherosclerosis	The leaf, bark and fruit of the plant are used to treat rheumatoid arthritis, diabetes and atherosclerosis.
43.	*Fraxinus floribunda Wall.*	Lankuree	Oleaceae	Tree	Bark	Broken legs, arms	The bark of the plant is used for the treatment of broken legs and arms.
44.	*Jatropha curcas L.*	Sajiwan	Euphorbiaceae	Tree	Stem and Leaf	Tonsillitis	The stem and leaf of the plant are used to treat tonsillitis.

S. N.	Scientific Name	Local Name	Family	Life form	Part used	Uses	Modes of uses
45.	*Juniperus indicaBertol.*	Dhupi	Cupressaceae	Tree	Stem, Seed	Blood pressure, congestion, bone pain, rheumatism	The stem and seed of the plant are used to cure blood pressure, bone pain and rheumatism.
46.	*Lepidium sativum L.*	Chamsur	Brassicaceae	Herb	Whole plant	Rheumatism, liver problems	Whole plant is used to treat various liver problems and rheumatism.
47.	*Leucaena leucocephala(Lam.) de Wit*	Seto babul	Fabaceae	Tree	Seed	Ascaris, trichinosis	The seed of the plant is used to treat ascaris and trichinosis.
48.	*Litsea-cubeba(Lour.) Pers.*	Siltimur	Lauraceae	Tree	Seed	Gastritis, sore throat	The seed of the plant is used to treat gastritis and sore throat.
49.	*Magnolia champaca(L.) Baill. ex Pierre*	Chaap	Magnoliaceae	Tree	Flower, Steam and Bark	Diabetes, cardiac disorder, gout	The flower, stem and bark of the plant are used for the treatment of diabetes, cardiac disorder and gout.
50.	*Mangifera indica L.*	Aanp	Anacardiaceae	Tree	Bark	Inflammation, menstrual bleeding, scabies, diabetes, diarrhea	The bark of the plant is used to cure inflammation, menstrual bleeding,
51.	*Mirabilis jalapa L.*	Lanka sani	Nyctaginaceae	Herb	Rhizome	Gastritis, body pain	The rhizome of the plant is used to treat gastritis and body pain.
52.	*Melia azedarach L.*	Bakenu	Meliaceae	Tree	Bark	Diarrhea	The bark of the plant is used to cure diarrhea.
53.	*Mentha spicata L.*	Pudina	Lamiaceae	Herb	Whole plant	Diarrhoea, dysentery, stomach ache	Whole plant is used in the treatment of diseases like diarrhea, dysentery and stomach ache.
54.	*Mimosa pudica L.*	Lajjawati	Fabaceae	Herb	Root	Scabies	The root of the plant is used to cure scabies.

S. N.	Scientific Name	Local Name	Family	Life form	Part used	Uses	Modes of uses
55.	*Momordica charantia L.*	TiteKarela	Cucurbitaceae	Climb-er	Fruit	Piles and high blood pressure	The fruit of the plant is used to treat piles and high blood pressure.
56.	*Moringa oleif-era Lam.*	Sigru	Moringaceae	Tree	Bark	Rheumatism	The bark of the plant is used to treat rheumatism.
57.	*Morus alba L.*	Kimbu	Moraceae	Tree	Bark	Toothache	The bark of the plant is used for the treatment of toothache.
58.	*Myrica esculent-aBuch.-Ham. ex D. Don*	Kafal	Myricaceae	Tree	Fruit	Diabetes	The fruit of the plant is used to treat diabetes.
59.	*Nephrolepis-cordifolia(L.) C. Presl*	Pani Amala	Nephrolepida-ceae	Fern	Tuber	Dehydration, jaundice	The tuber of the plant is used to treat dehydration and jaundice.
60.	*Nicotiana tobacumSpeg.*	Kachopaat	Solanaceae	Herb	Leaf	Infected cuts and wounds	The leaf of the plant is used to treat infected cuts and wounds,
61.	*Nyctanthesar-bortristisCra-ib*	Parijaat	Oleaceae	Tree	Leaf	Fever, rheu-matism	The leaf of the plant is used to cure fever and rheumatism.
62.	*Ocimumtenui-florum L.*	Tulasi	Lamiaceae	Shrub	Whole plant	Heart failure, flu, other heart diseases	Whole plant is used for the treat-ment of heart fail-ure, flu and other heart diseases.
63.	*Oxalis cornic-ulate L.*	Chariamilo	Oxalidaceae	Herb	Whole plant	Indigestion, appetizer	Whole plant is used for the treat-ment of indiges-tion and appetizer.
64.	*Periploca-calophyl-la(Wight) Falc.*	Chautajor	Asclepiadaceae	Herb	Root	Backbone and body pain	The root of the plant is used to cure backbone and body pain.
65.	*Prunus persi-ca(L.) Batsch*	Aaru	Rosaceae	Tree	Bark and leaf	Sore throat	The bark and leaf of the plant are used to treat sore throat.

S. N.	Scientific Name	Local Name	Family	Life form	Part used	Uses	Modes of uses
66.	*Psidium guajava L.*	Amba	Myrtaceae	Tree	Leaf	Mental illness	The leaf of the plant is used to treat mental illness.
67.	*Punica granatum L.*	Anar	Punicaceae	Tree	Fruit and Bark	Dysentery, diarrhea	The fruit and bark of the plant are used for the treatment of diarrhea and dysentery.
68.	*Rauvolfiaserpentina(L.) Benth. ex Kurz*	Chand maruwa	Apocynaceae	Herb	Leaf	Mental disorder	The leaf of the plant is used to treat mental disorders.
69.	*Rhododendron arboretum Sm.*	Lali gurans	Ericaceae	Tree	Flower	Throat obstructions, diarrhea, dry cough	The flower of the plant is used to cure throat obstructions, diarrhea and dry cough.
70.	*Rubus ellipticus Sm.*	Ainselu	Rosaceae	Tree	Root	Fever, sore throat	The root of the plant is used to treat fever and sore throat.
71.	*Rumex nepalensisSpreng.*	Halhale saag	Polygonaceae	Herb	Whole plant	Constipation, skin infections, diarrhoea	Whole plant is used to treat constipation, skin infections and diarrhea.
72.	*Saccharum officinarum L.*	Ukhnu	Poaceae	Grass	Stem	Jaundice	The stem of the plant is used for the treatment of jaundice.
73.	*Saccharum spontaneum L.*	Kaans	Poaceae	Grass	Flower	Cuts	The flower of the plant is used to cure cuts.
74.	*Solanum torvum Sw.*	Setobihee	Solanaceae	Shrub	Fruit	Toothache	The fruit of the plant is used to treat toothache.
75.	*Stephania japonica(Thunb.) Miers*	Batulepaat	Menispermacae	Climber	Leaf	Hemorrhage	The leaf of the plant is used to cure hemorrhage.
76.	*Swertia chirayita(Roxb.) Buch.-Ham. ex C.B.Clarke*	Chiraito	Gentianaceae	Herb	Leaf	Constipation, fever, headache	The leaf of the plant is used for the treatment of constipation, fever and headache.

S. N.	Scientific Name	Local Name	Family	Life form	Part used	Uses	Modes of uses
77.	*Tinosporasinensis(Lour.) Merr.*	Gurjo-ko-la-haraa	Menispermaceae	Climber	Stem	Venereal disease	The stem of the plant is used to cure venereal diseases.
78.	*Viburnum mullaha-Buch.-Ham. ex D. Don*	Molo	Sambucaceae	Tree	Fruit	Food poisoning	The fruit of the plant is used for the treatment of food poisoning.
79.	*Viola canescens Wall.*	Aankhlejhar	Violaceae	Herb	Leaf	Joint pain	The leaf of the plant is used for the treatment of joint pain.
80.	*WoodfordiaFruticosa (L.) Kurz*	Ras dhain-yaro	Lythraceae	Shrub	Flower	Diarrhea, dysentery	The flower of the plant is used to cure diarrhea and dysentery.
81.	*Zanthoxylum armatum DC.*	Parparetim-mur	Rutaceae	Shrub	Seed	Gastritis, intestinal worms, toothache, poisoning	The seed of the plant is used to cure gastritis, Intestinal worms, Toothache, Poisoning
82.	*Zingiber officinaleRoscoe*	Adhuwa	Zingiberaceae	Herb	Rhizome	stomachache, common cold, vomiting	The rhizome of the plant is used to treat stomach ache, common cold and vomiting.
83.	*Ziziphus mauritiana Lam.*	Bayer	Rhamnaceae	Tree	Fruit	Measles	The fruit of the plant is used to cure measles.

CONCLUSIONS

This research thoroughly explores how local communities rely on native plants, showing that these plants are deeply intertwined with daily life, culture, and economy. Through interviews and careful analysis, it becomes clear that these native plants are essential to these communities. Recognizing the vital role of native plants is not just something for academics to think about; it has real-world implications for how we manage our resources sustainably. The findings of this study go beyond the world of academic research; they call for real, practical actions to conserve our environment. Understanding how these plants are used is not just about preserving traditions; it also helps in protecting different plant species and, in turn, the variety of life on our planet. In a world where modernization often threatens traditional knowledge,

this research emphasizes the importance of combining old wisdom with what we know now about preserving our environment. It's like blending the best of the old and the new to make sure we're taking care of our planet properly. This study is more than just a wake-up call for responsible resource management; it's a reminder that we need to make sure these important plant resources last for a long time. By connecting the traditional practices of indigenous communities with efforts around the world to take care of our environment, this research adds important information to the ongoing conversation about how to keep our planet healthy for the future. These insights aren't just for people who study this kind of thing; they're practical things we can all think about to make sure we're taking care of our planet for a long time to come.

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Research Article

People's Experience Towards the Federal System in Gandaki Province, Nepal

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ABSTRACT

This study examines the debate over federal systems in the Gandaki region of Nepal. People's experience towards the federal system in Gandaki Province is the key objective of this study. Within five years following the promulgation of constitution in 2015, general elections were held, and people received goods and services from three distinct governments. Through local, provincial, and federal governments, the public takes part in the process of public policy making. Since the system attempts to meet people's wants, it has received positive response from everyone. Both primary and secondary data were used in this study. Primary data was gathered through interviews, and secondary data came from research papers, books, and other sources. The finding of this study shows that local government has been effective in delivering goods and services at the local level. In the public opinion, local governments have successfully justified their existence while provincial government has failed to do so. Also, this investigation finds that the federal government does not fully adhere to power sharing. As a result, the performance of provincial government is far below par. Furthermore, provincial governments lack the innovation needed to take over the federal system, which consists of both local and federal administrations.

Keywords: *Federalism, inclusive- democracy, integration, power-sharing, province.*

INTRODUCTION

In political science, the term "federalism" refers to both a theoretical and practical framework. Both conceptual and practical terminologies have made use of it. Federalism is one of the many philosophies that influence global governance and has to be addressed now (Tariq, Khan & Rizwan, 2018). Three significant political turning points in Nepal's history may be identified: the 1951 revolution, the joint people movements of 1990 and 2006, as well as the mandate of the democratic joint people movement and other people movements. A new federal Constitution, adopted by Nepal's Constituent Assembly in 2015, commits to create

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a "Naya" (or "New") Nepal that is more fair and inclusive. Key political developments in Nepal can be attributed to these populist movements and a federal democratic republic. Since 2015, Nepal has implemented a federal system to handle the nation's diversity and create adequate governance, long-lasting peace, and prosperity. Nepal has a federal government and is a democratic republic. Following the acceptance of Nepal's new constitution by the Constitutional Assembly, it is declared in 2015. A power-sharing arrangement is established between the national, provincial, and municipal administrations. Federalism is a system of institutional agreements for allocating duties, responsibilities, and powers between the national and subnational levels of government (Burris, 2015).

Efforts in Europe to develop toward both wider and deeper integration in what has become the European Union have led to a heightened interest in federal principles and an explosion of literature on the subject (Watts, 1998). It is challenging to examine federalism in the broadest sense, which is evident in both theory and practice. Both an actual and a theoretical resonance surround the phrase "federal" (Michael Burgess, 2021). As the first nation in the world to adopt a federal democratic government in the twenty-first century, Nepal. 29 countries around the world use a federal system. Nepal has now had eight years to try the federal system.

In order to give each of the constituent units' sufficient opportunity for autonomous growth, federalism as a form of government has been increasingly widely acknowledged as the ideal form of governance for managing multiethnic governments (Obi, 2019). The federal systems respond to and deal with citizens' interests and concerns, both inside and outside the political system, with particular emphasis on the relationship between federalism and democracy (Fossum & Jachtenfuchs, 2017). Federalism is a method for dividing up governmental powers and responsibilities. The federal framework is a means, not an end, as the founding fathers clearly acknowledged (Grodzins, 1960). The federal system is the power-sharing between the central and local governments (Watts, 2001). Federal relations are to be based on principles of cooperation, co-existence, and coordination (Shakya, 2009 and Tharu, 2020). In federalism division of powers among levels of government (Obi, 2019). Federal democracies place a strong emphasis on representation. In federal democracies, citizens are both individually and collectively represented in the central institutions by means of the corresponding sub-units (Fossum & Jachtenfuchs, 2017). Federalism has been strongly influenced by the geo-political context in which it originated; namely, the federal systems of North America. This has led to problems relating to its extension to other cases, especially

to the nation-states of Europe and Asia (Ahmad & Brosio, 2006). The concept of federalism has also been reevaluated in Asia, Africa, and Australia. India and Malaysia, both of which are characterized by profoundly ingrained multilingual, multicultural, and multiracial variety, have managed to remain cohesive for 50 and 30 years, respectively, but are now in a crucial stage in their development (Watts, 1998). In 2022 and 2023, the cultural wars in American federalism intensified, with persistent disputes between the two severely polarized political parties, among the many tiers of government, as well as between the states and the private sector (Bromley-Trujillo & Nolette, 2023). Due to its rigid version of ethno-federalism, which gives all ethnic groups complete freedom of self-determination and secession, Ethiopia is unique in the world. Different kinds of political violence are encouraged by ethno federal administrations. Although violence is encouraged by this type of system, it is actually started by regime politics (Ayele, Fuller & Raleigh, 2023).

The Swiss Confederation is dedicated to the long-term preservation of natural resources as well as a just and peaceful international order. It also aims to advance the common good, sustainable development, internal cohesion, and cultural diversity of the nation (2021 Swiss Federal and Confederation). The federal principle is an organizing principle and its fundamental purpose is essentially moral (Michael Burgess, 2021).

> We, the People of the United States, do ordain and establish this Constitution for the United States of America in order to create a more perfect union, establish justice, ensure domestic tranquility, fund a common defense, advance the general welfare, and ensure the blessings of liberty for ourselves and future generations. (United States, 2021).

Through power-sharing, the federal system seeks to give the people more power. The people participate in the governance, planning, and formulation of policies in this system. This study objective to assess the People's experience of Nepal's federal system of Gandaki Province. The findings of this study thus sheds light on the competencies of local governments in laying the foundation for the functioning of local- governments. The findings of this study thus provide normal information on Nepal's experience in implementing the federal government system. In Nepal, elected federal democratic governments have been in place since 2017. A research gap is an area of a problem that has not been examined. Applying a federal system in Nepal is a novel way to distribute authority and power. The results might fill a gap in the collection of knowledge.

DATA AND METHODS

This study was designed using a qualitative, interpretive framework and George's paradigm of descriptive design (2008). Since the representative's opinions and views served as the basis for the analysis, the study was qualitative in nature. Data were acquired from both primary and secondary sources. The 25 respondents from Gandaki province forms the source of data for this empirical study. The respondents for this study were chosen using a purposeful, conventional, and justified sampling technique. They are chosen for in-depth interviews because they are intellectuals, active participants of the civil society, and legislators from the Gandaki province.

The internet, books, journals, and research reports were a few of the sources used to generate secondary data. Information has been gathered and examined in between July and August of 2022. There were some fieldwork activities as well. Before conducting an interview survey, all the necessary permissions were obtained from the respondents. A free prior and informed consent (FPIC) was taken from all the respondents. The respondents were also informed that the collected information will be used only for this research purpose and their personal identity will not be disclosed elsewhere.

RESULTS AND DISCUSSION

Nepal is the federal democratic republic nation of the 21st century. The people of Nepal demanded for the Constituent Assembly (CA) made constitution. The first Constituent Assembly election was held in Nepal in 2008. The first general meeting of Constituent Assembly announced Nepal as a federal democratic republic nation. The second CA (2013) has been successful to promulgate the new constitution, the Constitution of Nepal, 2015. The new constitution adopted inclusive democracy. For a long time, Nepal practiced a unitary system of government which did not fulfill the people's desire for development and prosperity. The unitary system did not provide social justice to the people. In Nepal, there inhabits people of different languages, castes, religions and cultures, and they do not have the same opportunity to participate in the public policy making process. They do not have got the same opportunity to participate in governance, planning, and development activities. So, Nepal has changed from a unitary system to a federal system. The federal system means power-sharing at the policy level.

After the promulgation of the new constitution in 2015, the federal system was formally adopted in Nepal. Now, there are 753 local governments and 7 provincial governments,

in addition to the federal government, which serves as the country's main authority. The constitution grants certain rights to each of the three levels of government.

Local Government

Local government is powerful and empowered as the new constitution has guaranteed 22 rights along with other concurrent rights. Local governments at the grassroots level now supply goods and services close to the people's administrative centers. At the local level, it elevates community leaders. They do, however, take part in local lawmaking and executes them within the local territory. They have used their local legislative, executive, and judicial authority (Constitution of Nepal, 2015). Daily service delivery has been handled by the local government through the ward offices. The ward chairman is crucial because they can readily supply goods and services to the population's core. Leaders of the local government are closely tied to the public since they reside there. They share a problem and work together to find a solution since they share many of the same issues and have strong bonds with the locals. Similarly, local officials use their authority to enact laws.

In the last five years, the local governments of the Gandaki province have put more than 2000 pieces of legislation into effect. The local politicians have recognized that, being close to the people, have made them more effective in local leadership and development. On the other hand, the local administration interacts with the people daily, including in the morning and evening. It demonstrates how the public feels that their local government truly represents them. Since it seeks to address and solve the local issue. Furthermore, some representatives of the people treat them with respect and are accountable for providing them with impartial, effective, and efficient services from the local level. It indicates that by institutionalizing a federal democratic system, leadership development takes place from the grassroots level.

People Participation in Planning

Locals governments prepare annual plans for things like the construction of new roads, the provision of clean drinking water, irrigation, sanitation, etc. The federal democratic republic had a bottom-up approach to planning while the unitary system had a top-down approach. In fact, at the municipal level, elected officials are choosing both their own ideas and those of others at the local level of the backward society. Similarly, women are more accountable for their responsibilities than men when given the chance in underdeveloped societies. Women now have access to opportunities and skills at the local level and thanks to them for their active participation in planning and good management in development activities (Thapa, P. personal

communication, 18 August 2022).

The public is actively engaged and enjoys taking part in the creation of laws and territorial development. For the social and economic development of the municipality, Besishahar Municipality have enacted 71 pieces of legislation (Dahal, 2022). Similarly, 69 laws have been passed within the five-year term by the Madi Rural Municipality of the Kaski district (Dahal, 2021). Local lawmakers are close to the public and benefit from their knowledge and ideas while drafting laws. On the other hand, local representatives are more accountable to the people and responsible for enacting laws that address the local concerns by using their constitutional rights. Similarly, the local government chose the infrastructure development as the road connecting the ward to the local center and the communities to the communities, people prioritize irrigation, electricity, clean drinking water, health, and education. It indicates that by institutionalizing a federal democratic system, leadership development takes place at the grass roots level. Since the local government serves as the people's government and efficiently delivers goods and services at the local level, the provincial government is not required (Baral, R. personal communication, 18 August 2022). Through local governance, the people are empowered as a whole. People were involved in the planning, budgeting, monitoring, and evaluation. So, Nepal does not require three levels of government. Province level is not required, as it is not connected to the people (Bhattarai, B. B. personal communication, 18 August 2022). Through local governments, communities of individuals gather and assemble to choose their plans. The local people, thus, is actively involved in social, political, and economic development.

Provincial Government

Both the province and the federal system are new to Nepal. It is now the cornerstone of the provincial level. It contains 21 constitutional rights that are stipulated by Nepal's constitution, in addition to concurrent rights. However, members of the House of Representatives are already in charge of key ministries in Nepal. The first and subsequent province chief ministers have already led Nepal's house of representatives.

We express our determination to create an equal society based on the concepts of proportion by embracing multi-caste, multi-lingual, multi-cultural, and diverse geographic specificities, by eliminating discrimination based on class, caste, region, language, religion, and gender, as well as all forms of racial untouchability, and by protecting and promoting unity in diversity, social and cultural solidarity, tolerance, and peaceful attitudes. (Constitution of Nepal, 2015)

Although there is substantial discrimination between the governing class and the public in practice, it is constitutional in spirit high-ranking political figures and their entourage, as well as their ties to their allies and family. Similar to how government officials at high levels utilized the nation's resources, so did the Nepalese police, army, and bureaucracy. The level of living of people has not changed, or to put it another way, their quality of life has not changed.

A federal system is essential for Nepal's overall growth and the empowerment of its citizens. The federal system is the mandate of the democratic movement. The constitution of Nepal is currently a federal democratic republic. According to the constitution, Nepal will have three levels of government that will share power and responsibility among them. All three tiers of government were formed after the first election in 2017. Following then, these new-status governments began to exercise their dominance over their respective regions. People closely monitor all government operations and they are not satisfied by the performance of the provincial government. So, there is a common voice that governments at the provincial level are not required.

The term "unitary system" refers to the concept that all authority and power be used by the centre. When the King last assumed executive power in Nepal, the entire power structure was royal. Power and authority in the federal system have not yet been decentralized to the local level. The foundation of the federal system is the province. We created Nepal's three-tiered governance and power distribution system in the constitution. Because we already have an institutional power center, fully constitutional rights are still not now being exercised. In actuality, the federal government does not have complete control over security and civil service administration at the provincial and local levels. The scope of central leadership is limited, and they have not institutionalized provincial and local level leadership development at the grassroots level. Within five years, just 56 legislations have been passed in the province of Gandaki (Chuhan H., personal communication, 28 July 2022).

The left-wing government creates plans and projects such as "one constituency, one road and one home with clean water". Agriculture, tourism, forestry, and environment are all important issue for the nearby governments. However, social media did not help the federal system to evolve well. Still, the federal government still holds all the power (Basnet R., personal communication, 28 July 2022).

The central theme of Marxist ideology is the populist dictator. Therefore, during the first ever election after federalism, we, the leftists, were in power. Leftists won nearly two-thirds of majority in the federal, provincial, and local governments. We worked to provide

basic public goods and services to the people while also attempting to raise their standard of living. Huge disparities between the rich and the poor can be seen in the words "Huda Khane and Hune Khane." All people are created equal, and the people's movement calls for equal access to resources in the fields of employment, health, and education. (Adhikari, N., personal communication from October 22, 2022).

The Nepalese unitary form of governance failed to address the main problem and voice of the people in rural places. The provincial government is currently in close proximity to the people, a noteworthy accomplishment for Nepal. Leftists were given their first opportunity to lead a provincial government. The people disliked the unitary form of administration. In a federal system, more things are good while fewer things are negative.

A federal system is one that values inclusive democracy and has long practiced power sharing. By planning, passing laws, and influencing local issues, we are engaging and empowering. Our town is relatively backward in terms of social movements, and we feel that women and members of certain ethnic groups are particularly underrepresented at the grassroots level of policymaking (Jalari, S. personal communication, 18 August 2022). Currently, the state province solely includes the heads of political parties. They are heavily influenced by central power politics and do not stand firmly in the issues of the province. Even, the election process is more expensive (Phari, D. personal communication, 18 August 2022). Simple and sincere candidates are not given a ticket. Since the values and standards of the federal democratic republic do not exist, the representatives are not autonomous and elected members utilize budgets in an improper way. We should have established good policies instead of distributing funds to members of parliament (Gurung, M., personal communication, 18 August 2022). Province is not required, and local governments alone should be powerful because there is no proof after five years (Thapa, K., personal communication, 18 August 2022).

The responders' thoughts and the aforementioned reasoning are divergent. The leaders of the political parties are at the provincial level, but they are not getting enough favor from the general public and intellectuals. They argue that local governments are sufficient to meet public needs at the grass roots level and province governments are a burden to the nation, it has been used just as a tool to manage cadres by the major political parties.

Comparison Between Local and Provincial Governments

Table 1

Relation to the People as per the Level of Governments

Local Government	Province Government
22 constitutional rights	21 constitutional rights
Council enacted laws.	Legislation produced laws
Changed from the prior stature	New monument
Accountable to the people	People elected body
They were elected	
People to need a strong local organization	Program to link people is lacking
Local officials who are accessible to the people	It is not required.
People Government	Governmental parties are in power
It will fulfill people's interests	It is a burden to the people

Table 1 displays the rights and obligations of municipal and provincial government actions throughout the last five years. Through the constitution, the federal system distributes power and authority to the various levels of government. The new constitution of Nepal has been proclaimed by Nepal's three-tier government. Local-level first federal practice is preferable. However, the province is not ideal because it is disconnected from the public. The responders represent various government levels as well as various segments of civil society, including intellectuals. The province is the foundation of the federal system, according to the elected representatives. The argument put forth by some representatives is unnecessary. There is adequate local government to facilitate the easy supply of products and services to the people. Nepal's economic development makes the province burden some. Only members of political parties are given numerous opportunities. The quality of people's lives, however, has not changed. Similar to how social security and social justice are not available to the whole public, neither are education and health.

It is a brand-new idea and Nepali political suture. It started with the unified people movement in 2006. Because the unitary system has been used for a long time and is not competitive in Nepal. People are aware that a unitary system does not distribute power fairly and that a single, powerful central government has systematically discriminated against them. Different types of people, including those who identify as caste, religious, or linguistic minorities, are not properly included in government policymaking or development initiatives.

In accordance with the 2015 Nepali Constitution, the people are in charge. Thus, starting

with the constitutional assembly elections in 2008 and 2013, as well as the local elections in 2017, the people have been exercising their sovereign rights. The three types of governments are given more power by the federal political system through power sharing. Long before decentralization, local administrations operated as a unitary organization. Although the provincial governments are a new organization, they are ineffective in Nepal. It is in no way related to the people and their plans or objectives. It has made an effort to establish its basis. Nepal's provinces are its "white elephant" (don't try to solve it; just guard it). Why our governance structure lacks effective management. The province is now the only activist management center for political parties that governs without a vote. People are currently paying double and triple taxes as a result of tax increases. The people oppose it, and its job is beginning with a poor massage and a lack of connection to the public and government (Baral, B. personal communication, 18 August 2022). Similarly, to this, it is not necessary for intellectuals to observe and research at the provincial level. Although it is viewed as a pillar of the federal system by the major political parties. Independent political parties' issues at the provincial level are not yet necessary outside of the election of 2022, such that national support and the emergence of national parties in parliament were provided by the people through their vote. The biggest burden on Nepal is the 550 members of the provincial parliament, the 7 provincial cabinets, their secretariats, and the employment they require as key government servants. The province and its administration are only under the control of political parties, which burdens the Nepali people and economy.

> We decided not to cast our ballots in the provincial elections. However, we do want to strengthen the current provincial organization even though we lack electoral symbols. We haven't talked about abolishing the provincial system, as the Rastriya Swatantra Party (RSP), which won the most recent election in 2022, had suggested. Democracy is puzzled by the fact that, despite its problems, things might get better. It's interesting to note that these young leaders are affiliated with a newly formed political party called, which hasn't yet adopted a clear stance on federalism and secularism, two fundamental principles of Nepal's democracy and constitution. When asked why he didn't vote for provincial candidates, he cited the fact that his party wasn't competing in those elections and his concerns with the existing provincial structure. 22 November 2022 (Kathmandu Post)

Nepal benefits more from a two-tier federal government because it is a developing nation. Their natural resources have not been utilized for their over-all development. Only main political

parties at the provincial level, as well as the management of minor political parties' leaders and members. It has invested a significant sum of money in the operation of the secretariat as well as the administrative system for the Ministries. Despite the fact that they misused a large sum of money and spent it nationally, they did so (Gurung, G. personal communication, 18 August 2022). The 2015 Nepali constitution outlines 21 rights as well as concurrent rights for provincial governments. First impressions of the provincial government are not favorable; they have not successfully connected sound public policy to the needs of the people. Similar to it, a common adage is "morning show the day." Province of Gandaki has no distinct tasks that are open to the public. Local government does, however, provide goods and services to the people on a regular basis. Despite the ineffectiveness of the provincial government (Sharma, P. personal communication, 18 August 2022).

In reality, political party operations do not adhere to democratic values and standards of the federal system. Similarly, they are not accountable to the people and only knock on doors during election seasons. The representatives of the widely elected parties then demonstrate their standing as feudal lords (Dawadi, D. individual correspondence, August 18, 2022). Provincial legislators, who follow federal legislators at their own pleasure, distribute the 50 million budget in their constituent area. The Gandaki province government once refused to handover the budget in the name of province parliamentarian. However, the budget did not pass without it. The job of a legislator is not to persuade the people that laws are necessary for progress (Sundash, S.K., personal communication, August 18, 2022). The vehicle tax management system law passed by the Gandaki province has resulted in a 400% tax hike. As a result, the Gandaki province passed a law that only served to increase interest among people. The Gandaki province implemented this unpopular tax, and the Gandaki province government corrected and revoked that law.

Province government is not vital in the Nepalese context is the general perspective of the public. Because it has not created effective sustainable development policies. Every day, thousands of young people relocate to foreign countries in search of employment. The Nepali government has not established any industries to generate jobs. According to some elected provincial members, province governments are unnecessary and a burden on Nepal. Although the government has made three attempts, none of the problems have been fully resolved to the public's satisfaction.

CONCLUSIONS

The evolving democratic system works well with a federal structure. In 2015, Nepal, which had previously employed a unitary system, implemented a federal system following the promulgation of the country's new constitution. The local government created laws in accordance with their constitutional rights, which is completely a new practice for Nepal. 22 rights were granted at the local level by the constitution. It serves as the foundation for a democratic federal republic. Compared to the prior political system, it is far better. Because there was no local authority or power. Only decentralization and delegation of power to the local level are used by the center. Solely two of the respondent's views on the federal system, according to the researcher's empirical knowledge, are true in Nepal, since the province level only affects political parties and has no direct contact with the general people. However, in the province of Gandaki, favoritism and nepotism were utilized to abuse power. The people's actual experience is superior than corny capitalism's overall influence on the formation of provincial governments. Power sharing is merely a theoretical concept; in reality, no one is connected to any plans, projects, or implications.

The prior unitary system of government was managed by the federal government, along with the civil service, Nepal police, and Nepali army. Despite the province level's new structure and the addition of more delegates, there is little actual data to support good policy and lawmaking. The provincial government has not yet established direct contact with the public. By the way, the province has taken more time to pass laws and lacks a successful framework for connecting workers and people. In a similar vein, the public observes that they only employ outdated national resources and facilities. And they don't run any programs to draw in newcomers. Similar to how they were, they also benefit from favoritism and nepotism.

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An assessment of the Determinants of Inflation in Nepal: A study between 1974/75 and 2021/22

*Hom Bahadur Chhetri

ABSTRACT

Inflation is one of the important and interestingly touchy macroeconomic variables that influences other macroeconomic variables such as investment, consumption, saving and others. Therefore, it has become renewed interest in recent years mainly for both developed and developing countries. This paper examined the short-run and long-run relationship between inflation and its determinants in Nepal using time series data over the period of 1974/75-2021/22. The ARDL bound test approach to co-integration and error correction model have been used to examine the long-run and short-run relationship between variables. The results from ARDL bound test approach to co-integration show that broad money supply, Indian inflation and budget deficit have a significant positive effect on inflation while exchange rate negatively affect it in the long-run. The result from error correction model also found that Nepalese inflation and Indian inflation are significantly and positively related even in the short-run. However, real GDP affects inflation negatively as expected but it is statistically insignificant. A corollary of the results is that broad money supply, budget deficit, Indian inflation and exchange rate are the main drivers of inflation in Nepal.

Keywords: ARDL, broad money supply, budget deficit, inflation, Nepal

INTRODUCTION

A modest level of inflation is considered to be desirable because it creates positive effect on investment, production and employment. Maintaining low and sustainable inflation brings stability to financial systems and encourages sustainable economic growth over the longer run (Fergusson, 2005). However, High and variable Inflation is a worldwide macroeconomic problem that leads to unpredictability in income and expenditure decisions of the different groups of the society; deforms economic growth; reduces savings and investments; and rises cost of capital and exacerbates the income inequality in society (NRB, 2007). High inflation adversely impacts the overall growth of the economy, generating motivations for households

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and firms to curtail their horizons and to spend resources in handling inflation risk rather than directing on the most productive activities (Iqbal, Nadim & Akbar, 2022). One of the main objectives of both developed and developing economies is, therefore, to attain a moderate level of inflation (Tufail & Batool, 2013). The major factors that determine inflation in the economy are broad money supply, budget deficit, imported prices from international trade, gross domestic product and exchange rate of country's currency.

Money supply has a direct and proportional relation with inflation assuming the level of real output is constant and the velocity of money is constant (Fishers, 1911). Monetarists, believe that the money supply is the main determinant of economic growth in the short run and the price level over longer periods. Inflation is always and everywhere a monetary phenomenon and it occurs in the economy when the rate of growth of the money supply exceeds the growth rate of the real aggregate output in the economy (Friedman, 1963). Because of the inflationary consequences associated with excessive expansion of money supply, Friedman (1963) asserted that monetary policy should be done by targeting the growth rate of the money supply to maintain economic and price stability. If the government finances a deficit budget either by printing of money by the contra bank or through the open market operations, both of the measures change the nominal money supply in an economy and therefore change the price level (Duodu et al., 2022).

Due to the diverse views among these school of thoughts, numerous scholars have conducted comprehensive examinations of the connection between inflation and its determinants in both developing and developed nations, yielding varied outcomes (Neupane, 1992; Khatiwada, 1994; Mathema,1998; Chaudhary and Xiumin, 2018; Kovanen, 2011; Adu & Marbuah, 2011; Nasir et al., 2020; Nguyen, 2015; Duodu et al., 2022; Byanjankar, 2020; Pandey, 2005; Poudyal, 2014; IMF, 2014; NRB, 2007).

In the context of Nepal, successive governments have made efforts to maintain a single digit as well as stable inflation rate with the aim of improving the wellbeing of citizens and boosting savings and investment decisions in the economy. However, these efforts have proven unsuccessful, as the inflation rate in the economy continues to fluctuate and remains near to double digits. The inflation rate of Nepal was 12.6 percent in 2008/09. This rate had decreased and reached to 8.3 percent in 2011/12. This rate had again increased and reached to 9.9 in 2012/13. Again, this rate had decreased to 7.2 percent in 2014/15 and increased to 9.9 in 2015/16. This rate had fall drastically to 4.2 percent in 2016/17 and remained stable until 2018/19. Again, this rate increased to 6.1 percent in 2019/20. In 2021/22, it has remained at

6.3 percent. This clearly shows that inflation has not been stable and hence could badly affect major economic decisions.

The issue of inflation has consistently captured the attention of numerous researchers in the field of economics as it influences major decisions such as investment, consumption and savings among others (Duodu et al., 2022). Additionally, inflation can lead to the failure of important policies or projects because it disrupts budget allocation, ultimately hindering the economic progress. Considering the adverse consequences of inflation is likely to have on economies as well as the livelihood and welfare of citizens, the dynamics of inflation, money supply and budget deficit have continuously received attention from both theoretically and empirical perspectives (Adom et al., 2018). Different scholars employ different methods to describe the phenomenon of inflation. Due to the complexity and uncertainty of inflation, different theories have been formed according to the influential factors of inflation (Wang, Wang, & Skare 2022). Price stability is the prime objective of monetary policy. It is not possible to carry out effective policy without understanding the main determinants of inflation. Therefore, it is necessary to study the relationships between inflation and its determinants in order to formulate correct policies regarding in Nepal. In this context, this paper aims to examine the short-run and long-run relationship between inflation and its determinates in Nepal.

The rest of the paper has been structured in the following manner: section 2 discusses the data and methods used in the study; section 3 presents the empirical results and the discussion and finally, section 4 concludes the paper with some policy implications.

DATA AND METHODS

Theoretical framework as well as data and estimation techniques are presented in this section. This section is divided into three parts. Theoretical framework and model specification are presented in the first part of this section. The second part presents estimation strategy, whereas data and variable description are shown in third part.

**Theoretical Framework and Model Specification**

Inflation can be defined as the persistent and appreciable rise in the price level of goods and services in an economy. It is measured as the percentage change in the general price level of goods and services. The quantity theory of money states that inflation in the economy entirely depends on money supply. Inflation can be set in motion when budget deficits are

financed by the monetary authority, like the Central Bank. This can happen through means such as seigniorage, which involves the central bank creating money, or by supporting government expenditures through open market operations, which involve acquiring interest-bearing government securities. Due to more than two-thirds of Nepalese trade concentrated with India, the past studies showed that as inflation occurs in India it carries over in Nepal trough trade. Therefore, this study has taken Indian inflation rate as an independent variable. Furthermore, this study has also considered real GDP and nominal effective exchange as independent variables. The conceptual framework has been shown in the following figure 1.

Figure 1

Conceptual Framework
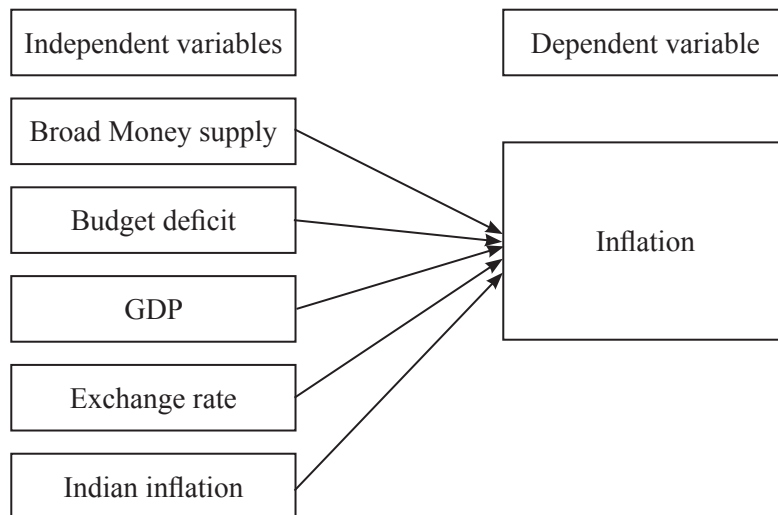
This study has taken inflation as a dependent variable whereas broad money supply, budget deficit, Real GDP, Indian inflation and exchange rate are also considered as independent variables in the model. Based on Duodu et al. (2022), the study has specified the following functional form:

$$LnNCPI_t = f\,(LnM2_t,\ LnBD_t,\ LnRGDP_t,\ LnNEER_t,\ LnICPI_t) \ldots\ldots\ldots\ (1)$$

Where, $NCPI_t$, $M2_t$, BD_t, $RGDP_t$, $NEER_t$, and $ICPI_t$ represents Nepalese consumer price index, broad money supply, budget deficit, real gross domestic product, nominal effective exchange rate, Indian consumer price index and t denotes time trend. Ln denotes natural log form.

The econometric models of equation (1) can be written as:

$$LnNCPI_t = \alpha_0 + \beta_1\ LnM2_t + \beta_2 LnBD_t + \beta_3 LnRGDP_t + \beta_4 LnNEER_t + \beta_5 LnCPI_t + \varepsilon_t \ \ldots\ldots\ (2)$$

α_0 and εt are the constant and the stochastic error terms, respectively, such that the error term is

normally distributed with a mean of zero and a constant variance [$\varepsilon t \sim N(0, \sigma^2)$]. Again, the β's (1, 2, 3, . . ., 5) are the respective coefficients of the variables to be estimated, and ln denotes the natural logarithm.

Estimation Strategy

The study adopts the Autoregressive Distributed Lag (ARDL) bound test propounded by Pesaran and Shine (1999) and Pesaran et al., (2000) to test the hypothesis regarding the relationship between inflation and its determinants. As a prerequisite of the ARDL model, stationarity properties of the sampled variables in the study are checked to avoid inconsistent and unreliable results. The ARDL is applicable when the series are integrated of order zero [I (0)] (or at the level) or order one [I (1)] (or at the first difference) or fractionally (at the level and the first difference). The parametric Augmented Dickey-Fuller (ADF) test (Dickey & Fuller, 1979) and the non-parametric Phillips and Perron (1988) are employed to establish the stationarity properties of the series. In these tests, the null hypothesis of unit root (non-stationarity) is tested against the alternative hypothesis of stationarity (no unit root). The rejection (non-rejection) of the null hypothesis implies that the series are stationary (non-stationary) within the sampled period. After establishing the stationarity properties of the series, the cointegration test of the variables is tested using ARDL bound test developed by Pesaran and Shine (1999) and Pesaran et al., (2000) to decide whether there exists a long run relationship among the variables. The ARDL model used in this study can be written as:

$\Delta LNCPI_t = \alpha + \sum_{i=0}^{P}(\Upsilon_{1i}\Delta LnNCPI_{t-i}) + \sum_{i=0}^{P}(\Upsilon_{1i}\Delta LnNCPI_{t-i}) + \sum_{i=0}^{q}(\Upsilon_{2i}\Delta LnM2_{t-i})$

$\sum_{i=0}^{q}(\Upsilon_{2i}\Delta LnM2_{t-i}) + \sum_{i=0}^{r}(\Upsilon_{3i}\Delta LnBD_{t-i}) \sum_{i=0}^{s}(\Upsilon_{4i}\Delta LnRGDP_{t-i}) \sum_{i=0}^{t}(\Upsilon_{5i}\Delta LnNEER_{t-i}) +$

$\sum_{i=0}^{u}(\Upsilon_{6i}\Delta LnBD_{t-i})$

$\sum_{i=0}^{r}(\Upsilon_{3i}\Delta LnBD_{t-i}) + \sum_{i=0}^{s}(\Upsilon_{4i}\Delta LnRGDP_{t-i}) + \sum_{i=0}^{t}(\Upsilon_{5i}\Delta LnNEER_{t-i}) + \sum_{i=0}^{u}(\Upsilon_{6i}\Delta LnBD_{t-i}) + \beta_1 Ln CPI_{t-1} + \beta_2 LnM2_{t-1} + \beta_3 LnBD_{t-1} ++ \beta_4 LnRGDP_{t-1} + \beta_5 LnNEER_{t-1} + \beta_6 LnICPI_{t-1} + \varepsilon t \ldots\ldots\ldots 3$

Where, β_1, β_2, β_3, β_4, β_5, and β_6 are long-term coefficients and Υ_{1i} Υ_{1i}, Υ_{2i} Υ_{2i}, Υ_{3i} Υ_{3i}, Υ_{4i} Υ_{4i}, Υ_{5i} and Υ_{6i}, Υ_{5i} and Υ_{6i} represents short-run dynamics and ε_t = represents a random disturbance term.

H0: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$ (there is no cointegration)

H1: $\beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq \beta_6 \neq 0$ (there is cointegration)

The F-test will be employed to test co-integration among the variables. If the computed F-value exceeds the F-value for the upper bound, then the null hypothesis of no co-integration is rejected, otherwise the test was inconclusive. (Pesaran et al. 2001).

The short-run dynamics of the variables was described by employing the Error Correction

Model (ECM). The ECM representation was specified as follows:

$$\Delta CPI_t = \alpha + \sum_{i=0}^{p}(\mu_{1i}\ \Delta InCPI_{t-i}) \sum_{i=0}^{p}(\mu_{1i}\ \Delta InCPI_{t-i}) + \sum_{i=0}^{q}(\mu_{2i}\ \Delta InM2_{t-i}) \sum_{i=0}^{q}(\mu_{2i}\ \Delta InM2_{t-i}) +$$
$$\sum_{i=0}^{r}(\mu_{3i}\ \Delta InBD_{t-i}) \sum_{i=0}^{r}(\mu_{3i}\ \Delta InBD_{t-i}) + \sum_{i=0}^{s}(\mu_{4i}\ \Delta LnRGDP_{t-i})$$
$$\sum_{i=0}^{s}(\mu_{4i}\ \Delta LnRGDP_{t-i}) \sum_{i=0}^{t}(\mu_{5i}\Delta LnNEER_{t-i}) \sum_{i=0}^{t}(\mu_{5i}\Delta LnNEER_{t-i}) +$$
$$\sum_{i=0}^{u}(\mu_{6i}\Delta LnICPI_{t-i}) + \sum_{i=0}^{u}(\mu_{6i}\Delta LnICPI_{t-i}) + \mu_7 ECT_{t-1} + v_t \ ....\ (4)$$

Where μ_{1i}, μ_{2i} …. μ_{6i} are the short-run dynamic coefficients of the model's convergence to the equilibrium and μ_7 is the speed of adjustment parameter, indicating how quickly the series can come back to its long-run equilibrium. The sign of the coefficient must be negative and significant.

This study has employed three diagnostic tests after ARDL bound in order to identify whether the models were correctly specified or not. Breusch- Godfrey Serial Correlation Test, Breusch-Pagan –Godfrey Test and Jarque- Bera Test have been carried out to test whether the model has serial correlation or not, whether the model has heteroskedasticity or not and whether the model has normality or not respectively. The stability test of the model and the stability test of the individual parameter have been carried out by plotting cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of residuals (CUSUMQ).

Data and variable description

Annual time series data on sampled variables from 1974/75 to 2021/22 have been used to address the objective of the study. The web sites of Nepal Rastra Bank, Ministry of Finance of Nepal and World Bank have been used as the tools and methods of data collection. It is assumed that data are valid and reliable because they are collected from responsible ministry, the central bank of Nepal and the world bank. Excel 19 and EViews 12 version software have been employed to run ARDL model. In short, the description of variables, measurement, notation, source, unit and expected signs have been shown in Table 1.

Table 1

Descriptions of Variables

Variables	Measurement / Proxy	Notation	Source	Unit	Expected sign
Inflation (Dependent Variable)	Nepalese consumer price index	NCPI	Nepal Rastra Bank	natural logarithm form, base year 2010/11	-
Money supply (First Core Independent Variable)	Broad money supply	M2	Nepal Rastra Bank	natural logarithm form (Rs. million)	Positive

Budget deficit (Second Core Dependent Variable)	Total tax revenue minus total expenditure	BD	Economic survey of Nepal	natural logarithm form (Rs. million)	Positive
Gross domestic product (First Control dependent Variable)	Real gross domestic product	RGDP	Economic survey of Nepal	natural logarithm form, base year 2010/11 (Rs. million)	negative
Exchange rate (Second Control dependent Variable)	Nominal effective exchange rate	NEER	Nepal Rastra Bank	natural logarithm form, base year 2010/11	Positive / Negative
Indian inflation (Third Control dependent Variable)	Indian consumer price index	ICPI	Word Development	natural logarithm form, base year 2010/11	Positive

Source: Various Publications

RESULTS AND DISCUSSION

This section has discussed the trend analysis, descriptive statistics and empirical results of the study. This section is divided into two parts. The first part of this section presents the trend analysis and descriptive statistics of the variable used in the study while the second part presents the results of empirical analysis.

The trends of money supply (M2), budget deficit (BD), inflation (NCPI), RGDP, NEER and ICPI over the study period are shown in the figure 2. It is observed that RGDP, BD & M2 have a steady upward trend over the study period. However, ICPI, NCPI & NEER, have been fluctuating over the years, but shows an upward trend. The summary of the descriptive statistics in terms of mean, standard deviation, skewness, kurtosis, Jarque-Bera and linear correlation are reported in Table 2.

Figure 2

Trend Analysis of Broad Money Supply, Budget Deficit, Indian Inflation, NEER and Real GDP with Inflation in Nepal
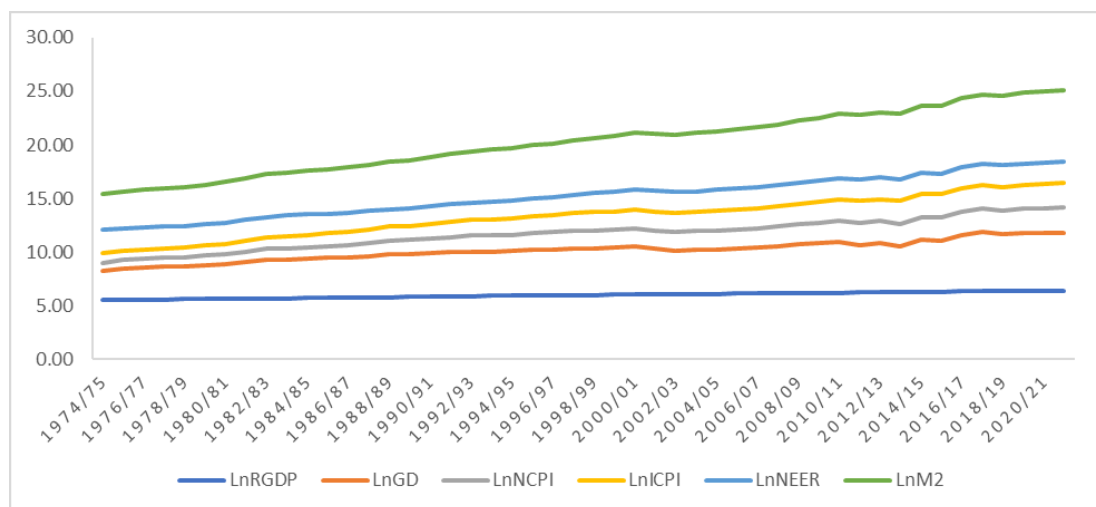
Table 2

Summary of Descriptive Statistics

Variables	LnNCPI	LnM2	LnBD	LnRGDP	LnNEER	LnICPI
Mean	3.63	11.69	9.60	13.72	4.35	3.68
Median	3.83	11.84	9.68	13.75	4.52	3.84
Maximum	5.31	15.52	12.62	14.74	4.97	5.20
Minimum	1.75	7.63	6.22	12.76	3.67	2.00
Std. Dev.	1.11	2.32	1.58	0.61	0.33	1.03
Skewness	-0.21	-0.05	-0.03	-0.02	-0.68	-0.14
Kurtosis	1.84	1.86	2.74	1.77	2.23	1.76
J-B	3.02	2.60	0.14	3.02	4.92	3.20
Probability	0.22	0.27	0.14	0.22	0.08	0.20
Pair-Wise Correlation						
LnNCPI	1	-	-	-	-	-
LnM2	0.99	1	-	-	-	-
LnBD	0.94	0.98	1	-	-	-
LnRGDP	0.99	0.77	0.77	1	-	-
LnNEER	0.06	0.11	0.01	0.02	1	-
LnICPI	0.99	0.99	0.98	0.79	0.10	1

From Table 2, it is observed that money supply (M2), budget deficit (BD), Indian inflation (ICPI), real GDP, exchange rate (NEER) and Nepalese inflation (NCPI) have mean (standard deviation) values of 11.69 (2.32), 9.60 (1.58), 3.68 (1.03), 13.72 (0.61), 4.35(0.33)

and 3.36 (1.11) respectively. The maximum (minimum) values for money supply (M2), budget deficit (BD), Indian inflation (ICPI), real GDP, exchange rate (NEER) and Nepalese inflation (NCPI)are 15.52 (7.63), 12.62 (6.22), 5.20 (2), 14.74 (12.67), 4.97 (3.67) and 5.31 (1.57), respectively. In all, it is observed that the sample variables do not deviate much from their respective mean values as indicated by the standard deviation values. Furthermore, the values for the Skewness, Kurtosis and the Jarque-Bera show that the data is normally distributed. Turning to the linear correlation, it is observed that except NEER money supply (M2), budget deficit (BD), Indian inflation (ICPI), real GDP and Nepalese inflation (NCPI) have a strong positive correlation with inflation. The results from the ADF and P-P unit root tests are reported in table 3.

Table 3

Stationary Test (Unit Root Test)

Variables	ADF Test		P-P Test	
	I(0)	I(1)	I(0)	I(1)
LnNCPI	-1.19	-5.38*	-1.004	-5.56*
LnM2	-2.08	-4.87*	-2.12	-4.94*
LnBD	-2.60	-8.82*	-2.26	-8.82*
LnRGDP	-3.60**	-4.40*	-3.50**	-8.36*
LnICPI	-1.54	-4.69*	-1.70	-4.73*
LnNEER	-2.07	-6.13*	-2.19	-6.24*

Note: (*), (**) & (***) show 1%, 5% and 10% level of significance respectively.

From the results, both tests confirm real GDP is stationary at its level data [I (0)] and first difference [I (1)]. However, money supply (M2), BD, NCPI, NEER and ICPI are all stationary at the first difference [*I* (1)]. This implies that some series are stationary at [I (0)] and some are at [I (1)]. Due to the presence of mixed orders of integration [I (0)], [I (1))], an appropriate method of analyzing the long run relationship between variables is Autoregressive Distributed Lagged (ARDL) bounds test (Pesaran et al., 2000). Therefore, this study used ARDL bound test approach to examine the cointegrating relationship among variables under study. Following the confirmation of stationarity properties of the variables, the study proceeds with the Autoregressive Distributive Lag model of cointegration.

The calculated F- statistics, the lower bound critical value I(0) and upper bound critical value I(1) are presented in the Table 4. Calculated F-statistics is compared with the Pesaran et al. (2001) critical value.

Table 4

Bound Test Results

Variables	F-Statistics	Co-integration	Lag Optimal
F (LnNCPI , LnM2,	9.30	Co-integration	(1, 0, 1, 0, 0, 0)
LnICPI, LnBD	Critical value	Lower bound I(0)	Upper bound I(1)
LnRGDP, LnNEER)	1%	2.25	3.26
	5%	2.67	3.78
	10%	3.59	4.98

Note: (*), (**) & (***) show 1%, 5% and 10% level of significance respectively.

The calculated F-statistic is 9.30 which is greater than upper bound critical values at 1, 5 and 10 percent level of significance. This implies that the null hypothesis of no co-integration among the variables is rejected. Therefore, there is cointegration between inflation, broad money supply, Indian inflation, budget deficit, real GDP and exchange rate in the long-run i.e., these variables move in the same direction in long-run.

The estimated long-run coefficients are presented in table 5. The coefficients of money supply (M2), real gross domestic product (RGDP), Indian inflation (ICPT) and exchange rate (NEER) are positive and statistically significant as expected.

Table 5

Estimated Long-run Coefficients

Dependent Variable: LnNCPI

Variable	Coefficient	Standard Error	T- Statistics
LnM2	0.23*	0.07	3.18
LnBD	0.02***	0.015	1.75
LnRGDP	-0.09	0.22	-0.43
LnNEER	-0.16*	0.02	-6.27
LnICPI	0.64*	0.11	5.53
C	0.79	2.37	0.33

Note: (*), (**) & (***) show 1%, 5% and 10% level of significance respectively.

The long-run elasticity of M2 is 0.23 which indicates that money supply is positively related to inflation and inflation increases by 0.23 percent as money supply increases by 1 percent. Similarly, long-run elasticity of BD is 0.02 which is positive as expected and statistically significant indicating that which implies that on an average, as BD increases by percent this increases inflation rate by 0.02 percent in Nepal for the sample period. Moreover, the long-run coefficient of Indian inflation (ICPI) is 0.64 which shows that Nepalese inflation

increases by 0.64 percent as Indian inflation (ICPI) increases by 1 percent. The negative and statistically significant long-run coefficient of exchange rate (NEER) suggests that the devaluation of currency by 1 percent decreases inflation by 0.16 percent. However, real GDP is negative as expected but statistically insignificant. Table 6 reports the short-run coefficient estimates obtained from the ECM version of the ARDL model.

Table 6

Estimated Short-run Coefficients and Diagnostic Tests

Dependent variable: LnNCPI

Variables	Coefficients	Standard Error	T- Statistics
D(LnICPI)	0.70*	0.05	13.54
ECM (-1)	-0.70	0.08	-8.66
Diagnostic tests			
Serial Correlation	F(1, 38) = 1.07 [0.30]		
Normality	0.05[0.97]		
Heteroscedasticity	F(7, 39) = 0.66[0.70]		
R^2	0.99		
Adj. R^2	0.99		
F- Stat.	15900*		
DW- Stat.	1.67		

Note: (*), (**) & (***) show 1%, 5% and 10% level of significance respectively.

As expected, Indian CPI has a positive impact on Nepalese CPI in the short run. The short-run elasticity of Indian CPI is 0.70 and is significant 1 percent. This shows that a 1 percent increase in Indian CPI results in a 0.70 percent increase in Nepalese CPI. The ECM coefficient is - 0.70 and is statistically significant at a 1 percent level of significance. This shows that short-run disequilibrium on the system converges to equilibrium at a speed of 70 percent per annum.

The study also carried out all diagnostic tests such as Breusch-Godfrey serial correlation test for serial correlation, Breusch-Pagan – Godfrey test for heteroskedasticity test and Jarque-Berra test for normality. The result of Breusch-Godfrey serial correlation test showed that there is no serial correlation because p value is greater than 5 percent and this accepts the null hypothesis of no serial correlation. The result of Breusch-Pagan –Godfrey test of heteroskedasticity showed that there is no heteroskedasticity because p value is greater than 5 percent and this accepts the null hypothesis of no heteroskedasticity. The result of Jarque –Bera test of normality showed that there is normality in residuals because p value Jarque –

Bera test is greater than 5 percent which accepted the null hypothesis of there is normality in residuals. The results of diagnostic tests indicated that the model was correctly specified. The results of diagnostic tests show that there is no serial correlation, no heterscedasticity and there is normality in residuals. The results of R squares and F-statistics showed that the model is well fitted.

The stability test of the model as well as individual parameters were carried out by plotting cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of residuals (CUSUMQ). The results of CUSM and CUSUMQ for model 1 and 2 are shown in Figures 3. In both models, the residuals are within the critical bounds at the 5 percent significance level which indicated that the model was correctly specified and stable.

Figure 3

Plot of CUSUM and CUSUMQ
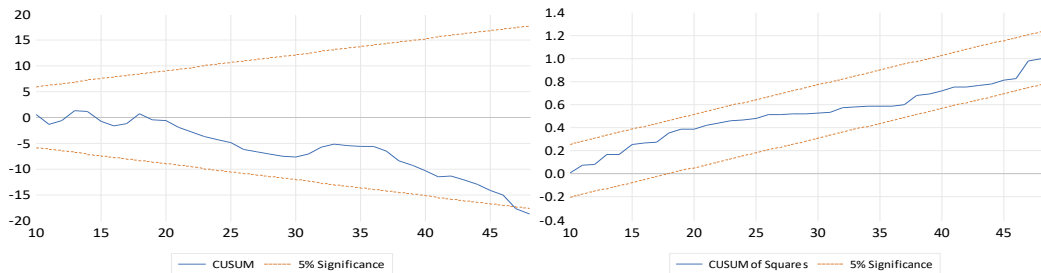
Source: Author's Calculation

Note: The straight line represents critical bounds at 5 percent level of significance.

In both models, the residuals are within the critical bounds at the percent significance level which indicated that the model was correctly specified and stable.

CONCLUSIONS

Using annual time series data over the period of 1974-2021/22, this study has explored the relationship between inflation and its determinants in Nepalese economy. The ARDL model has been employed to decide whether there exists a long run relationship among the variables. Similarly, the Error Correction Model (ECM) has been used to test the short-run dynamics of the variables used in the study. The results from the ARDL bound test show that inflation, broad money supply, Indian inflation, budget deficit, real GDP   and exchange rate are cointegrated i.e., there is a long-run relationship among the chosen variables. The study also found that broad money supply, deficit budget and Indian inflation exert a significant

positive effect on inflation, whereas exchange rate has significant negative relationship with inflation. Similarly, the result from ECM shows that Indian inflation has a significant positive effect on inflation even in the short-run. However, real GDP does not have any significant effect on inflation.

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Research Article

Factors Influencing Students' Dropout in Bachelor's Program in Kalika Multiple Campus, Pokhara

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ABSTRACT

Students' dropout is one of the major phenomenons in higher education. This article primarily aimed to explore the factors influencing students' dropout in the bachelor program of Kalika Multiple Campus, Pokhara and identify the reasons behind it. A descriptive design had been taken to describe the dropout rate and fifteen dropout students of bachelor's degree faculty of education were selected as the respondents through judgmental purposive sampling procedure. Unstructured telephone interviewing was used as the tool for collecting the required information. This study bases on the theoretical tenets of Maslow's Hierarchy of Needs, Motivation and Engagement, and Cognitive Load Theory. This study found that the main reasons of students' dropout explored from student-related indicators were their low academic achievement in examination and irregularity in class; campus-related indicators were lack of academic support, feedback, motivation and encouragement from teachers, and problem of institutional information system; and lastly, family-related indicators were lacks of financial support from home and, different family problems. The implication of this study is to solve the problem of students' drop out specifically in Kalika Multiple Campus and generally in the development of higher education programs in Nepal.

Keywords: cognitive load, dropout, hierarchy of needs, higher education policy and motivation and engagement.

INTRODUCTION

Dropping out in higher education is a global phenomenon and it affects virtually in all universities (United Nations Educational, Scientific and Cultural Organization; 2004). That is why higher education institutions have researched the kinds of drop-outs, their causes and consequences ever since the early 20th century and in particular since the 1970s. Duran Aponte and Pujol (2012) argue that university drop-outs can be classified under one of three heads: voluntary (voluntary or forced drop-out); temporary (whether initial, early or late); scope

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(internal, institutional or from the education system). However, research currently under way on the phenomenon tends to focus on initial or early voluntary drop-out (that is to say, during the first year of university). That is because this is when most drop-outs tend to occur (Castano et al.; 2004, Willcoxson; 2010, Belloc et al.; 2011). Also, for practical reasons most studies focus on internal drop-outs (or change of degree) and institutional drop-outs (where students leave the university concerned but do not necessarily stop studying, whether at a university or other institution). There are various types of opinion on factors influencing dropout rate in higher education in Nepal that create a debate on whether college education should be in open learning model or not. Some people argue that college education should be skill based or technical. The current high college drop- out rate is likely harmful to both students and the economy. So, this study tries to explore the factors which affect dropout rate in bachelor's degree in Nepal.

Higher Education Policy

Higher Education (HE) is the sign of economic and social development in the country. It helps in preserving and developing the historical and cultural heritages of the nation (UGC Annual Report, 2018/19). Similarly, it helps in producing competent manpower in the global context and it promotes research in the different areas of education. As per the multi-universities policy adopted by the Government of Nepal, altogether eleven universities and six academies, as equivalent to deemed universities, are currently in operation (UGC Annual Report, 2018/19).

The Goals of Higher Education (UGC Report, 2021) are:

- Producing capable, scientific, innovative and globally competent and research oriented human resources who can successfully lead diversified sectors to construct knowledge based society and economy through access and enhanced quality of higher education (8.5).
- Enhancing in all layers and types of education by developing criteria and standards based on national and international experiences and practices. (8.10)

With the increase of colleges, the number of university constituent campuses has reached 137. Whereas, there are 508 communities and 780 private colleges affiliated to universities. Thus, the total number of colleges has reached 1425. The number of students leaving the country in search of quality education and subsequent employment is increasing due to the lack of quality of education and the opportunities to study technical subjects. The data of 2017/18 B.S. shows that 60000 students left the country for higher education abroad. This

figure will reach 90000 if those students who have gone to India for higher education is added. This has led to an increased flight of huge amount of capital to foreign countries. Unless quality education and assurance of employment is not available within the country, the trend of students leaving the country to pursue higher education abroad is less likely to abate.(UGC Annual Report, 2018/19).

As the innovation in HE is concerned, the research, development, and innovation as well as the establishment and operation of the QAA system are the milestones for the overall quality enhancement of the HEIs and their education in the country. In relation to impart innovative higher education, the policy has focused in the coordination by the higher education commission to conduct the following seven different types of studies:

- • - Agriculture and forestry
- • - Water resources and hydroelectricity
- • - Natural disaster management
- • - Climate and balance in natural environment
- • -Biodiversity
- • - Tourism and mountaineering
- • - Natural heritage, culture and tradition

Thus, quality higher education is an innovation in Nepalese higher education sector (Higher Education Policy, 2072 BS).

In the context of Nepal, most of the higher educational institutions have been facing the problems of students dropping out. Previously, no researches had been conducted on students' dropout in the context of faculty of education. So, this study will focus on the dropout problem and the best strategies for building an early warning system that can signal which factors/ institutions are most in need of controlling dropout problem. On the other hand, the study will also be helpful for the guardian of the students to understand the internal and the external reasons of dropout and to give them an idea about their role to minimize drop out at different levels of students. An effective measure to control drop out will significantly improve our overall education system and the nation will be benefited from it. Kalika Multiple Campus has also been facing students' drop out as one of the major issues without completing their bachelor's degree. Therefore, this study will be a bridge to fulfill the gap by investigating the factors influencing high dropout in Kalika Multiple Campus.

Maslow's Hierarchy of Needs

Maslow's Hierarchy of Needs theory is that every person has basic needs that must

be met. Within the campus building, the students' needs are what educators are striving to accomplish. These needs are self-actualization, self-esteem, love and belongingness, safety and security, and physiological. According to the theory, the higher education institutions should fulfill the needs of students to minimize dropout rate (Maslow, 1943, 1954).

Motivation and Engagement

It is a theory that grew out of researchers Edward L. Deci and Richard M Ryan's work on motivation in the 1970s and 1980s. According to motivation theory, theorists within the field of psychology have conducted studies on motivation in order to learn about human behavior. Throughout these studies they have found ways to encourage positive behaviors as well as eliminate negative behaviors. Educational psychologists have used these studies to get a deeper look at what motivates students to learn. They have identified that the motivation to learn is broken up into two groups--intrinsic and extrinsic. Intrinsic motivations is earning to learn for natural reasons, self-fulfillment, and to master the skill. Extrinsic motivation is desire to perform for an incentive or specific outcome (Huitt, 2011). Educators often try to learn as much about student motivation and student engagement in order to improve student achievement.

According to Glasser (1998), behaviors are chosen, and as humans we are driven to meet five basic needs: love and belonging, survival, freedom, power, and fun. The construction of these five necessities forms the core for behavior and motivation of a person. Students store pictures in their brains that create their "quality world," and individual needs can be satisfied only by creating those pictures, choosing to act, at that time, the way they think will fulfill their needs as shaped by these pictures.

Motivation plays one of the largest roles in academic success and completion of graduation. Teachers are one of the leading resources for motivating students, and motivation comes from certain aspects that the teacher portrays such as: teacher body language, behavior, style of instruction, relationships with students, and assignment relevancy.

When searching through the literature linked to campus dropouts, student engagement appeared to be a reoccurring aspect that contributes to the dropout problem. Student engagement is not a solo activity, and it is about interaction and relationship. It involves participation during instruction and campus work along with the overall community life of campus. Behavior indicators of engagement are participation in class, attendance, effort in classroom activities, and low number of disciplinary problems.

Behavioral engagement is another factor that is linked with campus dropouts. If students

are engaged in behaving according to the rules and expectations of teachers and administrators, they are more likely to have higher academic achievement (Hammond, 2001).Other indicators for psychological engagement are interests and enthusiasm, a feeling of belonging, and identifying campus relation with community.

Academic engagement is defined as being actively involved within class. Active participant and consistency in the classroom are interrelated with academic engagement. The combination of behavior in the classroom, dealings with the subject instruction and the teacher are critical to academic engagement. Professional development on how to detect early signs and how to further engage students during instruction can assist in decreasing a lack of academic engagement (Hammond, 2001).

Psychological disengagement involves a feeling of uncertainty. A feeling of "not belonging" and a "dislike in campus" are also indicators of psychological disengagement. He recommended that additional study on those who succeed, in spite of psychological engagement, could provide information on how campus can mediate when there is a lack of belonging and student behaviors and attitudes are poor. (Hammond, 2001)

Engagement portrays that attachment to campus is vital for students to have success in the classroom. Students who feel secluded from parents, teachers, and peers lack any encouraging relationships. Peer groups that unite students and campus have the potential to decrease the dropout rate (Brewster, & Fager, 2000). As research has shown, student engagement is an important and seemingly instrumental issue when looking at factors that cause students to dropout. Higher education institutions need to create favorable environment for students' motivation, good personality, and academic skills in order to minimize dropout rate.

The dropout problem is a complex and multifaceted problem that is not easily resolved. An analysis of research showed that student engagement and motivation play huge roles in academic achievement. Engagement can be broken up into four different categories. These categories are academic engagement, behavioral engagement, psychological engagement, and social engagement. The research showed that engagement in campus was what kept students motivated to learn. As soon as disengagement began, then the downward spiral is what causes students to fall behind and eventually leave campus. Understanding what causes the different types of disengagement and how to prevent them from occurring are the stepping stones for solving the epidemic of dropouts. Motivational theories also support the need to create environments that encourage successful students. Motivational theories can show how some educational practices are detrimental to students' futures.

Cognitive Load Theory

Cognitive Load Theory states that learning is initially processed in working memory (Swelleret.al 1994). Working memory is short term, low in storage capacity and can only process a very limited amount of new information at a time. Learning complex or technically demanding material requires building mental models or cognitive schemas about the subject being studied or the skill being developed over time. New material processed in working memory is progressively added or incorporated into these schemas. The schemas or mental models provide a knowledge structure into which the new learning can be fitted and integrated. This cognitive architecture is built through a lifetime of learning and experience and serves to free up resources in working memory.

While Cognitive Load Theory has mostly been concerned with how instructional design of learning materials, assessment activities and teaching approaches can ameliorate or mitigate cognitive overload in the learning of new and complex material, it is argued here that it applies equally to the multiple learning tasks that form the early part of the learning journey of a first time learner. It stands to reason that the scale and scope of the new learning required can easily overload learner's working memory.

DATA AND METHODS

The study was carried out in a qualitative research design. The nature of the study was descriptive one. A descriptive approach to research had been taken to describe the dropout rate in bachelor's degree. A descriptive research approach was used to be the most appropriate for the present study for a number of reasons.

For this study, data were collected from both primary and secondary sources. Only fifteen dropout students were the primary source of data. The data from the secondary sources were campus administrative records, research articles, documents, books, journal and researches related to the study.

The researcher selected fifteen dropout students out of forty-four dropout students from bachelor's degree, faculty of Education at Kalika Multiple Campus, Pokhara-14, Kaski, Nepal. Then, the rapport was built with the campus administration in order to choose the subjects through purposive non- random sampling procedure. After the researcher got the detail information and contact numbers of the drop out students, sample population were selected.

Unstructured schedule of telephone interview was used as the tools for collecting the required information. The unstructured telephone interviewed was conducted only with

fifteen dropout students of Faculty of Education, Kalika Multiple Campus, Pokhara. Then, systematically collected data was analyzed, interpreted and presented descriptively.

RESULTS AND DISCUSSION

Structural Overview of Students' Dropout Rate

Kalika Multiple Campus is a community based and leading higher educational institution of Pokhara established in 2048 BS and affiliated to Tribhuvan University. It has been offering various programs like Master in Rural Development (MARD) Master of Business Studies (MBS), Bachelor of Education (B.Ed.), Bachelor of Business Studies (BBS), Bachelor of Arts (BA) in various subjects and in +2 level in Science, Education, Management and Humanities stream and also planning to run Law as well. However, students' dropout rate is increasing every year.

Number of Students Under the Faculty of Education

Table 1

Academic Year 2074 BS. to 2077 BS.

Level	Academic Year	Enrolled Students	Exam form Filled up	Drop out Number	Dropout Percentage
B.Ed. 1st	2074 BS	32	26	06	18.75
B.Ed. 2nd	2075 BS	26	18	08	30.76
B.Ed. 3rd	2076 BS	18	11	07	38.88
B.Ed. 4th	2077 BS	11	07	04	36.36
Grand total	32	-	25	78.12	

Source: Campus Administration

It shows that thirty-two students enrolled in 2074 BS under the Faculty of Education. However, only twenty-two students filled up final examination form and six students left campus in first year. As a result, there was 18.75% student's dropout in first year.

Similarly, twenty-six students enrolled in second year but only eighteen students filled up final examination form and eight students left campus in 2075 BS. Thus, 30.76% students left campus in B.Ed. second year. It is the highest number of year wise dropout rate. In the same way, eighteen students enrolled in B.Ed. third year in 2076 but only eleven students filled up final examination form and seven students left campus. This indicates that 38.88% students left campus in 2076 BS.

Finally, eleven students enrolled in B.Ed. forth year where only seven students filled up final examination form and four students left campus. This situation shows that 36.36 % students left their study in 2077 BS. Therefore, there were thirty-two students in total in the batch of 2074 to 2077 BS but twenty-five students from total number of students left their study during four years period. Thus, 78.12% students left in bachelor's degree under the Faculty of Education. This structural overview shows that dropout rate is serious problem at Kalika Multiple Campus.

Table 2

Academic Year 2075 BS. to 2078 BS

Level	Academic Year	Enrolled Students	Exam form Filled up	Drop out Number	Dropout Percentage
B.Ed. 1st	2075 BS	43	33	10	23.25
B.Ed. 2nd	2076 BS	33	24	09	27.27
B.Ed. 3rd	2077 BS	24	23	01	4.16
B.Ed. 4th	2078 BS	23	22	01	4.34
Grand total	43	-	21	48.83%	

Source: Campus Administration

It shows that forty-three students enrolled in 2075 BS under the Faculty of Education. However, only thirty-three students filled up final examination form and ten students left campus in first year. It is the highest number of year wise dropout rate. As a result, there was 23.25% dropout rate in first year.

Similarly, thirty-three students enrolled in second year but only twenty-four students filled up final examination form and nine students left campus in 2076 BS. Thus, 27.27% students left campus in B.Ed. second year. In the same way, twenty-four students enrolled in B.Ed. third year in 2077 but twenty-three students filled up final examination form and only one students left campus. This indicates that 4.16% students left campus in 2077 BS.

Finally, twenty-three students enrolled in B.Ed. forth year where twenty-two students filled up final examination form and only one students left campus. This situation shows that 4.34% students left their study in 2078 BS. Therefore, there were forty-three students in total in the batch of 2075 to 2078 BS but twenty-one students from total number of students left their study during four years period. Thus, 48.82% students left in bachelor's degree under the Faculty of Education. This structural overview also shows that dropout rate is serious problem at Kalika Multiple Campus but in comparison to the Academic batch 2074 to 2077 BS the number of dropout students is decreasing.

Factors that Influence Students' Dropout

The researchers Wells, Bechard, and Hambly, (1989) created a framework that categorized factors of student dropout into four main categories. The data collected during the interviews were analyzed within this framework. The four categories included: student related indicators, campus-related indicators, family-related indicators and community-related indicators. Here the researcher selected only three indicators except community related indicators.

Student-related Indicators

One of the listed categories of Wells et al, (1989) is student-related factors that the student can control these factors. Student-related factors are most often described as student actions that occur both inside and outside of the campus setting. Disruptive behavior of students that cause them to become less engaged in campus. These factors included areas such as student behavior, academic achievement, and attendance (Wells et al, 1989). The researcher identified the following student-related factors during telephone interviewing:

- low academic achievement (failed in exam)
- unable to take regular class (irregularity in class)
- employment opportunity in village
- getting permanent job
- unemployment problem and inability to pay campus fee
- learning English, Korean and Japanese language for going abroad to study/work
- health problem
- change campus
- involving in business
- not motivated towards study and feeling difficulty
- long distance from home to campus
- getting married, childbearing and child-caring problems

Most of the students start campus with expectations of success. Unfortunately, some of them encounter obstacles or barriers that lead them towards dropping out instead of graduation. This research finds that academic performance is one of the most influencing factors that cause students to quit campus. When respondents were asked about why they left campus, many said that they were unable to take regular classes due to their personal problems and could not regular in class as a result they failed in final examination taken by Tribhuvan University. So, the main reason of dropout explored from student-related indicators was their low academic achievement in examination.

One of the respondents stated that:

> "When I enrolled in B.Ed. first year, fortunately, I was selected in Nepal Army. So I even could not attend in final examination due to my training. However, I am happy to get job in Nepal army and I don't think about my further study."

Another respondent stated that:

> "When I joined in B.Ed. first year and taking regular class, one of my friends told me to learn Japanese language. Then I took Japanese language class and could not regular in my college class. Anyway I took the examination of B.Ed. first year but in result I failed in most of the subjects. I realized that without taking regular classes I could not complete bachelors' degree. He further said that during second year, I got a job in a FM. Radio. I left my study was I failed in most of the subjects in first year."

According to Cognitive Load Theory, learning new material or a skill, for which a schema in long term memory is undeveloped or nonexistent, can cause working memory to quickly overload its limited capacity. This overloading can result in a learner becoming highly anxious and losing confidence, which in turn can lead to the learning process, in effect, freezing and the learner being unable to continue.

Next student stated that:

> "In B.Ed. first year I took regular classes but I could not continue my classes when I lost my mother and my younger sister in a landslide. Then I was badly distracted and I returned my village. Now I am living with my father and brother and I don't think about my study. I am helping my father in our household work and farming."

Another respondent stated that:

> "I got married when I was studying at B. Ed. second year. Then I came in Kathmandu and now I am studying re-joining in BBS first year."

Irregularity in class was another immense student-related factor. In fact, most of the respondents said they frequently missed classes due to various reasons related to their personal barriers. It caused failed in exam. Therefore, irregularity in class also causes low academic achievement and lastly they compelled to leave campus. In relation to irregularity, one respondent who left in B.Ed. third year said that:

> "Initially, in B.Ed. first year, I took regular classes but I could not continue regular classes due to my family problems that I needed to go abroad or got a job. Therefore, I went to Korean language institute to learn Korean language. Fortunately, I was selected to go to Korea in working visa. I was able to take the exam of first year and second year

but my result was poor due to irregularity in class. I thought that without taking regular classes, it was very difficult to complete bachelor's degree."

In this way, the two main factors of dropout according to most of the respondents were:

a. low academic achievement and,

b. irregularity.

However, other influencing factors related to students were: employment opportunity, getting permanent job, unemployment problem and inability to pay campus fee, learning English, Korean and Japanese language for going abroad to study/work, health problem, change campus, involving in business, not motivated towards study and feeling difficulty and getting married, childbearing and child-caring problems.

Campus-related Indicators

Those factors that occur during the campus and are related to the structures and activities within campus represent campus related indicators. These factors include things such as campus climate and learning environment, teacher–student engagement, campus structure, and campus vision. Throughout the interviews, respondents shared information that falls within this category as Wells et al (1989) created the framework. The researcher identified the following campus-related influencing factors during telephone interviewing:

- lack of sufficient guidelines, academic support, feedback, motivation and encouragement from teachers
- problem of institutional information system (such as lack of timely information to fill up exam form, registration form, scholarship form through SMS, telephone, notice board etc
- lack of understanding students' expectations and follow up services from campus administration
- lack of financial support for needy students (such as scholarship)
- difficulty to understand the course (related to teaching-learning strategies)
- program not suitable with expectations
- dissatisfaction towards examination system and library facility
- indifferent behavior of administrative staff.
- at least 75% attendance in teaching practice program.
- feeling burden of practical of different subjects.

The theory behind Maslow's Hierarchy of Needs is that every person has basic needs that must be fulfilled. Within the campus environment, the students' needs are what educators

are striving to accomplish. According to the theory, when students feel like these needs were not met they were more likely to drop out (Maslow, 1943, 1954). When students lack the feeling of achieving their full potential or success, it results in giving up.

HakiElimu (2008), states that quality education is acquired by having colleges with conducive teaching and learning environment, adequate number of teachers, available infrastructure, curriculum that bases on the community needs and proper management and examining systems. This helps to reduce various problems that are common in college such as absenteeism, dropout and other misconducts.

Many reasons given by the respondents came within the frameworks of Well's et al (1989), Maslow's Hierarchy of Needs, and Motivational and Engagement theories. Motivation along with engagement plays a role in student success. Student engagement is about interaction and relationships. It involves participation during instruction and classroom activities along with the overall community life of campus.

Indicators of engagement are participation in campus activities, regularity, effort in classroom activities and cooperation among students and teachers in teaching learning strategies.

Other indicators for psychological engagement are interests and enthusiasm, a feeling of belonging, and identifying with the campus community. Motivation and engagement both can be connected within teaching learning activities. When students lack intrinsic motivation, and they are not engaged in class instruction or classroom activities, they tend to fall behind (Huitt, 2011).

So, the main reason of dropout explored from campus-related indicators was lack of academic support, feedback, motivation and encouragement. In relation to this indicator, one of the informants said:

"I enrolled in B.Ed. first year with full of energies and enthusiasm but when I took regular classes in first year however I remained just passive listener that no teachers asked me whether I understood or not. Most of the teachers came to class with their age long note copy and delivered their lectures and obliged us to copy their notes without any interaction. I knew, I was not perfect at study but I expected to be good with teachers' additional support, motivation, feedback and encouragement but I could not get so. However, I took the final exam of first year but I failed in all subjects except compulsory Nepali. Then I thought that I could not complete bachelor's degree and I left campus."

While Cognitive Load Theory has mostly been concerned with how instructional design of

learning materials, assessment activities and teaching approaches can ameliorate or mitigate cognitive overload in the learning of new and complex material, it is argued here that it applies equally to the multiple learning tasks that form the early part of the learning journey of a first time learner. It stands to reason that the scale and scope of the new learning required can easily overload a learner's working memory.

This shows that teaching learning strategies need to be changed into learner-centered by creating favorable environment with sufficient support, encouragement, motivation and feedback mainly for the students having low academic achievement.

Problem of institutional information system was another immense campus-related factor that was mentioned many times throughout the telephone interviewing. One of the informants mentioned:

"I took the exam of first and second year by taking regular classes. I could not take regular classes in third year due to my family problem. Anyway, I thought I had to take exam. I was in village and I came to campus to fill up exam form but it was too late and I could not fill up the exam form. I did not know about getting chance to fill up exam form even after publishing exam routine of TU. I expected that campus would provide every important notices and information through mobile SMS services because we didn't have internet access in village. Due to lack of form fill up information I was compelled to leave campus in third year."

Another respondent said that;

"I joined in first year but cannot regular in campus class due to my job in my village. However I take final exam and also attend in my practical exam. But when I get my first year result, I just get 12 marks out of 25 in my English practical. Then I ask my English teacher why had he given such low marks in my practical though I got good marks in theory, the teacher replied me as I was not regular in class, I could not get good marks in practical. It makes me too angry towards Campus and the English teacher. So, I don't like to regular my study in that campus."

In this way, the two main campus-related factors of dropout according to most of the respondents were:

a. lack of sufficient academic support, feedback, motivation and encouragement from teachers and;

b. problem of institutional information system.

However, other influencing factors related to students were: lack of understanding

students' expectations and follow up services from campus administration; lack of financial support for needy students; difficulty to understand the course; program not suitable with expectations; dissatisfaction towards examination system and library facility; indifferent behavior of administrative staff.

Family-related indicators

Family-related factors include things like family composition, socio-economic status, and drug use in the home. Parental support, parenthood, and other home life related factors are the very ones that contribute to a student's decision to leave or stay in school/college (Wells et. al, 1989). However, the researcher identified the following family-related influencing factors during telephone interviewing:

- lack of financial support from home
- family problems (such as illness of family members, marriage, pregnancy, child caring, loss of family members etc)
- lack of support, motivation and encouragement from family
- lack of parental awareness towards education
- family obligations
- family migration
- low socio-economic status of family
- lack of favorable environment for study

So, the main reason of dropout explored from campus-related indicators was lack of financial support from home, in relation to it, one of the male informants said:

"I had desire to complete at least bachelor's degree so, I admitted in B.Ed. first year though there were lots of problems in my family. Unfortunately, I lost one of my family members when I was in second year. Then I had to take whole responsibility of family. I went abroad due to financial problem and I stayed in abroad for two years then returned. Now I have been running small business in my village. The main reason I left campus was due to financial problem at home."

Family problem was another significant family-related factor that was mentioned many times throughout the telephone interviewing. One of the female informants mentioned:

"When I studied in B.Ed. first year, I got married. I continued my study up to second year but in third year, I gave birth of a baby. Then I had to spend much time to take care of my baby as well as other works at home. In addition to it, my husband is abroad employee and my family also did not support and encourage continuing my study. So,

the main reason I left campus was due to my family problem."

Another respondent said that;

> "When I was at first year I got married. Due to family financial problem, my husband was in Japan then. So I also start to learn Japanese language and went to Japan. Now, I am living with my husband and my daughter in Japan. The main reason I left campus was my family financial problem and my husband was in Japan.'

In this way, the two main family-related factors of dropout according to most of the respondents were:

> a. lack of financial support from home and,

> b. family problems.

> However, other influencing factors related to family were: lack of support, motivation and encouragement from family, lack of parental awareness towards education, family obligations, family migration, low socio-economic status of family, and lack of favorable environment for study.

CONCLUSIONS

This study had conducted on the basis of the data collected through unstructured telephone interview. After rigorous study and analysis of the collected data, the major students related factors that influence the dropout were their low academic achievement in examination and irregularity in class, campus-related factors were lack of academic support, feedback, motivation and encouragement from teachers; and problem of institutional information system, And the family-related factors were lack of support, motivation and encouragement from family, lack of parental awareness towards education, family obligations, family migration, low socio-economic status of family, and lack of favorable environment for study.

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Motivation and Performance of Employees of Pokhara Based Internet Service Providers

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ABSTRACT

Employee motivation is one of the important factors that can help the employer to improve employees and organizational performance. This research paper aims to investigate the impact of motivation on employee performance in Pokhara based internet provider. This article is based on case study method in which 'Pokhara Internet Private Limited' was selected by following lottery method of sampling. The study sample size was about 90% (103) of the population which was randomly selected from each department of the Pokhara Internet Pvt. Limited with the help of employees name list provided by HR Department. The study applied empirical approach in which a survey questionnaire was used to collect quantitative data. For the fulfillment of research objective various statistical techniques has been applied. The hypothesis was set to test under some constraints. The statistical tool like descriptive statistic and inferential statistics like ANOVA, multiple linear regressions was applied for this regard the famous statistical software named SPSS-20 has been used. The results validated the research questions and proved statistically significant impact of employees' motivation on their performance. Moreover, it is also known that female employees had high level of motivation in the sample institution. .

Keywords: Extrinsic, Employee, Intrinsic, Motivation, Performance

INTRODUCTION

Employees are considered as a very important 'tools' to the business organization to achieve more in their business. Guay et al. (2010) discuss that motivation mentions to the drive essential behaviour. For the organization employee motivation is one of the best policies to improve effective work management between the organization and employees. Motivation is very significant for the organization or management to treasure a method to motivate their workers. When workers realize that their views are considered to be valued it provides them

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an intellect of belongingness which can motivate the employees. Employee performance is a critical component of organization success, and employee motivation plays a significant role in determining the level of employee performance. According to Lai et al. (2019), motivation is a psychological state that drives individuals to take action towards achieving a specific goal or objectives. Motivation can be intrinsic, coming from within the individual, or extrinsic, coming from external factors such as rewards or recognition.

Performance is one of the most important subjects that concern the researchers and administrative leaders alike, this is because the performance reflects the expected result of each activity in organization. Therefore, it can be defined as the way in which employees perform their tasks during the production processes and associated processes by using the available means of production to conduct qualitative approach (Abusharbeh & Nazzal, 2018). Meanwhile, Fadeel (2014) defined it as the way that the organization achieves it goals. He argued that the overall output of an organization results from reconciling many factors such as capital, labour and knowledge. Further, performance is a reflection of the extent to which tasks are accomplished. Performance of individuals is deliberated as what a personnel does and what he does not do. Individual's performance involves quantity and quality of productivity, existence at effort, accommodative and co-operative nature and timelines of results. Individual's performance is essentially prejudiced by motivation as it workers are satisfied or motivated than they will do work more effort and by which performance will increase (Azar & Shafighi, 2013). Shahzadi et al., (2014) also describes in his study that when workers are happy than they will do the job with more importance and try to will do better work which will lead to good performance. Motivated workers are more concerned towards self-sufficiency and are more self-driven is compare to low motivated workers. Moreover, motivated workers are extremely participating and elaborate in their job and work more eager to proceeds duties.

In the classical literature, extrinsic motivation has been characterized as a pale and impoverished (even if powerful) form of motivation that contrasts with intrinsic motivation. Extrinsic motivation is a construct that pertains wherever an activity is done in other to attain some separable outcome. Extrinsic motivation thus contrasts with intrinsic motivation, which refers to an activity simply for the enjoyment of the activity itself, rather than its instrumental value. Employees have extrinsic motivation when they engage in the work in order to obtain some goal that is apart from the work itself. Employees have intrinsic motivation; they search for the enjoyment, interest, satisfaction of curiosity, self-expression, or personal challenge in the work (Amabile, 1993). Deci and Ryan (1985) argue that the main focus of intrinsic

motivation is on the performance of employee task process only.

Neeraj (2014) has focus that motivation is the most important factors influential organizational performance. Employee motivation is one of the policies of managers to increase effectual job management amongst employees in organizations. He further highlighted the employee motivation and performance is key factors in moving a business forward. Owners, managers and supervisors know positive motivation leads to better performance and higher productivity but may rely on the wrong tools that will create dissatisfaction among employees and leads to poor performance. Motivation increases the willingness of the workers to work, thus increasing effectiveness of the organization. Organization goal is to develop motivated employees and support their morale regarding their respective works for better performance.

The intrinsic motivation or motivation without money is the phenomenon in which an individual want to do a task because he or she wants to do it. There are no external pressures on him/her for completing that task and performance better. In an exploratory study by Hennessey et al., (2015), it has been described that motivation caused by intrinsic stimuli. Ali et al (2016) has concluded that employee's performance is closely related to the motivation of the employees. It was found that teacher's motivation had a significant impact on performance. Extrinsic motivation according to Hennessey et al., (2015) basically refers to as the external goal achievement hat motivates an individual to achieve the task. There are number of factors that stimulate the extrinsic motivation. These factors can be categorized as social and environmental as well. Competition, surveillance, evaluation, rewards, control over task engagement and the time limits are all factors that control the extrinsic motivation in any individual (Deci et al., 1999). A study conducted in public middle level technical training institution of Kenya also revealed a strong correlation between employee's motivation and performance (Hennessey et al., 2015).

The famous theories regarding motivation and performance are Hierarchy of need theory (Maslow 1943) which focus that man are wanting being, unfulfilled need motivate employee and need have hierarchy. David McClland (1961) developed Achievement theory' in which he classified the need of employee into three categories viz., N'Ach, N'Pow and N'Aff. Employees are not only motivated by need but by expectation is the notion of Victor H. Vroom's theory (1964). Another theory ERG was developed by C. Alderfer (1961). He recommended human need that is essential to motivate them; it is collectively studied under Existence, Relatedness and Growth. Two factor theories were developed by Fredrick Herberz (1968) that comprises Hygiene and Motivator factors. According to Nguyen (2017) the presence of hygiene factors

will not motivate, but could avoid dissatisfaction, however the absence will surely lead to de-motivation. On the other hand according to Pardee (1990) the presence of motivator factors can lead to an increase in motivation, satisfaction and thus, higher commitment, but the absence of it will not certainly reduce motivation. Koontz and Weihrich (1990) dyed that the notion of equity theory is that employees are positively motivated if they are fairly treated, and they are negatively motivated if they are treated unfairly. Another nominal theory is goal setting theory which believed that motivation and performance are higher when individuals set specific goal. The goal of organization to motivate employee must possess 'SMART' characteristics.

Aryan (2015) has studied the impact of motivation on employee job performance in the Banking sector in India and he explored that employee work performance has a positive effect from both non monetary benefits and monetary benefits. The conclusion of research done by Chin et al., (2016) was that the independent variables (Flexible scheduling, promotion, rewards, training and working environment) have the significant relationship with dependent variable (job performance). Ekundayo (2018) did research on the impact of motivation on employee performance in selected Insurance Companies in Nigeria and his research revealed that motivation was the major factor that affected employee performance. Furthermore, the study showed a strong and positive relationship between motivation of employees and their performance. The study (Mulema 2019) aimed to determine the impact of employee motivation on organizational performance and the major findings indicated that there is a positive relationship between motivation of employee and organizational performance. Accordingly Siddiqui (2019) also concluded that there was a positive relationship of intrinsic and extrinsic motivation of employees with their performance. Chaudhary and Chaudhary (2021) investigated the role of motivation on academic staffs of private school in Nepal and concluded that to mitigate the impact of Covid-19 during and after the crisis, the ground reality of staff's motivation must be taken into consideration. This research recommended that there is a substantial room for motivation in private school, Nepal because role on motivation in school is far from satisfactory. Rachman (2022) has also conducted a research on impact of motivation on performance. It aims to analyze the important role of motivation in improving the performance of company employees with the support of organizational commitment as mediation. The result of the study proves that motivation has a positive and significant effect on employee performance. Motivation-mediated employee success can master intrinsic factors and strengthen the associated extrinsic motivation because high-performance results are supported by affective, continuance, and normative commitment.

The research article is focusing on the motivation and employee performance of internet provider in Pokhara. The primary focus of this study is to determine the impact of intrinsic as well as extrinsic motivation on employee's performance. It aims to examine the impact of intrinsic and extrinsic motivation on employee's performance and further more to examine the relationship between motivation and performance for male and female.

Intrinsic and Extrinsic Motivation on Employee's Performance

The intrinsic motivation or motivation without money is the phenomenon in which an individual want to do a task because he or she wants to do it. There are no external pressures on him/her for completing that task and performance better. In an exploratory study Hennessey et al., (2015), it has been described that motivation caused by intrinsic stimuli. Employee's performance is closely related to the motivation of the employees. It was found that teacher's motivation had a significant impact on performance (Ali et al., 2016).

Extrinsic motivation basically refers to as the external goal achievement that motivates an individual to achieve the task (Hennessey et al., 2015). There are number of factors that stimulate the extrinsic motivation. These factors can be categorized as social and environmental as well. Competition, surveillance, evaluation, rewards, control over task engagement and the time limits are all factors that control the extrinsic motivation in any individual (Deci et al., 1999). A study conducted in Publi Middle Level Technical Training Institutions of Kenya also revealed a strong correlation between employee's motivation and performance (Hennessey et al., 2015). This article raises the following question; to what extend does intrinsic and extrinsic motivation impact employee's performance? The following hypothesis has been developed to address the questions raised in this article.

H1:   There is a significant impact between motivation and employee performance in Pokhara Internet Private Limited.

H2:   There is a significant mean difference in employee motivation and performance between the groups of employees by gender in Pokhara Internet Private Limited.

The following conceptual framework has been developed. The construct under the intrinsic motivation are recognition for achievement, growth, promotion and advancement and the work content. Similarly the construct under the extrinsic motivation are job security, relationship with co-worker, relationship with supervisor and working condition. On the other hand the construct of employee performance are skill enhancement, employee commitment and work life balance.

Figure 1

Conceptual Framework
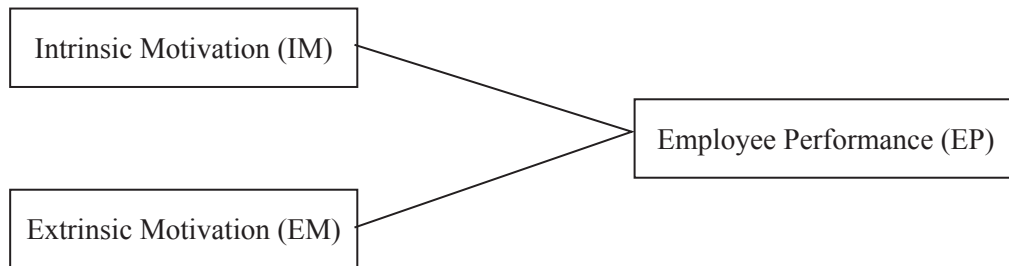
DATA AND METHODS

This study was conducted in Pokhara based internet provider, named Pokhara Internet Pvt. Limited where all the staffs from head office and its branches are included. This study can be useful to develop targeted strategies to improve employee motivation and performance. The study sample size was consisted of 103 employees who represent approximate 90 percent of population which are randomly chosen from every department of the company to shape the study sample with the help of HR department. For this empirical study, a random sampling method has been done from the staffs of sample institution.

This research is basically about the case study of the impact of motivation on employee performance. Survey research design was used for collecting the first hand data. The procedure adopted for this research follows a quantitative approach (descriptive research design) has been used to determine the relationship among the variables and also followed causal research design for showing the impact of independent variables on dependent variable. The major source of data and information used for this study is primary.

Data are collected through survey questionnaire. Questionnaire along with the covering letter were sent to the staff through the email and personal visit. Email addresses of the staff were obtained from the administration. All the questionnaires were closed ended. Demographic information's were collected using nominal question method with number of options to choose. Statements that measure the intrinsic and extrinsic motivation and employees' performance were developed using a five points Likert Scale. A Likert Scale was chosen because respondents can explicitly understand it and scale discriminate well between constructs, their degree of agreement or disagreement.

Based on quantitative data, both descriptive and exploratory analysis was done using the IBM SPSS Statistics version 20 for the preparation of this article. Frequencies, percentages,

means and standard deviations as descriptive analysis were used to describe the samples (demographics) and general results. Beside this, the Cronbach's alpha coefficient (to determine the internal consistency and reliability), Pearson correlation and multiple regression models were used for the further data analysis. Normality test of major variables (intrinsic motivation, extrinsic motivation and employees performance) were done in order to determine whether the data collected were normally distributed or not.

Model Specification

The econometric models employed in this study tries to analyze the relationship between intrinsic motivation and employee performance and extrinsic motivation and employee performance. The following regression model is use in this study to examine the empirical effect of intrinsic motivation and extrinsic motivation on the employee performance in Pokhara based internet provider.

$$EP = \beta_0 + \beta_1 IM + \beta_2 EM + \ldots\ldots\ldots\ldots + \varepsilon_i$$

In this model, the dependent variable is the employee performance (EP) where as the independent variable are consider as intrinsic motivation (IM) and extrinsic motivation (EM) and the error term is also included in the model.

RESULTS AND DISCUSSION

The data collected from the sample are presented in the following table followed by the description of data mentioned in the table.

Table 1

Selected Characteristics of Respondent *N = 103*

Characteristics	Categories	Frequency	Percentage
Age Group	Below 30	66	64.08 %
	30-39	31	30.10 %
	40-49	6	5.83 %
	50 and above	0	0 %
Gender	Male	61	59.22 %
	Female	42	40.78 %
Marital Status	Single	57	55.34 %
	Married	46	44.66 %
Years of Service	0-2	49	47.57 %

3-5	34	33.01 %
6-10	12	11.65 %
10 and above	8	7.77 %

Source: Field survey, 2022

The characteristics such as age, gender, marital status and years of service were asked to the respondents in the questionnaire. Majority of the participant were male (59.22%, n=103), with the age group below 30 (64.08 %, n=103). The majority of respondents (47.57 %, n=103) had 0-2 years of service likewise majority of respondents (55.34 %, n =103) were single.

Intrinsic and Extrinsic Motivation on Employee Performance

Under the employee performance (dependent variable) the construct included are, skill enhancement, employee commitment and work life balance. Like wise the intrinsic motivation comprises the recognition for achievement, growth promotion and advancement, the work content and the extrinsic motivation included the job security, relationship with co-worker, relationship with supervisor and working condition.

Table 2

Impact of Intrinsic and Extrinsic Motivation on Employee Performance

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	8.781	2.627		3.343	0.001
Intrinsic Motivation	0.518	0.099	0.518	5.232	0.000
Extrinsic Motivation	0.264	0.084	0.312	3.152	0.002
R= 0.786 R^2 = 0.618	Adjusted R^2= 0.611		F-Statistic = 81		

Source: Survey & SPSS Calculation, 2022

(Note: B= Beta Coefficient, Sig= Significant *p<0.05)

The regression model seems to be, $EP=8.781+0.518\beta_1+0.264\beta_2$. The results show that both intrinsic motivation and extrinsic motivation have a significant positive effect on employee performance. Specifically, the coefficient for intrinsic motivation is 0.518, indicating that a one unit increase in intrinsic motivation leads to a 0.518 unit increase in employee performance, all other variable held constant. Similarly, the coefficient for extrinsic motivation is 0.264, indicating that a one-unit increase in extrinsic motivation leads to a 0.264 unit increase in employee performance, all other variable held constant. The adjusted R square is 0.611, indicating that the two independent factors account for 61 percent of the effect on

the dependent variable. The relationship's strength and direction has indicated by the value of R that is 0.786. The F statistic of 81 is significant at the 0.05 level, indicating that the overall model is a good fit and that the independent variables are jointly significant in explaining the variance in the dependent variable.

Impact of Motivation on Employee Performance

The current article has developed the linear regression analysis regarding study variables i.e., motivation and employee performance. Motivation comprises both intrinsic and extrinsic motivation.

Table 3

Impact of Motivation on Employee Performance

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	8.781	2.627		3.343	0.001
Motivation	0.264	0.084	0.544	3.125	0.002
R= 0.781 R^2 = 0.610	Adjusted R^2 = 0.606		F-Statistic = 157.987		

Source: Survey & SPSS Calculation, 2022

(Note: B= Beta Coefficient, Sig= Significant *p<0.05)

The combined variable of motivation (Intrinsic & Extrinsic) has a beta coefficient of 0.544, which is significant. The R-squared value 0.610 indicates that the model explains 61 percent of the variance in employee performance and the adjusted R-squared value of 0.606 suggests that the model is a good fit for the data. The F statistic of 157.987 with a significant level of 0.000 indicates that the overall model is statistically significant. The relationship is statistically significance (0.002) at 0.05 levels of significance. Hence the hypothesis of the study is accepted that there is positive significant impact between motivation and employee performance. The finding of the result is matched with the research done by Ekundayo (2018) because his study revealed that there is a strong and positive relationship between motivation of employee and their performance. The study supported the finding of Mustapha (2020) too.

Motivation and performance between male and female

The mean scores differences of male and female employees, and motivation and similarly the mean scores differences of gender regarding job performance was assessed and subsequent alternative hypothesis was tested using independent t-test.

Table 4

Employee Motivation Based on Gender

Gender	Count	Mean	Std. Deviation	t	df	Sig.
Male	61	34.625	0.4417			
Female	42	50.239	0.6409	79.55	102	0.000
Total	103	84.864	1.0826			

Sources: Survey & SPSS Calculation, 2022

The mean score for the male respondents was 34.624, with a standard deviation of 0.4417, while the mean score for the female respondents was 50.239, with a standard deviation of 0.6409. The total mean score for the entire sample was 84.864, with a standard deviation of 1.0826. The t-test revealed a significant different in mean scores between male and female respondents, with t (102) = 79.55, p < 0.001. The effect size was large, as evidenced by the difference in mean scores and the large t-value. There was a significant difference found in the mean score of motivation between male employees and female employees. It was established that female employees had high level of motivation.

Table 5

Gender Differential in Performance

Gender	Count	Mean	Std. Deviation	t	df	Sig.
Male	61	16.3438	2.14134			
Female	42	23.7145	3.10704	77.461	102	0.000
Total	103	40.0583	5.24839			

Sources: Survey & SPSS Calculation, 2022

For male participants, the mean score of the variable is 16.3438 with a standard deviation of 2.14. Similarly, for female participants, the mean score of the variable is 23.71 with a standard deviation of 3.10. The t-test shows a significant difference between the means of the two groups, with a t-value of 77.461 and a p-value of 0.000. This suggests that the difference in mean is unlikely to be due to chance, and that the two groups differ significantly on this variable. It was found that there is a significant difference between the male and female employees about performance.

CONCLUSION

There is a significant positive relationship between intrinsic motivation and performance of employees. The most of the employees showed that extrinsic motivators had a minute

impact on employees' performance. Regardless of this, a positive relationship existed between extrinsic motivation and performance of employees. It is concluded that there is positive significant impact of intrinsic motivation and extrinsic motivation on employee performance in sample organization.

This research exposed that there is a positive relationship between employee motivation and employee performance. On the basis of gender, the motivation in female employees was high as match up to male employees in the sample institution and in the same way the performance of female employee was superior to male employees. It is concluded that the performance of female employees are better than male employees. The study concluded that there was a significant difference in motivation and performance with regard to gender.

Hence there was a significant difference in motivation and performance with regard to gender, female employees were greatly motivated as measure up to male and performance was also better than male employees.

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Factors Affecting on Students' Preference on Choosing Academic Track for Higher Education in Pokhara

*Pusparaj Timilsina

ABSTRACT

The students joining higher education undergo various confusions while selecting academic track for their further studies. Students who pass the tenth grade are supposed to join the subject of their interest in grade eleven or intermediate level which will be the fundamental course for their higher education ahead. Grade eleven is the main entry point for students to establish their future in the higher education. Higher education in Nepal starts from bachelor level but students are supposed to identify their major subject starting from grade eleven. It seems that SEE graduates tend to select the major subject while joining higher education depending on various aspects like intelligence of a person, the interest towards that subject, family, peer pressure, social inputs, guidance from teachers , etc. Family (57.47%) is the major agent to assist students to take decisions for choosing the academic track while joining grade eleven. 92.52% students were not forced but 7.4% students were forced by the parents to choose the major subjects for higher education. It is surprising that 59.19% students wish to go abroad for university level education. The children joining senior high school need to be provided career guidance and counseling before choosing and handling major academic track for their higher education.

Keywords: *Academic track, guidance, higher education, intelligence, motivation*

INTRODUCTION

Intelligence is often defined as our intellectual potential; something we are born with, something that can be measured, and a capacity that is difficult to change. In recent years, however, other views of intelligence have emerged. One such conception is the theory of multiple intelligences proposed by Harvard psychologist Howard Gardener (Susman, 2021). In the context of Nepal becoming one of grade 11 students, they must be ready to decide for their future, it is very important for the students of what will they choose for their higher education. There is fluctuation in number of students in various subjects in higher education

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coming from the past to the present scenario. Students in technical courses are increasing and theory based subjects are facing the lack of students in recent years. This research paper is the answer to the quest to find the reasons of the questions related to the fluctuations in the number of students varying from subject to subject as well as the factors motivating students to choose certain academic track for higher education.

An individual's success depends upon the effort he/she makes to complete the desired task. People can be influenced by the various factors while they have to choose certain things in their life. Students in Nepal are supposed to choose their academic track after they complete their Secondary Education Examination at grade ten. Students choose various subjects depending on the several reasons being led by the psychological and social factors. The leading educationists and the critics believe that multiple intelligence theory of Howard Gardner can the employed while analyzing the students' mentality for joining some specific course. The critics further argue that Gardener's definition of intelligence is too broad and that his eight different "intelligences" simply represent talents, personality traits, and abilities in brief. Gardener's theory also suffers from a lack of supporting empirical research.

The literature review is an important part of analysis that contributes valuable roles during the process of research work. The most important role of review is to generate and collect the ideas from the previous studies in the related literature as evidence to the present study. There are factors that could affect grade 10 students in choosing specific academic track in the academic when they have to join grade 11. This research implies with the factors that may affect those grade ten pass out students that help them in choosing academic track for their career. This research revealed that Nepalese students rely heavily on their family's decision-making.

Students cope by following their parents' advice. They also have to cope with an expectation of financially supporting the family upon completing their education. Studies from other Asian countries also show parents' impact is decision making of students when it comes to students' course preference. It is explained that academics should be integrated with career-focused courses so students can see practical application for the academic courses such as science, maths, management, CTEVT courses, etc.

According to online blog article by Angerman, family background is one of the major factors to examine for those who seek career guidance. When talking about "family background" issues, the extent of influence of the parents and the extended family has on the person in at focus – both at positive and negative ways. This includes the place where he grew

up, the economic realities facing the family, illness, the countries of origin, among others (Angerman, 2009). So, directly or indirectly family has played the decisive role in leading the students to decide their academic track for higher education.

Gardner (2013) asserts that regardless of which subject you teach – "the arts, the sciences, history, or math" –you should present learning materials in multiple ways. Gardner goes on to point out that anything you are deeply familiar with" you can describe and convey in several ways.

Students are found to be motivated to learn when they think that school activities are meaningful. (Brophi, 1988 in Woolfolk, 2014). Woolfolk continues by arguing:

> "When Ball (1987) observed over 200 students at secondary schools, low interest in the subject itself was the most common explanation for school failure. When students themselves were asked to explain why they succeeded, interest was the most frequent explanation" (Brophi, 1988 in Woolfolk, 2014).

There are some studies of motivation and interest for Social Sciences, but they cover only limited motivational factors. Students in campuses and universities are interested in Social Sciences because these subjects could be related to themselves and how the world has influenced them. Educational systems have a strong tendency towards legitimizing the existing social and political order. It is therefore important to examine whether critical perspectives are articulated at all, and exactly what students are encouraged to criticize. (Apple & Gadding, 2009)

Covington and Mueller (2001) made the observation in her dissertation from Sweden; students in schools turn away from global environmental challenges because the problems are overwhelming. There is thus an urgent need to examine more closely, which makes social sciences and other subjects less motivating to students.

In a globalized world students are interested in the big questions and issues, and social sciences probably offer better opportunities to stimulate this than many other subjects do (Oia, 1995). According to Boyer (1987), "in taking a course, one of the life's major decisions is being made. A lot of time, money, and effort will be involved. The shape and excellence of the student's life may rest on the result." It is very difficult for each student to decide the course that they are going to take for their future as it may bring a long time effect in their life.

Student motivation for schooling in general seems to decrease with increasing age (Skaalvik & Skaalvi, 2009; 2011; Ministry of Education and Research, 2011; 2013). In line with this, it is natural to think that students may be less motivated in subjects and content that they see as less meaningful to their self-building project. Thus, various studies has already

been conducted regarding the role of multiple intelligences in the children while they decide for some kind of specific tasks like to choose the subject of their interest for higher education. The grade-10 students are now having their choices that they may choose according to their personal interest, which is very common to take. It equips the students with the knowledge and skills to pursue a better life.

There are factors that could affect grade-10 students in choosing a strand in the academic when they become a senior high school students, there is certain connection with the demographic profiles of the Grade-10 students. This research paper has tried to include the literature related to Howard Gardner's 'Multiple Intelligences'. In this research work various types of intelligences are presented on the basis of Howard Gardner's theory of multiple intelligences. These are as follows:

Bodily-kinesthetic intelligence; Interpersonal intelligence; Logical –mathematical intelligence; Musical intelligence; Naturalistic intelligence; Verbal-linguistic intelligence; Visual –spatial intelligence; Analytical intelligence; Creative intelligence and Practical intelligence

According to the article posted by Adecco (2015), a part of a Swiss multinational human resource consulting company of the same name, states that it is worth the increasing of employers utilizing personality and psychometric testing procedures to analyze the employee's attributes beyond qualifications. It stated in the article "choosing a job to which an individual is inherently suited – rather than just able to convince the interviewer that he/she is interested in the position – will make him/her a happier, more productive employee." From this we can derive a point that the students' career decision-making is most deeply affected by personal factor rather than the school or family factors. The main objective of this study is to assess the factors affecting on students choice of academic track for higher education.qq

DATA AND METHOS

This research work is conducted on students' motivation for choosing the subject that they are studying now. This research also focuses both internal and external factors of students which directly and indirectly effect on their selection of subject. The data were collected from the six different colleges in Pokhara valley including the 174 students from various streams like science, management, law, humanities, education and CTEVT courses. As a researcher I had a direct communication and contact with those grade 11 students in their classroom after I received a permission from the concerned college.

Field visit and questionnaire were the major research instruments for data collection. The primary data were received from the questionnaire and secondary data were received from the concerned college records. While preparing the questionnaire, the researcher conducted a mini survey in a few number of students to find the relevant factors that play major role to students while choosing the specific academic track for higher education.

The questionnaire included both the open and close ended questions were also interrelated to each other. In case of difficulty in understanding, the respondents had a chance to understand the questions be explained by the researcher. Firstly, the researcher obtained a permission from the college authority to conduct his research tasks among the students of concerned colleges. Secondly, he /she explained the purpose of collection the responses and the use of outcome from the research work. Thirdly, the questionnaire forms were distributed among the students and collected once they completed. Sufficient time was allocated for the students to fill up their responses.

The validity and reliability were cross-checked by comparing their responses analyzing the overall answers that they gave. It is also noted that some students didn't even want to answer certain questions being unwilling to reveal their family and personal issues.

RESULTS AND DISCUSSION

The respondents of this research were on going grade 11 students who recently joined that course. Students from various subjects like science, management, CTEVT, law, humanities and education were participated. Total 174 students were asked to fill up the questionnaire form and 47 were from science, 45 from management, 43 from CTEVT, 9 from humanities, 15 from education and 15 from law background. They were asked total 17 questions related to their study and family background and income level. All the participants were recently enrolled in grade 11 course in various subjects in the year 2022 AD. The participants are the 15-17 year old teenagers who have just started grade 11. The participants are from different six colleges in Pokhara valley. The survey was conducted through purposive sampling by taking at least one section of that college so students from various streams would be represented. The received data were analyzed through both qualitative and quantitative methods. The dependent and independent variables are analyzed on basis of their relationship and the effects that they cause.

Table 1

Factors that Motivated Students to Choose Academic Track in Grade 11

Title	Science (47)	Management (45)	CTEVT (43)	Humanities (9)	Education (15)	Law (15)	Total (174)
Family	30(63.82%)	16 (35.55%)	28(65.11%)	4(44.44%)	12(80%)	10(66.66%)	100(57.47%)
Friends	4(8.51%)	5(11.11%)	4(9.30%)	1(11.11%)	0	2(13.33%)	16(9.19%)
Relatives	2(4.25%)	0	4(9.30%)	1(11.11%)	1(6.66%)	2(13.33%)	16(9.19%)
Teacher	4(8.51%)	0	0	1(11.11%)	1(6.66%)	0	6(3.44%)
Other	7(14.89%)	24(53.33%)	7(16.27%)	2(22.22%)	1(6.66%)	1(6.66%)	42(24.13%)

Table 1 shows that out of 174 students, 100 students decided what to join being motivated from the family members i.e. 57.47%, whereas, the least motivating factor was teacher having only 3.44%. The second motivational factor was other/self which was 24.13% followed by friends and relatives 9.19% and 5.74% respectively. If we see the individual subject, students learning science got inspired the most having 63.82% from family and the least was 4.25% from relatives. Surprisingly, no management students had been motivated from relatives or teacher, however, they were inspired by other/self (53.33%) to join management course in grade 11. Students in CTEVT courses were also inspired most by the family having 65.11% which was the highest percent as motivation factor in the above given chart.

Figure 1

Motivating Factors in Choosing Academic Track in Grade 11
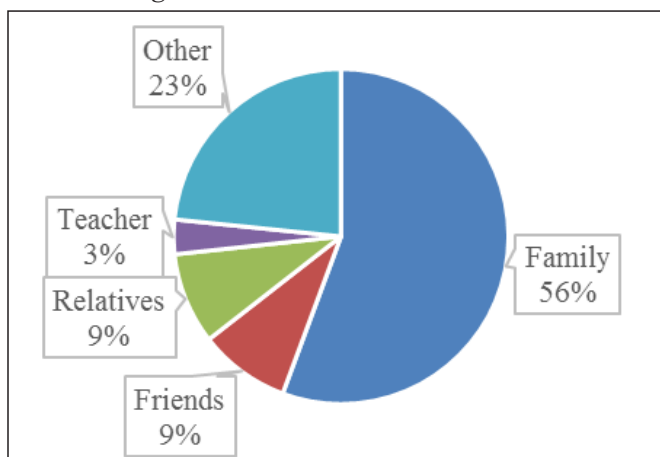
The pie-chart presents the data of how much different factors played roles on choosing the specific subject in grade eleven. Out of Total 174 respondents, the highest percent (56%) students were motivated by family whereas the least motivating factor was found (3%) is a teacher who taught them up to grade ten. Other/self-category falls in second position i.e. 23%.

Surprisingly, the factors like relatives and friends both are 9% each. It shows family was the vital factor in choosing the specific subject in grade 11.

Table 2

Parents' Force on Choosing Specific Academic Track in Grade 11

Streams	Yes (%)	No (%)
Science (47)	2 (4.25)	45 (95.74)
Management (45)	5 (11.11)	40 (88.88)
CTEVT (43)	5 (11.62)	38 (88.37)
Humanities (9)	0 (0)	9 (100)
Education (15)	1 (6.66)	14 (93.33)
Law (15)	0 (0)	15 (100)
Total (174)	13 (7.47)	161 (92.52)

This table presents whether the parents forced their children to choose specific subject in class 11 or not. The data show that Students who joined Humanities and Law were fully motivated to join such courses in grade 11 by themselves. However, the students studying in 1st year in CTEVT courses were forced (11.62%) the most to join that course which was followed by management students with 11.11%. Only 4.25% students responded that they were forced by the parents to join science subject in grade 11 but 6.66% students were forced to join Education faculty. Out of 174 students only 13 students were forced to join specific subject in grade 11 against their interest, whereas, 161 (92.52%) students were given priority on their personal interest on joining certain subject.

Figure 2

Parental Preference on Choice of Specific Subjects in Grade 11
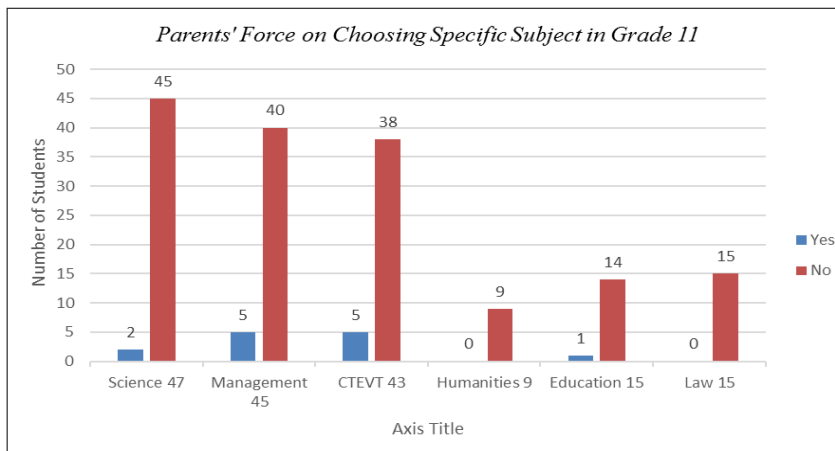
Students see both opportunities and challenges in all the subjects that they are currently studying. When the students were asked the reasons of choosing the specific subject for their currier they replied in different perspectives. Some of the responses given by the students are as follows:

> I see a lots of opportunities in this field like I can be a doctor, nurse, engineer, government employee and many others. After completing this course I want to join forestry for further education. But this course is very difficult to complete if we don't give our full time and focus (S1 from Science).

> We can get various opportunities. At first we can get knowledge about business and other organization. Also we can get various opportunities in job. We can get motivation on business and other sector like market, bank, accounting, etc. But we can face many difficulties while completing this course like difficulties to understand as well as hard numerical problem. We should give much time to understand for further success (S2 from Management*)*.

> Similarly, job opportunities, easy to go to foreign country, self-employment but complicated course (S3 from CTEVT).

> We can easily go abroad, we can easily get job and if we don't get any job, we can do social work. I don't see any difficulties to complete this course (S4 from Humanities and Social Science).

> I can become a teacher, go in public service commission, and receive knowledge, to change the society. There are problems to complete the course due to difficult curriculum, homely problems, difficult to learn in English and unable to manage time (S5 from Education).

> I am studying this course to become independent, to become a lawyer and also live with respect. But this course is not easily available everywhere and need to come from long distance to attend Law classes (S6 from Law).

Overall, the results are remarkably supportive that parental factor has significant effect on choosing what strand they will be able to decide. The findings show that majority of students are affected by school, family and personal factors. Family (57.47%) is the major agent to assist students to take decisions for choosing the subject and teacher (3.44%) is the least priority agent for motivating students on choosing subjects in higher education.

From the data analysis we conclude that 92.52% students were not forced but 7.4% students were forced by the parents to choose the major subjects for higher education. Almost

45.97% students were guided by the teacher to find the suitable course whereas 52.87% responded they did not receive any help while going for certain course in grade 11. While observing the mentality of the students to shift their current course to another course for university education, 12.06% students want to shift in another course in the near future. From the perspective of job availability, 12.68% students are not sure to get a job in Nepal after completing the course.

It is surprising that 59.19% students wish to go abroad for university level education as they think education in Nepal is not based on day to day practice and also does not help for income generation. Maximum 23.40% students from science have more than 8 lakh annual family income, but no one from humanities and law are in this category. This data shows that, most of the parents who have good income and belong to good professions motivate their children to choose science.

It can be concluded that students' career success can be best attained if the right strand suited to their personality, ability and intellect serves as their guide in taking the course for higher education.

CONCLUSIONS

This paper is dedicated to present and discuss the findings regarding the factors that affect students' preference on choosing academic track for higher education. Having both the qualitative and quantitative data together, this study has unpacked the reasons which motivated students while choosing major subjects for higher education. Family decision is found major factor for students to choose science or CTEVT courses, however, management, law, education and humanities students are found self-motivated while deciding the subject for future. It is recommended that the children joining senior high school need to be provided career guidance in choosing and handling certain decisions making with the help of the three factors such as personal, family and school factor. As a student, it is not important to depend on other's decision in choosing an academic strand, so, it is recommended that students can choose wisely as they can so that they will not suffer when thy become a university student. This study further recommends career counseling education to enable students make informed decisions. Students need career guidance to assist them in their choice.

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Medium of Instruction and Achievement in Social Studies among the Students of Gogan Secondary School, Pokhara

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ABSTRACT

This conference paper explores factors involved in the achievement of social studies in the basic level students of Pokhara Municipality. The objectives of the paper are to analyze the different factors associated with students' achievement in learning social studies and to look for associations of mother-tongue education with the students' achievement. A quantitative and applied research methodology with both primary and secondary sources of information was used. The primary data is collected via an online survey using a structured questionnaire. The data has been collected using researcher-administered online counseling and the distribution of online forms. Similarly, secondary data has been collected from different sources. The survey used a population of 155 students from one of the schools in Pokhara, Shree Gogan Secondary School, conveniently selected. The paper provides a theoretical basis showing that language choices are important for raising interest in the subject matter in students, which further increases the chances of attaining better grades. The students' achievement is influenced by several factors, including linguistic, educational, social, and economic expediencies. At the time of the survey, it was observed that the students wanted some changes in the uses of the medium of instruction as well as the method of teaching. The study revealed that most respondents do not find English as a medium of instruction comfortable for study. Most respondents prefer their mother tongue as a medium of instruction. The paper concludes that mother-tongue education should be implemented rather than using an imposed medium of instruction (MOI).

Keywords: *Medium of instruction, mother tongue, secondary education, students' achievement*

INTRODUCTION

Education is a phenomenon that is a historically known method to deliver knowledge and skills from one generation to another. According to Socrates, education means bringing

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out the idea of universal validity which is latent in the mind of every human being. According to Knowles (1975), the main purpose of education is to develop the skills of inquiry and to have the ability to go on acquiring new knowledge easily and skillfully for the rest of their life. Knowles states that there are two approaches to learning, self-directed learning, and teacher-directed learning.

The mediums and methods of delivery of knowledge and skills have never been the same throughout history. Mediums and methods keep changing as per the changes in society. Regarding language facilities, the curriculum and textbooks have been developed in 20 different national languages in Nepal (UNESCO, 2007). Many developed countries, where the number of immigrants is higher, are focusing on providing primary or basic education in the mother language of the children. In Norway, for example, the government has provided its own public school for local communities like the Sami community, with the Sami language as a medium of instruction and the community's culture having an influential role in forming curricula (UNESCO, 2007). The question of providing education in official and national languages has also been mentioned in several reports from African countries. In many reports submitted to UNESCO, language is identified as a key barrier to the integration of immigrant children into the education system. So is the case with countries that have been using medium instruction other than the mother languages of the students.

However, the world is under "linguistic imperialism" (Phillipson, 1992) which is evident in the spread of English as a lingua franca almost all over the world. Lingua franca, according to Richards, Platt, and Weber (1985) as cited in Phillipson (1992), is "a language that is used for communication between different groups of people, each speaking a different language. The lingua franca could be an internationally used language of communication (e.g., English), or it could be the native language of one of the groups". English being the most used lingua franca all over the world, is dominating almost all other languages. In Nepal, where English is the second language of only 0.35 percent population and the mother tongue of almost none of the population, *(Caste/ Ethnicity Report, 2021)* the domination of English in the education system is confusing and questionable. As English is the language of one of the most influential colonial society and India, Nepal's closest neighbor, being under a strong influence by the linguistic imperialism along with the political imperialism for more than 200 years, Nepal could not be away for the linguistic imperialism of English. This is the reason English has been chosen to be taught in the schools of Nepal. English has been in the curriculum of Nepal ever since the establishment of Nepal's first formal school, Durbar High School *(Durbar High*

School, n.d.).

English as the language of instruction was introduced in the Rana regime. As the time went by, the focus on English language became stronger. The love towards English Medium was still prevalent even after the advent of democracy in 1951 A.D. There were 1028 English Medium Schools in Nepal out of 1320 total schools in 1954 A.D. (Pandey et al., 1956). "Most schools devote an unwarranted amount of time to the teaching of languages [foreign, as well as national and mother tongue] . . . Language teaching often occupies 40% to 80% of the curriculum time."(Pandey et al., 1956). The sprouting of institutional schools in Nepal after the downfall of Panchayat in the 1990s, English became the most wanted medium of instruction for the children.

The major goals of education policies in in Nepal was, and is, to impart knowledge of English to children. In this regard, the communities too look at the English proficiency as the achievement of education over the contents of the curriculum. In recent years, the attraction to the English language has become so intense that the community schools run under the supervision of the community and aided by the government are also shifting their language of instruction to English from Nepali. The public are of the opinion that the schools need to focus in English language even if they fail to avail other basic features of education. Just recently, National Curriculum Framework for School Education issued by Curriculum Development Centre, Nepal has directed that the language of instruction to school level can be either English or Nepali or the mother language of the pupils. However, the framework clearly states that social studies and human value/character education need to be taught either in Nepali or the pupils' mother tongue. In this regard, the government has scheduled to implement the framework by 2024 A.D. (*National Curriculum Framework*, 2019).

One of the sectors in Nepal that has had a negative impact of the political unrest, backwardness of society, and government's lack of vision is education, especially the acceptance of or obligation of the English language as the medium of instruction in the primary and secondary schools. The institutional schools which have been widely spread since the aftermath of the restoration of democracy in Nepal in the year 1990 A.D. are teaching almost all subjects other than Nepali in English. So far, the institutional schools have been using English as the medium of instruction, the public could choose the language of instruction for their children as the public schools were delivering their classes in Nepali language. However, in the later years, specifically after the People's Movement II in 2007 A.D., the government-owned and community-managed schools also started teaching the pupils in English. This has

limited the students' right to choose the medium of instruction for education.

Seeing that the institutional English-based schools have been yielding better results in the Secondary Education Examination (SEE) (previously known as School Level Certificate (SLC), there has been a recent trend of changing the community-run schools from Nepali MOI to English MOI. This is happening even before creating the necessary environment for English MOI like the technical infrastructures, proper training for teachers and schools' preparedness to shift to English medium instruction (EMI). This phenomenon is making the students more confused in understanding the subject matter, especially in social studies because their social interaction has been curbed regarding the subject matter as the Nepalese society is comprised of almost no population who speak as their mother tongue, and only 0.35 percent of population who speak English as the second language (*Caste/ Ethnicity Report*, 2021). This ultimately is affecting the performance of the students.

A study conducted in Kenya examined teaching practices at the classroom level and related these practices to learners' performance on a curriculum-based test (Ngware et al., 2014). Almost all instruction was conducted in English, which was not the mother tongue of most of the students. One of the findings was that pupils who spoke English outside school scored significantly higher than those who did not. Ngware et al. (2014) claimed that there are positive effects on learning achievements when learners speak the MOI at home and with friends.

Literature on the loss of first language due to second language domination is known as language attrition. Köpke & Schmid (2004) define attrition as, "the nonpathological decrease in proficiency in a language that had previously been acquired by an individual, i.e., intragenerational loss." This can be a good area of study to understand the students' achievement in one or the other language.

It is essential for government of Nepal, Ministry of Education to find out the output result of students after studying social studies in different medium. It is also the responsibility of every school as the primary purpose of social studies is to help children make informed and reasoned decision for the public good as citizens of a culturally diverse, democratic society in an interdependent world. But the question is which way of teaching social studies teaches students fundamental concepts of culture, economics and politics in effective way? In context of Nepal, is it Nepali language to develop skills to groom students into educated, productive citizen? Or is it English? The objective of the study is to answer the questions and to analyze the effect of teaching social studies in Nepali or English language in Nepal.

DATA AND METHODS

This research is about the students studying in community-based schools. Recently, the community-based schools are also teaching in English medium. A decade ago, all the community-based schools used Nepali as MOI and institutional schools used English as MOI. The study area is the community-based schools of Pokhara valley which are renowned as best community schools in Nepal. Pokhara is one of the popular educational destinations in Nepal. Thousands of students from all over the Nepal came here for the higher education as well as other educational careers. This is why the area of research has been selected.

The students in the community school are taken as the population for the study of effectiveness of Nepali and English languages for teaching social studies. This research, has chosen one school, Shree Gogan Secondary School has been selected. The selection of school is done by researcher's rational preference. The school has students coming from diverse geographical areas and diverse family types. The area where the school is located has varieties of schools i.e., some are community and some are institutional. In this school both medium i.e., English and Nepali are used to teach social studies. Students are divided into different sections. In some section there is English as MOI and in some section, there is Nepali as MOI. 166 students of class nine are the total population. Among 166 students 128 students are using English MOI to learn social studies whereas remaining 38 students are using Nepali MOI.

All 166 students are selected for census method. Due to the ongoing pandemic lockdown and closure of schools for physical module and 11 students could not be accessed by any means. So, the number of respondents is 155 only, precisely 125 from English MOI and 30 from Nepali MOI.

This study adopted descriptive study. The study was mainly based on only primary source of data with structured self-administered questionnaires. To collect information for the research, self-administered questionnaire was used and those lists of questionnaires was distributed directly among the respondent in Gogan Secondary School. Due to the closure of schools in physical mode due to Covid-19 pandemic, the questionnaire was distributed to students through the social studies teachers, who are in a good academic network with the researcher, in appropriate online platform. A cover letter was attached to the questionnaires to introduce the respondents to the research topic to avoid any suspicion or mistrust respondents might have about the study.

Collected data was analyzed quantitatively. Quantifiable raw data was analyzed with simple statistical measures. While preparing the data, simple descriptive statistical tools like

frequency, percentage, and chi-square analysis were used. Likewise, tabulation and graphical representation were also made.

RESULTS AND DISCUSSION

The profiles of respondents indicated that the number of male respondents (35.5%) was almost half the females (64.5%). 92.3 percent of the respondents' family members were reported to have used Nepali as MOI in their school level. Only 7.7 percent used English as MOI. As the total population of our research is currently studying in community-based school, The study displays that almost three fifth population (58.7%) of the respondents have changed their schooling from Institutional boarding schools in their childhood whereas 40 percent have been continuing their study in community-based school and only two respondents reported starting their schooling from mission school.

Table 1

Profiles of Respondents

Socio-demographic Factors	Frequency	Percent
Gender		
Male	100	64.5
Female	55	35.5
MOI of Senior Family Members		
Nepali	143	92.3
English	12	7.7
Type of school in the early years		
Institutional Schools	91	58.7
Community Based Schools	64	41.3
Note: N = 155		

Source: Online Survey, 2021

More than four fifths (80.6%) of the respondents spoke Nepali as their mother tongue. Magar language, Gurung language, Newar language and other languages were spoken as mother tongue by 8.4 percent, 5.2 percent, 3.9 percent and 1.9 percent.

Table 2

Students Classified According to Mother Tongue

Mother Tongue	Frequency	Percent
Nepali	125	80.6
Non-Nepali (Magar, Gurung, Newar and Others)	30	19.4
Total	155	100

Source: Online Survey, 2021

Almost one quarter population (23.9%) of the respondents had gotten their early schooling in Nepali language, 18.7 percent went to English medium schools and almost three fifth population (57.4%) stated that they got education in mixed type of language of instruction.

Table 3

Students Classified According to Language Followed in Early School

Language	Frequency	Percent
Mixed	89	57.4
Nepali	37	23.9
English	29	18.7
Total	155	100

Source: Online Survey, 2021

About four fifth population (80.6%) of the respondents are getting their present classes in English MOI, whereas, 19.4 percent are getting education in Nepali MOI. The following table indicates that the classes are separated in strictly two mediums, namely Nepali and English. However, the students are experiencing mixed type of teaching (As in table 7). This clearly states that the teachers are not strict in the MOI the school administration has assigned to them.

Table 4

Students Classified According to Type of MOI at Present (As per school record)

Language	Frequency	Percent
English	125	80.6
Nepali	30	19.4
Total	155	100

Source: Online Survey, 2021

More than three-quarters (77.4%) of the respondents find the Nepali language more comfortable to understand social studies, whereas only 22.6 percent find English medium

more comfortable. Almost half (49.7%) of the respondents prefer the Nepali language to study social studies. Almost three in ten (29.0%) were okay with whatever language they were taught with and about two in ten (21.3%) preferred the English language.

Table 5

Students Classified According to Their Preferred MOI

Language	Frequency	Percent
Nepali	77	49.7
English	33	21.3
Any Language	45	29.0
Total	155	100

Source: Online Survey, 2021

About 28.0 percent of respondents secured the grade B+, 27.1% secured A, and A+ was secured by 21.3% of all the respondents. Meanwhile, the percentage of respondents getting A+ and A is higher in English MOI whereas the percentage of respondents getting lower grades is higher in Nepali MOI.

Table 6

Students Classified According to Previous Year's Grade of Social Studies

Status	Nepali MOI		English MOI		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
A+	1	3.3	32	25.6	33	21.3
A	5	16.7	37	29.6	42	27.1
B+	11	36.7	33	26.4	44	28.4
B	6	20.0	13	10.4	19	12.3
C+	5	16.7	8	6.4	13	8.4
C and below	2	6.7	2	1.6	4	2.5
Total	30	100	125	100	155	100

Source: Online Survey, 2021

The study demonstrates the association between students' achievement and other variables. The sex, mother tongue, comfortable language, and language preference of respondents are significant to their classroom achievement in social studies whereas their past school MOI and present school MOI were not found to be significant.

Table 7

Analysis of Achievement in Social Studies by Socio-demographic Status

Variable	Pearson Chi-Square		Asymp. Sig.
	Value	Df	(2-sided)
Sex	16.568[a]	6	.011
Mother Tongue	68.925[a]	24	.000
MOI in early schooling	16.499[a]	12	.169
MOI in the present school	17.424[a]	12	.134
Comfortable Language	15.038[a]	6	.020
Language Preference	29.918[a]	12	.003
Mostly followed MOI by family members	12.626[a]	6	.049

Source: *Online Survey, 2021*

The study illustrates that the major reason of respondents' preference of language for their study is that is their mother tongue. More than half the population stated it (55.5%). 45.8% stated that they prefer the language because it is being studied from early childhood. 35.5% want to improve their skill in a particular language.

Table 8

Students Classified According to Reasons of Preference of MOI

Reasons	Frequency	Percent
Mother tongue	86	55.5
Being used for a long time	71	45.8
Want to improve language	55	35.5
Language often used	49	31.6
Perception of a better language	17	11.0
Total	155	

Source: *Online Survey, 2021, Multiple Response*

In the study, it was found that there is a significant association between the use of the mother tongue in teaching with the achievement, which is supported by the report of UNESCO (2007) which states that it is axiomatic that the best medium for teaching children is their mother tongue. Psychologically, it is the system of meaningful signs that in his mind works automatically for expression and understanding. The language is a way of getting better achievement of the students. An increasing number use the English language as a medium of instruction in the latter stages of primary schooling and at pre-school levels although it is not the mother tongue for most learners (Milligan & Tikly, 2016). This theory is not supported by

the research as the MOI used in schooling has no significant association with the achievement of the students. Language preference of students in studying social studies has an association with their achievement in class, which is supported by various research by Cummins, (2000) who stated that the major causal factors in linguistic minority students' underachievement are socio-political: specifically, the coercive pattern of dominant-subordinated group relations in the wider society and the ways. There is a strong trend among parents to send their children to an English Medium school, which is often described as 'English-mania' because it has become a fashion (Shrestha, 2008). This revelation is not found to be significant as the type of school the students go to and their achievement has no significant association. The MOI the children are used to from early schooling has a strong association with their achievement in the higher levels too. This finding is backed by The Ife Primary Education Research Project of Nigeria (Fafunwa et al., 1989). Fafunwa et al., (1989) in The Ife Primary Education Research Project of Nigeria state that one of the most important factors that militate against the dissemination of knowledge and skills and therefore of rapid social and economic well-being of most people in developing countries is the imposed MOI. This idea is backed by the research. The study suggests that we are replacing our terms and terminologies with English terms. This is in line with what Gautam (2019) has to say, "our blind support of English and the Englishisation of our education system is contributing to the loss of many traditional and typical achievements which are found in our land and languages."

CONCLUSIONS

The research has identified that many factors influence the achievement of students' academic careers. The variables under investigation in this study include the use of MOI, and chi-square analysis of different parameters. The study revealed that most respondents are indifferent to the contents being taught in social studies. Most respondents are dissatisfied that they are not studying the subjects in their mother tongue. As per the study, most of the respondents like social studies be taught in Nepali language. According to the study, mother tongue is ranked as the highest priority factor for preference of MOI and perception of people towards a language is the least priority factor. Among the variables examined in the study, students' caste and social status also plays a role in their achievement level. The findings of the study revealed that majority of the respondent find it comfortable if the teachers teach them in their mother tongue. The study revealed that majority of the respondents agree that they feel uncomfortable with the vocabulary being replaced with English terminology as it is

creating a loss of traditional and indigenous technologies. Study revealed that majority of the respondents agree that they cannot connect their textbook knowledge with outer environments. The study concluded that there is significant association between mother tongue and students' class achievement; preference to language, academic qualification of family members, and likeliness of subject have no significant association with the classroom achievement.

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Public Expectation on Strengthening Municipal Governance through Government Preparedness in the Public Service Delivery

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ABSTRACT

With the introduction of the federal government system in Nepal, two local level elections were held which increased the public expectations of citizens although the power sharing and decentralization system at federal state and local level and local level is relatively difficult. The Ministry of Federal Affair and General Administration (MOFAGA) under the Local Government Operation Act has developed a Local Government Institutional Self-Assessment (LISA) model to assess municipal governance. This study examined the preparedness of Pokhara Metropolitan City for addressing the expectations of the people in public service delivery especially with the application of the LISA model and identified the measures of preparedness for the responsive and accountable municipal government. The sample size was 149 individuals selected from three wards (ward 8 in urban, ward 27 is in semi-urban and ward 24 in the rural/periphery area) of PMC where the sample was collected at the 5% level of significance and 8% margin of error. The findings of the study suggested that the assessment of the expectation is the first step and government preparedness should be according to the public service delivery mechanisms so as to strengthen municipal governance in the municipality. The LISA model in municipalities is the baseline for strengthening the municipal governance. The study has been a useful assessment for the capacity development and technical backstopping at the one hand the public expectations at the other.

Keywords: *government preparedness, LISA model, Local Government Operation Act, municipal governance, public expectations.*

INTRODUCTION

There are 761 governments in Nepal (one federal, seven provincials, and 753 local governments). There are six metropolitan cities, 11 sub-metropolitan cities, 260 municipalities, and 420 rural municipalities that constitute the federal government system in Nepal. Nepal has

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made the paradigm shift and transformed from a unitary to a federal governance system from the Constitution of Nepal 2015. Local government is a public institution in a small geographic area, such as a city, town, or county, which are the closest and trustworthy organizations of the local citizen (Acharya, 2018).

By the constitutional assembly, people made the popular slogan *gaun gaun ma Singhadurbar* (Singhdurbar in every village), and the constitution has given considerable power and autonomy to the local governments, from the formulation of their policies and laws, programs and plans, judicial, and authority to generate local revenue and execution and monitoring and evaluation of programs and projects as followed the coordination, collaboration, and co-existence principles constituted by the Constitution (Acharya, 2018). In comparison to the 1990 constitution, the new constitution also introduces measures for greater inclusion of women and Dalits among the marginalized communities within Local governments (TAF, 2017). However, the local bodies are highly politicized, too, and a constant tussle between the chiefs and their deputies, partly because male leaders often question the competence of their female deputies, have hampered service delivery. Pervasive corruption is another drag on their smooth functioning (Baral, 2022). It seems that corruption, dishonesty, and a non-accountable political and bureaucratic system is hindering the newly restructured municipalities. The capacity is a major constraint for local governments, which should be addressed to achieve successful local governance, inclusive citizen engagement, and strong technical, administrative and fiscal capabilities. Lack of local autonomy, political conflict and social class differences, external engagement, conservative hierarchic government bureaucracy are major hurdles to growing capacity (Acharya & Scott, 2022).

As (Gautam, 2016) said, "sadly prolonged political transitions from one system to another, inadequate emphasis on good governance, and neglect of economic issues have been real curse for Nepal's development" (p.350), there is immense possibility of development, Nepal has not been able to harness the economic development and societal transformation. It is said that the lack of good governance in the service delivery and the lack of practice in accountability and the responsibility as a good citizen could be reasons.

The local governments have been run by elected representatives since the first local government election in 2017. The local government people's representatives completed the first five years and the second election was held in 2022. The MOFAGA under Local Government Operation Act has developed a Local Government Institutional Self-Assessment (LISA) model to assess municipal governance. New public management and participatory

governance theory are two important approaches to public administration and governance that have gained a widespread attention in the last few decades. By evaluating the assumptions and practices of the traditional view that generally delays the development of truly participatory democracy, participatory governance seeks to deepen citizen participation in the governing procedure (Fischer, 2015). The Constitution of Nepal, 2015 was enacted with the goal of strengthening and empowering local governments. It is for establishing good governance and developing local democracy in order to alter people's rural livelihoods and ensure long-term economic development (Dhital, 2018). The local government under the federal system has not a long history in Nepal, but within a short period, local governments are in the progress to establish their systems, structures, process, and standards and service delivery mechanism at local level.

According to the World Development Report, 2004, public service delivery is defined as "a set of institutional arrangements adopted by the government to provide public goods and services to its citizens". The scope of this study is to examine the preparedness of Pokhara Metropolitan city (PMC) for addressing the expectations of the people in public service delivery especially with the application of the LISA model and identify measures for the responsive, strengthened and accountable municipal government. The study is also targeted to assess whether the local government's performance is on the right track as pursuant by the constitution and prevailing laws. To study the public expectation and satisfaction through an empirical study, a survey of the citizens who are seeking or receiving services from Pokhara Metropolitan City is carried out. Factors affecting the public expectations in service delivery have been explored and analyzed. Pokhara Metropolitan City was selected purposively due to the researcher's convenience and familiarity.

However, the study is limited to a single metropolitan city – Pokhara Metropolitan city. The characteristics may not be similar to other metro cities. Hence, the findings cannot be generalized due to time and resource constraints. The research is limited to the survey of limited respondents selected randomly and purposively among the visitors in metropolitan and ward offices. The LISA score is taken and analyzed for the fiscal year 2021/022 and 2022/023. LISA is a web-based performance assessment system which is supposed to help the local governments to be more efficient, transparent, and accountable (Kandel, 2021). The LISA guideline 2020 envisages a continuous assessment mechanism to improve the overall performance of local governments. Here, LISA score has been calculated so as to assess the principles and strategies of effective governance for sustainable development. It is believed

that the LISA tool helps to set baselines, identify gaps, plan actions and have comparable data across local governments in the field of public service delivery. It could be the assessment whether the LG is operating in the public expectation line or not.

Following 10 indicators set by the LISA model are analyzed from the point of view of government preparedness and public expectation in public service delivery of Pokhara Metropolitan City.

1. Governance System
2. Organization and Administration
3. Annual Budget and Planning Management
4. Fiscal and Financial Management
5. Service Delivery
6. Judicial Performance
7. Physical Infrastructure Development
8. Social Inclusion
9. Environment Conservation and Disaster Risk Management
10. Coordination and Cooperation

DATA AND METHOD

This research has been designed in an exploratory method. Therefore, it tries to explore the public expectations and government preparedness of Pokhara. Besides, the study is based on a grounded theory model to analyze qualitative data from field-study which covers only the Pokhara Metropolitan City of Kaski District. In the study, the in-depth literature review and in-field research augmented with in-field experience. The research combined a top-down and bottom-up approach, meaning that all stakeholders and interested and affected parties have been represented and further consulted.

Pokhara Metropolitan City is divided into thirty-three wards. The wards are categorized by urban, semi-urban and periphery characteristics. The sample size was 149 individuals selected from three wards (ward no. 8 in urban ward no. 27 is in semi-urban and ward no. 24 in the rural/periphery area) where the sample was collected at 5% level of significance and 8% margin of error using *Raosoft* sample size calculator, considering 95% confidence interval with eight percent margin of error. The LISA score is taken and analyzed for the fiscal year 2021/022 and 2022/023.

The primary data is collected through a questionnaire schedule and field observation.

The questionnaire has been collected by using the qualitative method. The first part of the questionnaire included socio-economic and demographic features of the respondents (service seeker/recipients) like age, gender, indigenous identity, educational attainment of family. The second part of the questionnaire is focused on the quality of service provided from the metropolitan office and ward office to the public. Mainly, the questionnaire, key informant interviews (KII), focused group discussion (FGD), and field observation methods are used for primary data collection. The secondary data is the result and data, which was collected by previous investigators. LISA score of Pokhara Metropolitan City, related books, magazines, articles, reports, bulletins, and newspaper, published, unpublished and official documents of Pokhara Metropolitan city are used for secondary data. The secondary data is collected as per its necessity during the survey period. The SPSS tool has been utilized for the frequency and tabulation.

RESULTS AND DISCUSSION

The study finds higher public expectations towards IT friendly service, paperless service, service according to citizen charter, easiest and minimum service charge, effective queue management system during the service delivery. Although, the metropolitan city is found to be slowly addressing citizen issues regarding service delivery with the limited budget frames. This study confirms that the status of public satisfaction for the services delivered by the metropolitan city is of fair level. There is much room to be addressed by the metropolitan city for enriching the service effectiveness hence to address the expectation level. It is equally necessary for addressing the LISA indicators and uplifting the status by securing a fair score is the need.

Development Expectations

Dhungana (2019) stated that accountability in local governments requires an attention not only to the laws, but also to the practices of civic interaction and the willingness of elected officials and the citizens in this engagement Respondents were asked to identify their development expectations with pre-defined list which includes service delivery according to citizen charter, minimum and affordable service charge, working hour, effective queue management, proper reception and public relation, gradual improvement of office and logistics and not influenced by middleman.

Table 1

Development Expectations on the PSD

Development Expectations	No of Responses	Percentage
Service delivery according to citizen charter	103	69.1
Minimum and affordable service charge	78	52.3
Timely service delivery	73	49.0
Effective queue management	61	40.9
Proper reception and public relation	51	34.2
Gradual improvement of office and logistics	43	28.9
Not influenced by middleman	42	28.2

Note. $n=149$, Based on multiple responses, Field survey, 2020

As shown in table 1, the majority of the responses (69.1%) have development expectations regarding service delivery according to the citizen charter. The study found that minimum and affordable service charge is for another development expectation towards the effective service delivery, the responses (52.3%) have the expectations from their side that the service should be minimum and affordable. Half of the respondents (49%) replied that timely service delivery is another development expectation of citizens. Development projects along with social projects should be completed within a time frame. More than one third (40.9%) respondents replied that effective queue management is a tool of development expectation for public service delivery. Proper reception, gradual improvement of office and logistics and not influenced by middlemen are also the segments of development expectations towards service delivery. From the point of view of the service recipient, the level of expectation met is reported only as 'fair. (See Table 1). The planning and the budget allocation process has been started but still there is enough room to be reformed systematically. In this regard, the Mayor of Pokhara Metropolitan City stated,

> There's a total change in the budget allocation system. Previously, planning used to be according to the budget; nowadays it is quite reversed when there's proper planning then the budget allocation process begins. This new trend has been started in PMC. The most important thing is that we became a citizen of the biggest metropolitan city of Nepal but we lack the 'urban culture'. We have diverse topography having urban, semi-urban and periphery. We are making it remote to near (*Bikat lai Nikat*) by our public services; road connectivity; the 129 KM road connection is joining each and every ward soon.

The effective public services provided by the public institution can turn the remote as near. Slowly, the citizens of the metropolitan city are realizing but it is at a slow pace. Pokhara

Metropolitan City is the largest Metro City of Nepal in terms of area and geographical coverage. There are still some settlements which don't have access to the office of the metropolitan city in a single day's travel. Similar is the statement of the ward secretary of Pokhara Metropolitan City- 24, as he said,

> Our ward is still working in a rural setting, even the Tole Development Organizations (TDO) are under formation. Another problem is the administrative problem. We have one settlement called 'Ban pale' which is the remote part of our ward and metropolitan area too. To settle the project of ten lakh above, people have to go to the metropolitan office which is not an easy move for them. Ward is not fully authorized, it is controlled. And obviously, service to the people is not becoming fast and reliable. This situation will be changed gradually. Otherwise, how can citizens realize the local government?

One executive staff of ward 8 highlighted the public expectation which is rising. This type of expectation is because of the political changes, it is fair. But even the staff are facing obstacles while delivering services, as she said,

> Yes, we found difficulty in public service delivery. People come to the ward office and they say- *"Aba Ta Gaun Gaun Ma Singh Durbar Ayeko Cha"* (the central administrative unit has come to the village level). "It is justifiable when the public demand services from the nearest door. But there are complexities; we are facing these sorts of problems. Sometimes, they come to us showing the chairman's signature and tell us about the work which they are not liable to do. This happens in the case of a vital registration system. If the service seeker conducts any mistake while typing the name or address and other details in the online system, we can't correct it immediately. We need to ask the Metropolitan office and proceed with the changes. We do not have access to and control over the software system. Sometimes, the technical task like land measuring occurs for actual valuation and other recommendations, we are lacking the technical staff. In the absence of technical staff, we are giving approval which is not authentic.

Effective Service Delivery

According to Schedule 8 of the current constitution, the local governments are responsible to provide basic public services such as local service delivery system, local-level development programs and projects, basic and secondary education, basic health and sanitation, regulation of local level markets, environment protection, and biodiversity, agriculture, and livestock and cooperatives, local level physical infrastructure development-road, irrigation; social security of the senior citizen, a person with a disability (PWD), disaster management, watershed,

wildlife, mines conservation and utilization and language, culture, vital registration, CSOs mobilization and dispute management and others.

Table 2

Factors of Effective Service Delivery in PMC

Service Variables	Responses	Percent of Cases
Timely delivery	91	61.1
Digitized service	67	45.0
Transparent revenue collection	58	38.9
Less paperwork	58	38.9
Mobile/Apps Service	57	38.3
Customer friendly behavior of the staff	56	37.6
Quick Service	49	32.9
Use of ICT to get information and service	42	28.2

Note: This table is based on the multiple responses

Source: Field survey, 2020

About 62.1% respondents opine that 'timely delivery' is their first priority so as to make effective service delivery in the Pokhara Metropolitan City which followed by 'digitized services (45%) while 'transparent revenue collection' and 'less paper work' were the same on two fifths (38.9%).Not only this, the mobile/apps services were on two fifth (38.3%) followed by customer friendly behavior of the staff were less than two fifths (37.6%) and then about one third were quick service (32.9%) followed by use of ICT to get information and services were on 28.2 percent (see table 2).

It is found that effective service delivery is an important instrument for public services especially in local government. Here, timely service delivery is considered as the key determinant of effective service delivery and it is applicable in the case of Pokhara Metropolitan city, too. Moreover, transparent revenue collection, customer friendly behavior of the staff, Mobile/ App services are also listed as the supportive determinants. Public wants quick services. ICTs friendly service is also in the list. But to cope up with the changing working environment, there is the lack of sufficient/competent human resources.

The study highlighted major factors associated with the effective public service delivery in Pokhara Metropolitan City, among them 'Timely delivery' is ranked at the top level. There is no variation on any service items except use of ICTs. Regarding digitized service, it is ranked as the second determinant of effective service delivery. The digitized service, less paperwork, mobile apps, customer friendly behavior of staff, quick service and use of ICTs, there were no variations by age group except timely delivery and transparent revenue collection. With

the digitized service, timely delivery, mobile apps, customer friendly behavior of staff, quick service and use of ICTs there was no variation. Only variation occurs on transparent revenue collection and less paper work by location as well as variation occurs on less paper work and customer friendly staff by education (see Table 2).

People from all age groups, gender have a common opinion regarding transparent revenue collection. This is the key to effective service delivery. Less paper work makes service delivery more effective on time. The respondents having university degrees said that use of ICT for the information dissemination could be the main factor in the public services delivery.

The most important aspect of their expectations is the proper and transparent revenue collection system. The local government should implement the service according to the changing scenario. Because, the nature of government under NPM, Obsorne and Gaebler remark "Governance is an act of collectivity solving the citizens' problems. Government is the instrument that the public uses. The instrument is outdated and it is time to remake it."

Considering this context, in the last three years, MOFAGA developed the LISA model and facilitated it through the 'Provincial Centre for Good Governance-PCGG' in practice to improve the performance of the local governments as envisioned by the constitution and Local Governance Operation Act (LGOA). The "LISA guideline 2020" is prepared based on LGOA that made the provision of an annual performance assessment process to improve the overall performance of municipal governance which makes the local government to be more efficient, transparent, responsive, and accountable. It is necessary to understand that public service delivery reveals the relationship between the two sides, one side being of the provider and the second of the receiver. So public service is a mechanism of government to provide its services to the people. The overall LISA score suggests the 'preparedness' of local government for addressing the public expectations as such. The 10 indicators ranging from governance system to coordination and cooperation and their scoring suggest how Pokhara Metropolitan city is preparing its service delivery so as to address the public expectations. The public expectation such as service delivery according to the citizen charter is found high. To address this issue of governance, 'timely delivery' is considered as the topmost factors of effective service delivery in PMC. But when we look at the LISA Scoring of PMC for three fiscal years, the governance mechanism is relatively found low in performance.

Table 3

Overall LISA Score of PMC

Categories	Total	2020/ 021	2021/022	2022/023	Average
			LISA Score of PMC		
Governance System	9	7.75	8	7	7.6
Organization & Admin	8	3.5	3	2	2.8
Annual Budget & Plan	11	5.5	6.5	8.5	6.8
Fiscal & Financial Management	11	3	4.5	5.5	4.3
Service Delivery	16	10	10	12.25	10.8
Judicial work Performance	7	6.5	5.5	7	6.3
Physical Infrastructure Development	13	5.5	4.5	7.5	5.8
Social Inclusion	10	0	3.75	10	4.6
Environment and Disaster Management	9	2.5	3.5	6	4.0
Coordination and Cooperation	6	0	2	4	2.0
Total	100	44.25	51.25	69.75	55.1

Note: This score is based on the digital datasheet MOFAGA, Nepal, accessed on March, 10, 2023

Table 3 shows that the service delivery is increasing by 62.5% to 78.12% which seems satisfactory. Another category is social inclusion in the service delivery, the table shows 100% increment of social inclusion in the PMC. According to the LISA Score, there are other satisfactory performances for example the judicial work performance, coordination and cooperation of the municipal office, fiscal and financial management, physical infrastructure development. On the contrary, the data shows that the governance system decreased in comparison to the previous fiscal year. The administrative and organizational management is not properly handled, it is decreasing and the same is the case in the FGDs conducted in the ward offices. The ward office can't correct the minor mistakes that make vital registration lethargic. Staffs were not seen perfect in computer applications, still the system is digitized which is adding confusion to the general public. It is hampering the services to make it 'paperless'.

Strengthening Municipal Governance

The performance of local governments is a major concern from the federal to the local level as how the municipal government makes them effective, accountable, and responsive governance at the local level. The success or failure of municipal governance is the concern of the taxpayers at the local level, and the provincial, and national stakeholders and development partners.

There are some contradicting policies and guidelines in relation to the natural resources sharing and management through the Pokhara Metropolitan City office. There is still a dilemma on policy implementation, there's confusion whether this is a working area of local level or central government. The physical infrastructure development is the key indicator for the performance evaluation of the local institution. While looking at the score of LISA the infrastructure development is found in slow pace. This particular condition is hampering to achieve the public expectation. The preparedness of Pokhara Metropolitan city is not found as satisfactory regarding the infrastructure development. The major reason behind this is found as the incongruent planning and budgeting. The Public Private Partnership (PPP) Model is designed for major tourism infrastructure development projects, garbage collection and management projects but it is still in the state of limbo. To improve the quality of public service delivery, sustainable service delivery is necessary leading to municipal governance.

According to the Local government act 2074, the local levels are categorically authorized to deliver 61 different services but the metropolitan city provides 64 kinds of public services through ward offices including vital registration (birth, marriage, migration, death), relationship verification, recommendation, authorization, tax clearance and collection, garbage collection, water supply, awareness creation program, infrastructure development etc. Services have been categorized into three characteristics i.e. administrative services, community development and environment and infrastructure development services.

Some of the services i.e., vital registration system, recommendation, registration and land sale/purchase system were digitized. In course of study, the study has gone through some of the focus group discussions (FGDs), and via the discussion with the office staffs of ward offices, study finds that the staffs were not updated much with the digitalized services. In some of the cases of vital registration, minor mistakes in the documents carry much more trouble, the service seekers have to wait long for the corrigendum.

Good governance always prioritized citizen satisfaction. The swift legal procedures, service according to citizen charter, 'paperless' services, timely grievances redressal system,

effective utilization of ICTs in service delivery and proper and transparent revenue collection systems were found to be the factors affecting the citizens satisfaction in PMC. Citizens were averagely satisfied with the existing services of PMC. The average satisfaction level resembles the things to be improved.

CONCLUSIONS

In the respect of Constitution of Nepal, 2015 and Local Government Act, 2017, PMC has made 58 sets of rules, directives, acts, regulations and working procedures so as to bind the public service delivery. More importantly, the metropolitan is working through the E-Governance system which will reduce the rate of corruption. PMC is going to make its own server to operationalize the different official works, too. It is concluded that PMC is directed towards the right track of public service delivery yet there are lots of things to do. For example, the timely updating of human resources with the line of ICTs is the first step. Even the service recipient also has to be aware about the public services. There's the need for systematic supervision, monitoring and evaluation of the public service projects.

The major preparedness of the metropolitan city is focused on public service delivery albeit it is not sufficient. The metropolitan city is providing the vital registration, building map approval and taxation system in the digital way. The recruitment of engineers in each ward for project planning, estimation and supervision is compulsory. However, the technical staffs like junior engineers, overseer are not sufficient in the ward offices. The expected results on the related public service deliveries are yet to be achieved because of the proper monitoring and evaluation system.

To address the ethos of federalism, the effective public service delivery by the immediate municipalities i.e., ward offices is a must. Because these offices are the point of contact for the people having different services ranging from recommendation letters, vital registration and the tax paying. Thus, the two-way capacity development, human resources and the public awareness to the general public are other requirements for effective public service delivery that enhance the charm of federalism and strengthen municipal governance as well. To make the service effective, grievance handling is found to be the most significant factor. Thus, the metropolitan should be serious on the grievance redress process.

The study examined the preparedness of Pokhara Metropolitan City for addressing the expectations of the people and the findings reveals that the essence of federalism is not being realized in the service delivery because at the local level there are the total grievances that

the central government is not decentralizing the power and resources to local level. There is a lethargic process to mobilize the local resources, with the limited budgets and resources as the local government is providing the services to the public. The LISA Score and the observations made in course of the study implies that the programs/ projects implementation is not congruent with the budget and planning. This is the issue related with the internal control or governance mechanism of Pokhara Metropolitan City.

The public expectations towards the local level service delivery are found increasing and government preparedness is relatively found sluggish in manner. Besides, citizen awareness is vital towards the public service delivery and strengthening the municipal governance. While demanding the rights, the citizens also have responsibility to strengthen municipal governance, too.

With the limited resources, the local government is preparing to provide swift and efficient public service delivery to the citizens. To achieve effective public service delivery, the daily check and balance, monitoring system and feedback system through public hearing and other measures should be periodically provided by the citizens, civil societies and the metropolitan city should prioritize its planning, budgeting and actions accordingly. To improve the quality of service, sustainability is necessary. There are some of the implications that the study forwards. First of all, LISA scoring is not a formality, rather it should be followed properly in the planning, implementation, evaluation and monitoring of the public service delivered by PMC. The ward offices should be capacitated to allocate budget and finalize the procurement procedures of the infrastructure and social development projects. For digitization of services, sufficient technical staffs should be hired in all ward offices. Secondly, the public services especially the garbage collection, electricity supply, drinking water supply, education should equally be distributed to all wards. There must be a proper mechanism of supervision, monitoring and evaluation of the development infrastructure as well as of general public services. The metropolitan city should run the general awareness program about the public services, grievances, taxation, revenue collection, budget allocation, etc. Thirdly, making 'urban culture' is the need of a metropolitan city so as to strengthen the municipal governance. For this, the stakeholders such as elected representatives, municipal administration along with bureaucracy and even the consumers or citizens are equally responsible to strengthen municipal governance, they must not forget their roles and responsibilities.

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Water Quality Parameters of Rupa Lake in Pokhara, Nepal

*Thaneshwar Subedi

ABSTRACT

In this study, physical and biochemical water quality parameters are analyzed from five selected stations in Rupa Lake Pokhara, Nepal using standard procedures. Analyzed parameters are: temperature, turbidity, total solids (TS), electrical conductivity (EC), pH, total alkalinity (TA), total hardness (TH), chloride content, sulphate and dissolved oxygen (DO). Based on the observed water quality parameters, the quality of Rupa Lake water is discussed and compared with WHO standard values for drinking water. Recorded laboratory results shows that water of Rupa Lake is useful for agricultural, industrial, aquatic life, and fishery purposes.

Keywords: *Dissolved oxygen, Nephelometer, Rupa Lake, total hardness, water quality Parameters*

INTRODUCTION

Water is the very important natural resource required for sustaining human and all living organism. It covers approximately 70% mass of human body. A state of deviation of water from the pure condition is known as water pollution (De, 2018). Polluted water contains unwanted physical, chemical, biological or radio chemical substances (Omer, 2019). The sources of fresh water are polluting day by day due to increasing population growth, rapid urbanization in developing countries and increasing world environmental pollution. As a result risk is growing to public health, food security, biodiversity, ecosystem services etc. (WHO, 2019). Water quality parameters: physical, chemical and biological mainly determine the quality of water. Physical parameters are turbidity, temperature, colour, taste and order, solids, and electrical conductivity (EC). Chemical parameters comprise pH, acidity, alkalinity, hardness, chloride, ammonia, chlorine residual, sulphate, fluoride, nitrogen, iron, manganese, copper, zinc, dissolved oxygen (DO), biological oxygen demand (BOD), chemical oxygen demand (COD), toxic inorganic and organic substances, radioactive substances etc. Biological parameters are pathogens (bacteria, helminths viruses, protozoa etc), total E -Coli, Plankton,

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algae, rutifers etc. (Omer, 2019; Khopkar, 2011). Regular monitoring of lake water quality parameters becomes important to find out its pollution condition and to specify its application for aquatic life, animal farming, fisheries, irrigation and recreation.

Lekhnath area of Pokhara (Old Lekhnath municipality) is known as city of seven lakes: Begnas, Rupa, Khaste, Dipang, Maidi, Gunde, and Nyureni. Rupa Lakes is the third largest lake among the eight lakes in Pokhara metropolitan, Kaski, Nepal. Rupa is fresh water lake with relatively low population density around it. The main occupation of local residential people is agriculture and animal farming, fisheries, fishing, boating, business including hotel and restaurant. Rupa Lake is also polluting day by day due to urbanization, agriculture and animal farming, natural erosion and sedimentation, construction of road and fisheries inside lake area. The main objective of the study was to study the water quality parameters of Rupa Lake, Pokhara Nepal. These parameters were temperature, turbidity (clearity), electrical conductivity (EC), total solid (TS), pH, total hardness (TH), dissolved oxygen (DO), chloride, and total alkalinity. Water samples were collected from five sites of Rupa Lake in March first, 2023 and were analyzed in chemistry research laboratory of Prithvi Narayan Campus (T.U.), Pokhara for water quality parameters. Analyzed result showed that most of the parameters remain within the recommended limit of World Health Organization (WHO).

Thousands of studies have been conducted to study the physicochemical parameters of ground water and surface water including lakes, ponds, streams, rivers etc. by many researchers but only less number of studies related to water quality parameters of Rupa Lake were observed from the literature. Thus the study of water quality parameters of Rupa Lake becomes essential. Shukla et al. (2013) have carried out the physicochemical analysis of water from four lakes: Kankariya, Vastrapur, Malav and Chandola located in Ahmadabad city in which turbidity, TDS, DO, dissolved CO_2, alkalinity, chloride, calcium, magnesium, total hardness, copper and sulphate ranges from 4 to 11 NTU, 668 - 942 ppm, 4.4 - 5.9 ppm, 6.1 - 7.0 ppm, 150 - 170 ppm, 60 - 84 ppm, 67 - 73 ppm, 7.8 - 32 ppm, 279 - 343 ppm, 15.27 - 19.76 ppm, and 61 - 74 ppm respectively. Pant et al. (2019) carried out the study on the water quality assessment of Begnas and Rupa Lake in Pokhara, Nepal and presented the recorded values for pH, $NH_3 - N$, DO, BOD, total hardness, EC, TDS, chloride nitrate and phosphate (Table 1). Keremah et al. (2014) had conducted the physicochemical research of fish ponds water in fresh water of 5 local government area of Bayelsa state, Nigeria and presented the results (Table 1). In 2013, Jadhav et al. conducted the study for physicochemical parameters of drinking water from natural resources: Shelar Lake, Kawal Lake and explored the analyzed values (Table 1).

Similarly, Shawnigan Lake water quality assessment had been carried out by Rieberger et al. (2004) and compared with WHO standard values (Table 1). Shrivastava and Kanungo (2013) reported the physicochemical parameters of 10 ponds water of Surguja district (from 2009 to 2010) by comparing with each other and standard values (Table 1)

Table 1

WHO Standard Water Quality Parameters and Recorded Parameters from Different

Parameters	WHO Standard Values (Desirable Range)	Values from Different sources						
		Ponds Water (Surguja District)	Begnas Lake	Rupa Lakes	Shelar Lake	Kawad Lake	Snwnigan Lake	Fish Pond Water
Temperature (oC) PH	< 35 (20 −30) 6.5– 8.5 (6.5 − 9)	17.57-31.2 6.93 - 7.55	26.73 9.04	25.45 7.87	31.4 7.5	31.9 7.2	- 7.4	24.9 - 25.3 6.24- 6.68
Dissolved NH3(mg/l)	0.2 (0.0125 − 0.2)	0.34 - 0.55	0.1	0.17	-	-	0.015	
DO (mg/l)	8 – 10 (5.0 – Saturation)	2.43 - 4.45	6.46	6.7	6.12	6.41	-	2.8 - 6.6
BDO (mg/l)	10 (0.29)	4.22 - 7.23	26.28	53.83	-	-	-	2.9- 4.52
Total alkalinity (mg/l)	1.0 (50 – 400)	134.7-205.00	-	-	-	-	4.5	43.1-93.7
COD (mg/l)	-	9.15 - 18.00	-	-	18.2	24.14	-	-
Turbidity (NTU or ppm)	£ 0.2 (£ 0.5)	-	-	-	18	4	0.49	20.6 - 45.1
Total hardness (mg/l)	200 (50 – 400)	138.12 - 219.37	13.75	16.53	10.48	10.45	20.5	19.7- 44.3
EC (µS cm–1)	400 (20 – 1500)	115.11-212.13	35.76	52.33	8.13	8.03	6.1	117.3 - 378.4
TDS (mg/l)	- (500 mg/l)	152.12 - 265.97	25.42	36.7	-	-	-	27.9- 145.4
Chlorine (mg/l)	5	-	-	-	-	-	-	-
Chloride (mg/l)	250 (600)	21.46 - 49.97	20.4	16.52	482.3	506.2	-	-
SO4– –(mg/l)	250	-	-	-	6.17	4.22	-	-
NO3– – (mg/l)	50	-	1.77	2.46	13	18	-	-
Total N (mg/l)	12.21	-	-	-	-	-	0.187	-

Sources: Literature Review

DATA AND METHODS

Study Area and Sampling Sites

Rupa Lake (Rupa Tal), a fresh water lake, is located between Pokhara metropolitan-31, 32 and Rupa rural municipality, Kaski district, Nepal. It is a medium size lake, but third biggest lake in Pokhara valley, situated at an elevation of almost 624 meter above the mean Sea level with an average water depth from 3 m to 6 m. The study area is located between 84^0 06' 18'' and 84^0 07'21'' east longitude, and 28^0 08'38'' and 28^0 09'57'' north latitude. The maximum east-west breadth is about 854 meter and that of north to south 2766 meter. Five stations are selected for collecting the water samples to study water quality parameter as listed in table 2 and figure 1.

Table 2

Water Sample Stations in Rupa Lake

Station No.	Location of Station	Station Description
1	East perimeter	East end of the lake between phapretar and Jamunkuna of Rupa Rural Municipality
2.	West perimeter	West end of the lake near north north-east end of Pokhara Zoological park
3.	Inflow site	North-east inflow of the lake near Paddy field
4.	Outflow site	South flow end of the lake near Bhimsendanda
5	Centre of the lake	Approximately centre and deepest site of the lake water Between Jamunkuna and Pokhara Zoological park.

Figure 1

Location Map of Rupa Lake in Pokhara, Nepal
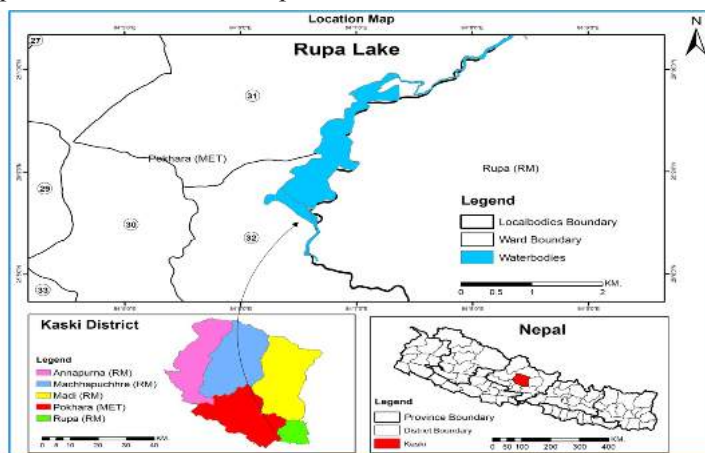
Simple Collection

Water samples from five selected stations in Rupa Lake were collected by using glass bottles of one-liter capacity at the depth 10 cm from the surface of water early in the morning of first March, 2023. Maximum photosynthetic activity of primary fish food were observed in this layer and in the early morning hour dissolved DO and CO_2 values remain in critical concentrations. Before sample collection, glass bottle and lead was sterilized by boiling first and then rinsed with water of sampling stations. Collected samples were stored in chemistry research laboratory of Prithvi Narayan Campus at required temperature (4°C) in dark. Estimation of DO, and pH were carried out within a few hours of sample collection and other experiments were carried out within 2 days of sample collection.

Analysis of Water Quality Parameters

Determination of Temperature: Temperature of different water samples was determined by using digital thermometer directly in the sample stations and expressed in degree Celsius.

Determination of Relative Turbidity: Turbidity (Cloudiness) of water is measured by nephelometric turbidimeter and expressed in nephelometric turbidity unit (NTU) (Omer, 2019; Khopkar, 2012). One NTU is equivalent to 1 mg/l of silica in suspension (APHA, 2005).

Determination of Total Solid (TS): Total solid (Total suspended solid + total dissolved solid) was determined by gravimetric method of analysis. Known volume of water was heated in a porcelain dish to dryness and then in muffle furnace at 105°C for an hour to get constant weight and expressed in mg/l.

Determination of Electrical Conductivity (EC): EC of lake water samples was determined by using calibrated digital conductivity meter with cell (glass electrode) and expressed in μS cm^{-1} unit (APHA, 2005).

Determination of pH: The negative common logarithm of hydrogen ion concentration is known as pH and used to indicate the strength of acidic or basic solution. (Spellman, 2017; Omer 2019). pH varies with temperature of water. pH of Lake water samples was measured by using calibrated digital pH meter.

Determination of Total Alkalinity: Total alkalinity of Lake water samples was determined by double indicator (phenolphthalein and methyl orange) titration method with standard sulphuric acid in which OH^-, HCO_3^- and CO_3^{--} are completely neutralized. It is expressed in mg/l as $CaCO_3$.

Estimation of Total Hardness: Total hardness of lake water was estimated by

complexometric titration with ethylene diamminetetraacetic acid (EDTA) at required pH in presence of indicator Eriochrome Black-T and expressed in terms of mg/l as $CaCO_3$ (Vogel, 1994). At the end point, the color of indicator changes from wine red to blue. It gives total Ca^{++} and Mg^{++} ions.

$$1 \text{ ml of } 0.01 \text{ M EDTA} \equiv 1.0 \text{ mg } CaCO_3$$

Determination of Chloride: Chloride content of lake water was determined by titration with standard silver nitrate solution using K_2CrO_4 as an indicator. At the end point, permanent reddish tinge (Ag_2CrO_4) was observed (Mohr's method).

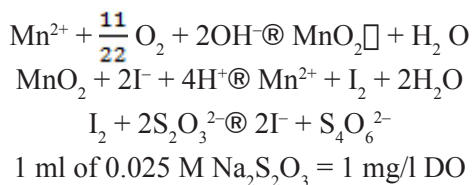$$1 \text{ ml of } 0.282\text{N } AgNO_3 = 1 \text{ mg } Cl^-.$$

For estimation of smaller quantity of chloride (< 0.15 mg/l), potentiometric titration with $AgNO_3$ solution is used in glass and silver-silver chloride electrode system (De, 2018).

Determination of Sulphate: The amount of sulphate ions present in the water samples was determined by gravimetric method or an indirect titration method with EDTA solution, known volume of $BaCl_2$ (25ml, 0.01M) was added to the fixed volume (e.g. 10 ml) lake water sample to get ppt of $BaSO_4$. The excess of Ba^{++} ions in solution was determined by titrating with standard (0.05 M) EDTA solution. Near the end point, 5.0 ml of 0.01M $MgCl_2$ was added to detect the clear end point (Stirling, 1985; Ganeshalingam, 2012).

$$1 \text{ mole of EDTA} = 1 \text{ mole of } Ba^{++} = 1 \text{ mole } SO_4^{--}$$
$$1 \text{ ml of } 0.05 \text{ M EDTA} = 4.8035 \text{ mg } SO_4^{--}$$

Estimation of DO: DO concentration in water was determined by Winkler titration mention. In this method, DO is allowed to react with KI to liberate I_2 which intern treated with standard $Na_2S_2O_3$ solution. The amount of iodine consumed represents the DO used in Oxidation. The reaction rate can be increased by the addition of Mn(II) salt in strong alkaline medium (De, 2010).

$$Mn^{2+} + \frac{11}{22} O_2 + 2OH^- \circledR MnO_2 \downarrow + H_2O$$
$$MnO_2 + 2I^- + 4H^+ \circledR Mn^{2+} + I_2 + 2H_2O$$
$$I_2 + 2S_2O_3^{2-} \circledR 2I^- + S_4O_6^{2-}$$
$$1 \text{ ml of } 0.025 \text{ M } Na_2S_2O_3 = 1 \text{ mg/l DO}$$

RESULTS AND DISCUSSION

The analyzed water quality parameters of water from Rupa Lake and WHO recommended standard values for drinking water are listed in the following table.

Table 3

Laboratory Result of Determined Water Quality Parameters of Rupa Lake

Parameters	East Perimeter	West Perimeter	Inflow Site	Outflow Site	Centre of the Lake	Mean Value	SD	WHO Standard Values
Temperature	18.5	19.0	18.5	19.2	19.0	18.88	2.25	<35 (20-30oC)
Turbidity	1.0	0.9	0.5	0.8	0.8	0.8	0.01	£ 0.2
Total solids (TS)	149.87	129.00	128.50	142.33	126.15	135.17	8.23	500
Electrical Conductivity (EC)	190.46	190.00	221.30	165.50	192.00	191.85	25.68	400 (20-1500)
PH	7.35	7.10	7.2	7.2	7.2	7.21	1.97	6.5-8.5
Total Alkalinity (TA)	65.0	78.0	451.0	53	51	44.6	6.35	1.0 (50-400)
Total Hardness (TH)	54.0	51.0	62.0	60.0	60.0	57.4	3.39	200
Chloride content	105.0	89.0	97.0	87.0	92.0	94.0	7.64	250
Sulphate	57.642	48.035	67.249	52.838	57.624	56.277	6.98	250
Dissolved Oxygen (DO)	7.0	6.0	8.0	7.0	8.0	7.2	1.05	8-10

Note: All the parameters are expressed in mg/l except pH, EC (µS/cm), turbidity (NTU) and Temperature (°C). Acceptable values of WHO are given within bracket.

Table 3 clearly represents the results of ten water quality parameters: temperature, turbidity, total solids, EC, pH, TA, TH, chloride content, sulphate and DO as determined by using standard methods for water of Rupa Lake as well as WHO standard values for drinking water.

Figure 2

Comparison of Observed Water Quality Parameters: TS, EC, TA, TH, Chloride and Sulphate of Rupa Lake with WHO Standard Values Graphically
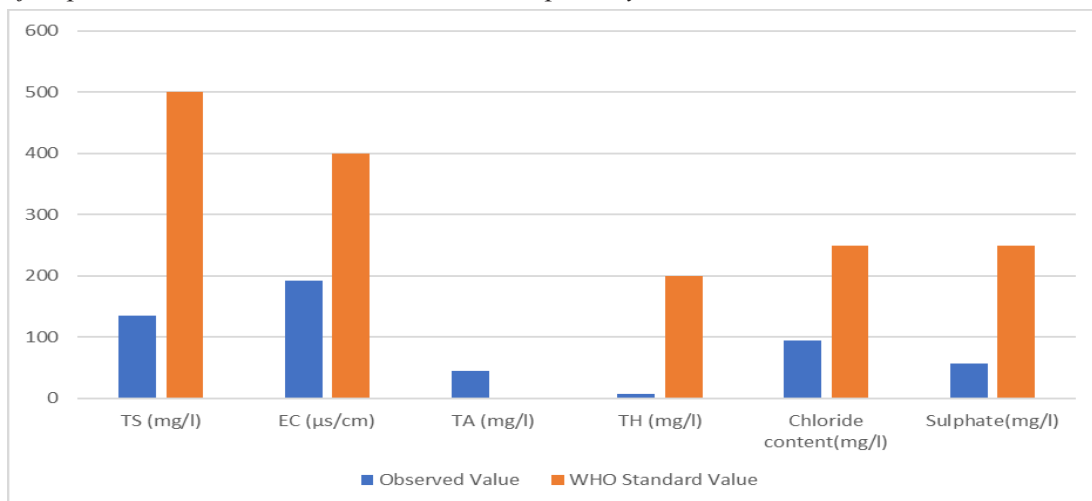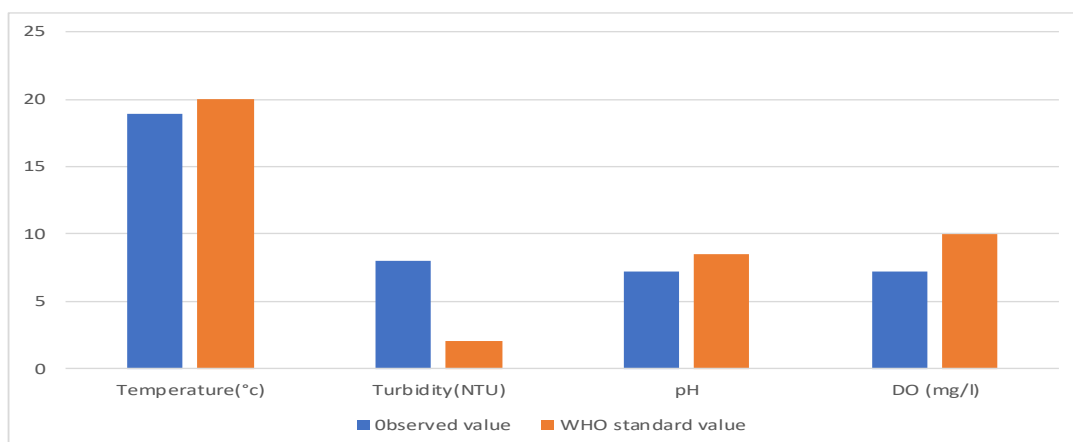

Figure 2 shows the mean values of experimentally analyzed mean water quality parameters: TS, EC, TA, TH, chloride, sulphate, and their respective WHO standard values for drinking water. Observed value of TS, TH, chloride content and sulphate is less than WHO values but EC, and TA is within the permissible limits.

Figure 3

Comparison of Observed Water Quality Parameters: Temperature, Turbidity, pH, and DO of Rupa Lake with WHO Standard Values Graphically

Note: In figure scale of turbidity is 10 times of observed value

Figure 3 expresses the mean values of experimentally analyzed mean water quality parameters: Temperature, Turbidity, pH, and DO and their respective WHO standard values for drinking water. Recorder temperature is less than permissible minimum value, turbidity is much more, pH is in between permissible value of WHO, dissolved oxygen is less than recommended minimum value of WHO.

The experimental results of water quality parameters of five different stations in Rupa Lake water have been summarized in table 3 and interpretation of data has been made by comparing with WHO standard values for drinking water. The temperature of different stations in Rupa Lake ranged from 18.5^0C (for east perimeter and inflow station) to 19.2^0C (for outflow station) with mean value of 18.88 indicating relatively low temperature than that prescribed by WHO values for drinking water. Temperature of lake water depends on the factors: air temperature and humidity, surface area of lake water, amount of solar radiation, turbulence of water and air above water surface, geological and geographical situation of lake etc. The odour, solubility, viscosity, palatability, chemical reactions, sedimentation and chlorination process, DO, BOD, biosorption of heavy metal in lake water are influence by temperature (Omer, 2019). Growth of micro-organism in water increases with increasing the temperature of lake water. Turbidity (cloudiness) of water measures the ability of light to pass through the water. It is due to presence of suspended materials like mud, clay, slit, chemical precipitates, organic material, plankton and other particulate materials in lake water. Turbidity of water sample from east perimeter is maximum (1.0 NTU) followed by west perimeter (0.9 NTU), centre of the lake (0.8 NTU) = Outflow site (0.8 NTU), and inflow site (0.5 NTU) with mean value of 0.8 NTU. All these observed values are greater than that of WHO standard value (0.2 for drinking water. Total Solids (TS) in water is the sum of total suspended solid (TSS) and total dissolved solid (TDS). TS in lake water originate from natural sources, sewages, urban runoff, industrial waste and organic matters. In the present study, experimentally observed mean TS value was 135.17 mg/l ranging from 126.15 (for centre station) to 149.87 mg/l (for east perimeter station). All these values are below WHO referred TS values for drinking water (500 ppm) (Ganeshalingam, 2013). The notable observed solid in Rupa Lake waste may be due to slow rate of flow of water from inflow to outflow sites. TS have no direct health effect and no health based guideline value for it. Observed data of turbidity and TS showed that these values were accumulated around the dense residential and fishery area.

Electrical conductivity (EC) of solution is its capacity to conduct electrical current. EC of water increases with increasing concentration of conducting ions: $Ca^{++,}$ Mg^{++}, Na^+, K^+,

HCO_3^-, Cl^-, H^+, NH_4^+, NO_3^-, I^- etc in water. Analyzed EC increases from minimum 165.5 µS/cm (for outflow station) to maximum value 221.3 µS/cm (for inflow station) and mean value 191.85 µS/cm. These values fall within the permissible limit of WHO values for drinking water as presented in table 1 and 3. EC values of water vary with nature of ions, concentration of ions, ionic strength and temperature of water. The result showed that overall less electrical conductivity of Rupa Lake is due to less polluted water and relatively more EC at inflow station among the five stations is due to source of ground water. Acidic, basic or neutral nature of lake water is indicated by its PH values. pH 7 indicates neutral water, pH > 7 shows alkaline water and pH < 7 expresses that acidic water. Analyzed PH value of water sample (Table 3) was ranged from 7.10 (for west perimeter station) to 7.35 (for east perimeter station) indicating slightly alkaline nature of water but these analyzed values are within the WHO recommended range for drinking water (6.5–8.5) and favorable for domestic use and living organism need (WHO, 2011). pH has no direct impact on consumers but it is one of the most important operational water quality parameter. Aquatic plants and animals require specific pH and highly affected by slight change of pH; low pH decreases the fishes and aquatic insects; very low and high pH is fatal and only few animals can exist at pH < 3 and > 11(Omer, 2010). Total alkalinity is the capacity of solution to neutralized acid at designated pH and it is due to presence of OH^-, HCO_3^- and CO_3^{--} or mixture of two of these two ions (Khopkar, 2011). Total alkalinity of water sample for Rupa Lake was observed from 41.0 mg/l (for inflow station) to 78.0 mg/l (for west perimeter station with mean value of 44.6 mg/l. These values are within the acceptable range of WHO (50 - 400 mg/l) and pH is favorable for growth of phytoplankton like green algae, cyanobactera etc. Alkalinity or acidity of aquatic water remains almost constant due to buffer action.

Total hardness of water is due to presence of carbonate, bicarbonate, sulphate and chlorides of polyvalent, metallic ions mainly calcium and magnesium. Thus, total hardness represents the sum of calcium ion and magnesium ion in mg/l as $CaCO_3$. Experimentally, recorded hardness varied from 51.0 (for west perimeter station) to 62.0 mg/l (for inflow station) having mean value 57.40 mg/l in Rupa Lake water which falls within the WHO acceptable values (50 - 400 mg/l). Based on the analyzed data, water of Rupa lake is moderately hard (hardness; 50 - 150 mg/l as $CaCO_3$). The range for soft water is < 50, hard water = 150 - 300 and for very hard water is > 300 mg /l as $CaCO_3$. Hard water provides nutrient elements for plants but creates scale in boilers, water heaters and pipes. Naturally occurring chloride enters in streams, lakes and ground water from chloride containing rocks, agricultural runoff, and waste water. Analyzed chloride content in Rupa Lake was observed from 87.0 (for outflow

station) to 105.0 mg/l (for east perimeter station) and mean value of 94.0 mg/l. These data are accepted by WHO recommended chloride content for drinking water (250 mg/l). Chloride is not harmful to public health, but high concentration causes an unpleasant salty taste and sodium part of table salt is connected to kidney and heart disease (WHO, 1996; Omer 2019). Sulphate ions in nature are originated from the oxidation of sulphide ores, weathering of gypsum and Epsom salts, leaching of sodium sulphate (Glauber's salt), industrial waste etc (Kudesia, 1998). Mean value of sulphate ions in the samples of Rupa Lake water was 56.277 mg/l and varied from 48.035 mg/l (for west perimeter station) to 67.249 mg/l (for inflow station) indicating low amount of sulphate than that recommended by WHO for drinking water (250 mg/l). WHO provides no health base guideline for sulphate and SO_4^{--} has no significant danger to public health but high concentration in drinking water produces objectionable taste and unwanted laxative effects (Ambasht, 2005). Dissolved Oxygen (DO) is the most important water quality parameter in lakes, streams, rivers and ponds. Higher the concentration of DO, better will the water quality and vice versa. In the present study, highest amount of DO was 8.0 mg/l for centre station followed by inflow station (8.0 mg/l), east perimeter station (7.0 mg/l) = outflow station (7.0 mg/l), and west perimeter station (6.0 mg/l) as recorded in the laboratory. Solubility of DO influences by temperature (At 0, 20 and 30^0 C, amount of DO is 14.6, 9, and 7 mg/l), pressure and salinity. Amount of DO in water depends on physical, chemical and biological activities of water body. Recorded values of DO are within the recommended values by WHO (5 mg/l to saturation). Oxygen depletion rate is increasing per year due to decreasing chlorophyll and increasing polluting agent in the surface water reservoirs including lakes.

Pollution of surface water is due to chemicals from agricultural activities, industrial and natural sources, water treatment materials, pesticides used in water for public health purposes, cyanobacterial toxins, soil erosion, dispersal of human and animal waste, and radiations from radioactive substances (UNICEF, 2008).

CONCLUSIONS

Water quality parameters of Rupa Lake water were determined by using standard methods. Most of the analyzed parameters are within the permissible limit of WHO for drinking water. From the laboratory results, Rupa Lake water can be described as slightly alkaline, turbid with notable amount of total solid and dissolved oxygen. Lake water appears to be suitable for aquatic life along with fishery and agricultural uses but not suitable for drinking purpose without treatment.

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Cultural Assimilation: A Post Colonial Perspective in Kim

*Yog Raj Paudel

ABSTRACT

Rudyard Kipling's Kim is mostly considered as a novel of advocacy for making colonizers stronger to rule the natives. It deals the native with a stereotypical perception of the oriental, particularly, of Indian people. This paper has used Edward Said's postcolonial perspective of orientalism to analyze Kim. Emphasis is given on identifying the situations and expressions that are directed to cultural assimilation, trying to indicate that Kipling advocates for the English cultural supremacy and colonial significance in Indian territory. This research is based on primary as well as secondary data analysis with qualitative research approach. Finding shows that Kipling, with a pretext of standing in- between the East and the West, visualizes varying ranges of stereotype of India and its peoples. Even if cultural assimilation seems to be liberally responded at different occasions this study tells that English community is in understanding and application of cultural supremacy as a determinate factor to establish their rule upon the native and inspire the latter to assimilate to former's culture. Detailed analysis of assimilation through post-colonial cultural hegemony perceptive would be further relevant study on this novel.

Keywords: *Ambivalence, assimilation, hegemony, hybridity, mimicry, oriental*

INTRODUCTION

Kim is a novel of colonial mission. It is set with the background of colonial control of English people in India. Written by Rudyard Kipling, one of the most popular British writers of 20th century, the novel is about India and the English colonial rule in India. The way colonizers intend to rule the native is mainly revealed through the relation of an English boy of Irish descent- born and grown up in India- with various native Indians and English rulers in India. In his early childhood, he becomes orphan and gets care from a native woman at Lahore Street in Panjab, now in Pakistan. Consequently, he grows up rather independently and becomes more playful and energetic because he has to adjust himself with people from

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diverse ethnic, social, cultural and religious background of India. Kipling here presents both English and Indian characters who have direct and indirect influence on the life of Kim and present Kim as a central figure for the need of colonial rule in India. Though he is an English boy, the son of Irish Kimble O' Hara in blood, yet he grows up as an Indian native in words, action and appearance. Kipling present Kim as a boy of assimilation in native culture. He is presented in need of acquiring ability to blend himself among people of Hindu, Muslim and Buddhist religions. When he meets Teshoo, a wandering pilgrim Lama from Tibet in the visit of four sacred Buddhist pilgrims and a sacred river in India, Kim gets influenced by the Lama's personality and becomes his follower. He accompanies the Lama to many places and provides him necessary help he could. While travelling with the Lama, he also works as a spy for the British Secrets Service in India. He gets utilized by some secret service members like Muhbub, a Muslim, and colonel Creighton, one of the major role players of British Intelligence Service in India. His tanned skin, skill and ability to speak Indian language as a native speaker do contribute his role of a spy successfully. Kim's travels with the Lama at different parts of India provided him opportunities to learn the diverse socio-culture aspects and know people in multiple ethnic backgrounds. As a result, major parts of the novel are covered by the vivid account of the social, cultural and geographical diversity of India. Kim's interest on travelling and ability to blending into different socio-cultural situations helps sharpen his spying talent for the British army. His respect, devotion and accompaniment to the elderly lama also contributes him much in acquiring information and maturity in critically understanding the native people. Kim's adjustment with the native and his ability to penetrate the social cultural, geographical, geopolitical as well as other contextually demanded situations in the novel indicate Kipling's intention of conveying the message of English ability in influencing native people to assimilate to the English social-cultural values and ways of life.

The Lama's devotion to Buddhism, his disinterested contribution to Kim and other people on the way to his quest of Holy River and socio-cultural and geo-political themes of the novels make the novel very impressive in general appearance and understanding , yet the way Kipling has presented the colonial rulers and the way they use the native as well as the protagonist in secretly serving the colonial rulers generate the condition Kipling is deliberately shaping the novel to influence the native to perceive the message that assimilation to English cultural and social values is essential for their prosperity. Anyway, Kipling's *Kim*, Alisha Walters (2018) writes, "*Kim* reveals the under-examined links between early twentieth-century ideas of white British identity and descriptions of imperial miscegenation (p.331). After the

1980's it has also been considered a rich and persistence novel because post-colonial theorists have found it a work that subtly but intentionally glorifies British Imperialism.

STATEMENT OF PROBLEM

This paper is an endeavor to interpret *Kim* as an imperial voice from post-colonial perspective. Though Kipling depicts Indian people, culture, tradition and faith in *Kim*, it can be interpreted as an advocating for significance of British rule in India. The relationship between Britain and India sounds amicable in the novel. The relation seems to have been established within the British and the Indian- the White and the non-white, is established at different places with different images, that seems to patronize the peoples and places the British have conquered. English cultural supremacy and racial hegemony in rules is reflected at places in the novel. However, the situations have not been closely studied and interpreted from the cultural assimilation perspective and this paper is going to point out some situations in which the natives are dominated and hegemonically inspired to assimilation to English culture and those representative contexts in which the native is in assimilation spirit. To explore how the situation and contexts are generated in the text is the main statement of the problem of this research. According to Williams and Laura (1994). the situations are juxtaposed with the world of realities and that of imagination which give us the impression of "reality effect through its accumulation of detail, particularly of Indian " (p.488). The presentation, however, is not so direct but through stereotypical perspectives the English people show in their behaviors and attitudes for inspiring native for assimilation and the same contexts and situation indirectly become counter cultural resistance of the native to the Anglo rulers in India.

RESEARCH QUESTIONS AND OBJECTIVES

As the problem is about the need of revelation of cultural assimilation contexts and discourse for the native people to the colonial culture, the focus in the study has been on the endeavor to address the queries like how and what kinds of contexts and discourse the novelist has generated to persuade the native peoples to kindle the desire of assimilating to English culture. Based on these curiosities the research objectives of this paper are to explore situations and contexts in which the natives are expected and persuaded to cultural assimilation and how the what discourse is generated and how that it proceeds in the novel. The analysis has focused on showing values in the novel that refer different attitudes of the Indian as well as the English to cultural assimilation at different occasions. Therefore, analysis of assimilation through post-colonial cultural hegemony perceptive has been the objective of the study about the novel in this article.

LITERATURE REVIEW

The following few paragraphs present some research texts about *Kim*, and tries to find out relevancy and justifiability about this research. The studies presented below are to some extend related to the topic of this article in analytical approach but they have not focused on assimilation analysis. Therefore, this research goes ahead for further study. First, let's see a thesis. Klara Sumberova (2003) in his thesis "British Imperial Experience reflected as on different identities in Kipling's Novel *Kim''* analysed the novel as ideological influence to enforce major characters to identify themselves as English and pursue ideals based on English culture and race, focusing on 19th century society of England. This thesis has focused on concept of hybridity, British society on cultural attitude, problems of double identities of the protagonist of the novel and the characterisation of the lama from Buddhist perspective.

Baker (2009) in his article "Identity Crisis: Rudyard Kipling's *Kim* – A Postcolonial Perspective" views *Kim* as controversial novel with anti-Indian and pro-Indian provocation. He goes on enlisting some of the critics who stand on either side. Then he explains *Kim* as a novel with juxtaposed cultural contexts in which the protagonist gets in dilemma like of Shakespeare's Hamlet due to his cultural indecisiveness of belonging.

Klass (2010) in his article "The Imperial Message in Rudyard Kipling's Kim", is of the opinion that Kipling's novels and short stories are remarkable examples of writings of a pro-imperialist writer. Klass thinks that cultural domination upon the natives and colonial intention of hybridizing and supressing the native couture is not envisioned in this article. David has learnt that Kipling in *Kim* has endeavored to show people from different cultural and social backgrounds to live in harmony and peace in exchange of cultural understanding and tolerance but he has ultimately failed to do so because he himself has to learnt to liberalize his attitude to Indians. Though he touched the cultural analysis he has not analyzed culture.

In his dissertation Daniel Scott Parker (2012) under the title "Phenomenology of space and time in Rudyard Kipling's Kim: Understanding Identity in the Chronotope" makes research on how Kipling depicts the influence of geopolitical narrative to shape the identity of the characters. Parker here applies postcolonial and modernist readings of *Kim* and the geo-culturalism approach in text evaluation. Kim's identity in this approach has been multifaceted and that is investigated through different *chronotopes* which according the researcher is a new term to refer to for coexisting framework of time and space that helps characters get identified and realized one's own identity.

Matthew Fellion (2013) in his article Knowing "Kim, knowing in *Kim''* makes studies

on how Kipling in *Kim* presents his protagonist, a teenage boy, able to grasp both ethnographic and social cultural including linguistic knowledge and skills in claiming the authenticity of information and faces challenges in difficult situations. The paper tries to explore how Kim, the hero becomes able to distinguish between categories of knowledge and source of information for the claims he has made to the elderly people who are in expectation of his responses.

Shaikh Mushtaq (2015) in his article "Personal is Political' in Rudyard Kipling's *Kim*", observes that Kipling's *Kim* is a powerful advocacy of the colonial ideology and politics of English race. Mushtaq here analyses characters like the lama, Lurgan Sahib, Huree Babu and Mahbub Ali and through their characterisation and performance in the hands of the colonial rulers conclude that colonialism is a large beast which engulfs the forces of natives from their political and cultural resistance.

Roisin McCloskey in his article "The charismatic Adolescent in Rudyard Kipling's *Kim*" (2015) writes that *Kim*'s protagonist has been made much energetic and radical in action even though he by age is too young and less matured though education and experience. This article uses Max Weber's model of charismatic authority to analyse the role of Kim and argues that Kim's adolescence as a 'routinization' in Weber's attitude has nevertheless been a power source of information and regulation of the colonial power in British India. This article also doesn't give its research view inn cultural resistance thus leaves a research gap in this field.

Sarah Alileche and Meriem Herda in their dissertation entitled "From Colonial Mimicry to Post colonial Hybridity" (2016) makes a study between Rudyard Kipling's *Kim* and Mohammed Did's *L'infante Maure*' compare them in the postcolonial theoretical perspectives, particularly taking the concept of Homi.K. Bhabha as expressed in *the Location of Culture*. They focus on how British Empires use weapon of cultural mimicry to control over the natives and intend to prolong their rules in India, but they don't go to interpret how resistance in the novel is prevailed.

In "Hybrid Mysticism: the Journey to enlightenment in the Works of Sir Richard Burton and Rudyard Kipling" (2016) a dissertation by Sheba Aniqua Rahim explains that Kipling in *Kim* seem to a person with esoteric faith include various information and to some extend attention on such elements. He finds Kipling dealing with mystic themes of unity and universality and just see things, indiscriminate of colonizer and colonized, as one. Aniqua here does not go into the cultural resistance analysis but how culture or people with similar faith believe see thing and events in similar fashion and try to reveal things and events in similar faith-colour.

The Gale Group's publication *A Study Guide for Rudyard Kipling's Kim* (2017) narrates Rudyard Kipling from his childhood to literary age when he became popular and got novel prize in literature. With much emphasis on his Indian life and how he learnt knowledge of Indian culture and geography, the book explains that Kipling's elaborate narration of the Indian life and topography is the result of his extensive travelling in India when he was young. His experience during his stay in India and visit to different places in India enriched his ability to realistically depict the characters in Kim and other stories.

The researchers mentioned above have used postcolonial theory to explore and explain how Kipling has made the message of the novel as a means of expanding imperial ideology to those places where the imperialist had been and intended to be. To materialize such intention Kipling is seen as an imperialist mouthpiece through the novel because he is found exercising his writing skill in directing to the purpose and conveying the colonial message that English rules, culture and presence in India is still necessary in order to enable the native of India to rule the country themselves. These researches have ignored how cultural domination of the imperial rulers motivated and compelled the natives to assimilate and resist the colonial rulers respectively. This is the gap for the search study and this article has been directed to this area. And it is found relevant to this novel.

THEORETICAL PERSPECTIVE

This paper interprets *Kim* as an imperial voice from post-colonial perspective and contexts generated for cultural assimilation of the native to the English colonial culture in India. To make the analysis more authentic through theoretical perspectives, Orientalism - a discourse propounded by Edward Said, has been used and applied. Orientalism explains Western perception and attitude about Oriental world and its people in his books *Orientalism* (1979) and *Culture and Imperialism* (1994). Orientalism is an extended view from Michael Foucault's theory of discourse based on power. In Said's opinion, Orientalism is a "style of thought based on ontological and epistemological distinction made between the orient and the occident" (Said, p.2). The distinction is not purely based on simply giving identities, but on showing remarkable differences that place the Orientals inferior and therefore, subjected to be ruled and expected to be culturally assimilated to the English culture and values. It is, according to Said, a power generation; a network of discourse that represents western knowledge about the Orientals and the power to define them. Said claims that Orient was "Orientalized" by Westerners not only because it was found to be Oriental, but also because it

could be made Oriental through the discourse of western people generated about the Orientals from their experience, understanding, misunderstanding, misrepresentation and exaggeration. Cultural assimilation is associated with concept of hybridity discussed in the work of Homi K. Bhabha (1994), whose analysis of relation between colonizer and colonized stresses their interdependence and the mutual construction of their subjectivities, which Bhabha generally refers through words 'mimicry and ambivalence'. Further he associates that all cultural statements and systems are constructed in a space he calls the 'Third Space of enunciation' (p. 37). Cultural identity of the colonizers, and particularly of the colonized gets emerged ambivalently in this space, and the recognition of this ambivalent space of cultural identity do gradually narrows the space of recognition because of gradually growing hybridity. And this movement stirs "conceptualizing an international culture, based not on the exoticism of multiculturalism or the diversity of cultures, but on the inscription and articulation of culture's hybridity. (Bhabha, p. 38). This concept is used to interpret cultural assimilation in *Kim*.

Therefore, orientalism from Said's perspective is western style for dominating the colonized, reconstructing ideology, influencing the culture and having authority over the orient. To Said colonialism is a process of Othering. And othering the Orientals is a Eurocentric assumption and will. And writing back to reject such a view and approach about the orients is essential, because within the contexts also people have the feeling of resistance and colonial power exercise in the colonized land directly and indirectly generate conditions of resistance, yet the focus here is on assimilation.

DATA AND METHODS

This article applies the qualitative approach to research. Qualitative approach appropriate in constructing conclusive views of people on their interpretation of experience. Sharan Merriam (2009) thinks that qualitative research approach enables researchers to understand people's perception of meaning through interpretations of events and opinions of people in their daily life (p.5). Therefore, research is heavily dependent on close reading of primary as well as secondary texts from post-colonial oriental view in cultural assimilation perspectives. This approach demanded extensive library visits and study on previous books written about the cultural and colonial aspects of the novels. Said's theory of orientalism has been the grounded theory for data analysis. Approaches applied here are not simply based on inductive reasoning, retrospective and introspective approaches in analysis are also applied in the interpretation while unveiling the concepts and drawing conclusion from the research.

RESULTS AND DISCUSSION

In the surficial observation it can be easily traced that imperialism in Kipling's concept is not an exploitation, territory occupation and subjugation of the native people. It is rather beneficial movement for economic and educational upliftment of the native peoples. For him, British Empire represented glory and wealth, and it would improve economic condition of the nation it has ruled. But from post-colonial perspectives, Kipling endeavors to establish British rule as a racial and cultural supremacy and he has generated so many contradictions of situation in which benevolence for Indian people is questionable on the one hand and continuous efforts of English characters to rule the people around, and their resistance to being themselves contextually Indianized and assimilated in real sense is persistant on the other.

The endeavors start from the beginning where Kim, the protagonist of the novel, the orphan child of Irish origin, appears to be a confidential ruler around him. The imperial and identity spirit of the orphan is reflected in the first paragraph which describes, "He sat, in defiance of municipal of municipal orders, astride the gun Zam Zammah on her brick platform opposite the old Ajaib Ghar, the wonder house, as the natives called the Lahore Museum who hold Zam-Zmmah, that 'fire-breathing dragon' hold the Punjab, for the great green bronze piece is always first to the conqueror's loot. There was some justification for Kim, - he had kicked Lala Dinanath's boy off the trunnions- since the English held the Punjab and Kim was 'English'"" (Kipling, p. 1) In the beginning of the novel the juxtaposed status of the English and Indian, former being the superior and powerful to rule and the latter being the ruled- has been the dominant spirit of the novel. Kim's defying of the municipal law by sitting 'stride' on the gun. Zam- Zammah and kicking of the local boy has proven that Kipling established superiority of English people over the Indians.

Similarly, the writer has presented the native context of India as a stereotypical place where the English people experience mystery. English people's calling "The wonder house", for the local museum in Lahor presents an attitude of different or mysterious place for them. The differences in view indicates, in the very beginning that there are two world concepts in English people in the novel: the first is of the English world, which, in their perception, is more familiar and the second one is the Indian or oriental world that is more mysterious and stranger for the English. Similarly, the book has got much about the concept of assimilation along with the struggle of resistance from both English character and Indian ones. Kim's position is in the centre; his physical appearance of an English boy and skin complexion getting somehow darker to resemble to native Indians and his tone of spoken language more

inclined to vernacular one, have placed Kim 'in between' of the two cultural identities.

Kim in broad spectrum presents clear pictures of two realities in India. The first is the socio-mental reality that India and Indians are ruled by British people for years and the second is the problems of increasing native resistance to the colonial rule. The readers find the division between the white and non-white - the English and the Indian. Kipling has presented the white as colonial possessors, but with indication of growing tension in the changing relationship between the ruler and the ruled, the latter being more conscious on the territorial and political independence from the former. In this reference Clara Claiborne Park in "Artist and Empire: Kipling and Kim" (Park, 2003), presents a comprehensive critical history of Kipling in general and Kim in particular. She analyses that Kipling's perception of India is vague and indeterminate, the common places have been strange and *Kim* from the common places and peoples develops the characteristics of both English and Indian values. So Kipling uses his own experience and knowledge to define and justify the ways of colonial power to continue the English sovereignty in India from the insider's perspective. However, Edward Said (1997) views Kipling somehow differently and talks about Kipling's impression on readers that gets changed with the changeability of time and social perspective. "In Kim," writes Said, "you have the impression that time is on your side because the geography is yours to move about in more or less freely, although just the opposite may be true as well, that Kipling has rendered a control of space through a freedom of movement in time" (p.159). From this post-colonial perspective of Said, Kipling is more engrossed in modifying the Western perspective and Indian realities from his own imperial view.

So, the Anglo-Indian relationship in Kim seems in a new dimension. The 'Great Game'- the British Intelligence activities in India can be taken as a realization of British rulers on the need of complying effects the imperial strategies to continue the control over the territory and people as far as possible. So, the authority reflected through Mr Bennett and colonel Creighton in employing and engaging both the natives like Hurree Babu, Mohamadian and English boy Kim exemplify British imperial effort for continuation of its rule and its domination. Along with this the growing relationship particularly between the Tibetan Lama and Kim is growing concern of cultural assimilation psychology. Even in this reflection Kipling presents imperial attitude of British cultural superiority. This is subtly and symbolically exposed through elderly British museum curators offering of his spectacle to the Lama at Lahore.

The cultural superiority of the British people is also prevalent throughout the novel. The Lama's realization of Kim's intelligence and bold action, assistance to him and Kim's

accompany, Kim success of saving Lama form the Russian spy to Lama in search of the Holy River is an example of British guidance and wits. This is what Kipling endeavors to establish English identity in Indian or colonized territory. When Lurgan Sahib, tempts Kim, in order to taste his resolution in the 'Great Game', Kim resists in, with a firm affirmation that he is a Kim, a sahib. Creighton recognizes immediately in Kim's ability for disguise and discretion the potential for the boy's role in the Great Game. The lama, initially uncertain and indeterminate in having chance of being accompanied with his "Little Friend of All the World" one of the affectionate sobriquets the natives have given Kim, one which was given to Kipling himself (Ricketts, p.13) - understands that Kim does not hide and hate "English" heritage. Therefore, the Lama decides to help the boy by donating money for the boy's formal education in Saint Xavier High School, which was mainly meant for the English children. This new development of the scenario about the life of Kim gradually helps Kim become more practical and be more responsible for ascertained duty.

Of course, Kim in his childhood maintains a Sahib's status in the streets. In the same spirit plays the Great Game on later stage well. Thus, Kipling never forgets that Kim, though born and brought up in India from British blood and shows great sympathy and assimilation spirit in oriental cultural identities, acts an inseparable agent of British India. Colonel Creighton, Mahbub, Hurree Babu stand as a part of the British colonialism, the representative figures and working agents of British empire. In comment of these two worlds in Kim- the world of imperial rulers and the colonized subjects Edmund Wilson (1964) says:

> Now what the reader tends to expect is that Kim will come eventually to realize that he is delivering into bondage to British invaders, those whom he has always considered his own people and that a struggle between allegiances will result. Kipling has established for the reader and established with considerable effect- the contrast between the East, with its mysticism and sensuality, its extremes of saintliness and roguery, and the English, with their superior organization, their confidence in modern method, and their instinct to brush away like cobwebs in native beliefs. We have been shown tow entirely different worlds existing side by side, with neither really understanding the other and we have watched the oscillation of Kim, as he passes to and from between them. (p. 65)

Kipling description of India gets divided into two forms: the first, identity of India is reflected through ambivalent feeling that Kim shows. The ambivalence is in the perception of India. Many Britishers who visit India first time recognize India's immediate reality; the apparent characteristics of people, its culture and other topographical features. Likewise, they show

deep desire to know India, being not fully satisfied with what they have known so far is a kind of ambivalent feeling some post-colonial discourse makers like Bhabha (1994) talks about (p.86). Rudyard Kipling is mostly described as a "the bard of the Indian Empire (Hobsbawm, 1989, p. 82) but he has often presented ambivalent attitude; for he could not always and absolutely appreciated the English approach of changing 'other worlds', and presented India in his narration as a best place" (Sullivan, 1993, p.3). The concept of English superiority in the initial pages of the novel soon gets changed. Kipling presents Kim as a boy who wants to seek his identity not only through English figures, but primarily through oriental figure.

A Buddhist Lama from Tibet, who is in search of Holy River, perceives Kim as an adventurous spirit of an English boy on the one hand, and an assimilation approach to an Indian culture and context. Therefore, the Lama becomes his trove, who proposed to take possession (Kipling, p. 22). The relationship is established thus because the "in-betweenness of identity" (Bhabha, 1994, p. 219)- of Kim as an English boy by blood and somehow in behavior but Indian in appearance, language and somehow in feeling, is shaped through ambivalence. So, Kim's personality is drawn in betweenness of Englishness and Indianness. The two worlds in Kipling's perception, the English world and its culture, the Indian and its oriental feature go simultaneously. His native-ness features of India are beautifully seen in Kipling's narration. "The woman who looked after him insisted with tears to slip into Hindu or European clothes-trousers, a shirt, and a battered hat. Kim found it easier to slip into Hindu or Muhammadan grab when engaged on certain business" (p. 493). Though Kipling may not have deliberately planned to hybridize Kim from the colonial consciousness, yet the colonial mentality of seeing Kim as orientally dominated and hybridized in India is beautifully expressed through the Lama's words, "A sahib and the son of Sahib.... No white man knows the land and the customs of the land as thou knowest.... (Kipling, p. 124)." Kim is perceived as European by the Lama; but Kipling presents him sometimes, also to the eyes of some Europeans, as an Indian boy in disguise of European fashion. So, Kim is 'in- between' the English cultural behavior and oriental influence of socialization from which hybrid characteristic is clearly seen generating un-decidability from his behavior: whether he is an Indian or an English boy. Each of the place he gets does generate an indication of his belonging to 'other word' even if he is well adjusted and behaves and even 'drinks' from a cup in a native fashion (p.25). For Indians, mostly he is native Indian and he is trying to deceive them by claiming European. Thus, the novel has endowed with the situation that major groups in it- the English, the Hindus and the Muslim-everyone in Kim is equally an outsider to other groups and an insider in his (Said, 1979, p.

187).

Becoming outsider and insider according to the situation and perception of the people around, Kim becomes a figure of cultural plurality that leads him sometimes in dilemma of identity who could not decide at a moment what he really is, "What am I?" Muslim, Hindu, Jain or Buddhist? That is a hard knot" (Kipling, p. 192). At some moment he thinks himself solely 'Kim' for he could not completely assimilate in any cultural group of India. And the question persistently go in him "No I am Kim" (p.159). So, Kim's position among people as well as his own perception about himself changes, becoming sometimes outsider and sometimes insider in the multiple cultural groups of India. Likewise, he gets sometimes regarded as English and occasionally denied as an English man. The identification of Kim as Other therefore stands in between whiteness and Indianness. The stereotypical approach in identifying white man through white complexion is not apparent in Kim that's why some white people interpret his appearance thus: "you see, Bennott, he's not very black ... it is possible that I have done the boy (Kim) injustice. He is certainly white, though evidently neglected (p.117-118). The native in India also identify him in similar way; they also regard white skin and fair hair as stereotypical features of English or European once a native in reporting Kim presence outside the barrack of English at Simla says, "There is a white boy by the barracks waiting under a tree who is not a white boy (p.136). Such an ambivalent appearance to the eyes of both English and Indian resembles to the ambivalent feeling of Kim himself" to his own identity. And this ultimately leads to his hybridity condition, 'I don't want to be a Sahib' (p.145). Not only physically, Kim transforms from one set of values to another and returns back to previous former value system once again and this process of becoming into double consciousness is throughout the novel, to which Edward Said comments that Kim is "a character who can sportingly cross lines and invade territories a little friend of all the world- Kim O'Hara himself, it is as if by holding Kim at the centre of the novel .... Kipling can have and enjoy India in a way that even imperialism never dreamed of (p. 188). Thus, as a 'little friend of all the world'. Kim plays double roles- the role model of an English boy and of Indians which sound often "incompatible, mutually exclusive and

capture exactly the inimical dilemma of empire" (Sullivan, 1993, p. 157). In short Kim often gets into an English of ambivalent and generates feeling of hybrid situation and assimilation. This situation of Kim's ambivalence and assimilation to some extend to India culture is deliberate strategy of persuading the native to gradual acceptance of English culture and assimilation to it.

The concept of hybridity and assimilation is booted up with the oriental view of English people to Kim: seeing characteristics of Indians in Kim. If we observe Kim from the European perspective, he sounds to be truly a little friend of all the world because he is presented relatively as an all-knowing character, "Kim would i.e. like an oriental; .... Kim is ability to sleep as the trains roar is an instance of 'the oriental indifference to mere noise'" (Said, 1979, p. 81). European superiority is arrogantly presented by Kipling when he says, "I have never seen white soldiers and they would never harm people except when drunken. The English do eternally tell the truth" (Kipling, p.188). This kind of stereotypical image of English people to define English is a powerful presentation of Kipling in the novel. Therefore, the identity discourse in post-colonial analysis has been generated in explanation of making demarcation between longing and reality.

The condition in which reality is beyond perception instigates mimicry of the character. Representation of something leads to mimic way of presentation as Homi K. Bhabha (1994) has defined. But in this novel, the mimicry seems to be fulfilled by repetition of English people to the concept that they understand the Indian people well. Hybridity is clearly seen in Babu Hurree, due to the context produced by meeting of the West and the East. Kipling himself, unknowingly from modern post-colonial perspective, comments:

> Decidedly Hurree is an original.... He is like the nightmare of a Viennese courier[...].
> He represents in little India in transition- the monstrous hybridism of East and west[...].
> He has lost his own country and has not acquired any other. Be he has a most complete
> hatred of his conquerors. Listen, he confided to me last night."(Kipling, p. 286).

Babu Hurree's combination of East and West- by working as an active Secret Service agent of the English ruler, and having the feeling of doing sincere service to the nation is the oriental and the European, generated in between resistance and assimilation spirit. The English people see themselves objectified in the behavior of Babu Hurree. Whatever service in disguise he performs, it becomes to his own attitude, his pure service to the state, for he could not realize himself being changed into member of the Secret Service of the colonial rulers. He feels pride of his survive and says, "I have done the state some service" (Kipling, p. 290). This

confidence in Babu is not taken as pure service but just an obedience of the oriental to the colonial ruler. Similarly, hybridity is rather best expressed in Kim's personality because he embodies both cultures- his desire to assimilate himself in India through his accompaniment with Teshoo Lama and his active involvement in missionary job of spying and occasionally reflecting himself as an English boy. This cultural hybridity of Kim O'Hara is complex. He makes a recurrent question- 'Who is Kim?' and possesses an elusive answer because it is a human psychology to question oneself occasionally yet no one may be completely aware all the time with a single identity of oneself. Kim in the novel asks this question three times and gradually comes to realize the physical world around him, the influence and shaping of his personality by the world of British-India which to him is itself a hybrid reality or experience, which has been much different from his boyhood experience.

Cultural assimilation in form of understanding differently from the earlier experience takes place through various characters in the novel. The everyday reality of India has been a power to bring different but more realistic impression on the characters. The ending pages of the novel show that the elderly Buddhist lama finally finds out the Holy River, which in his belief can purify his body and desire. Moreover, it will generate transcendental ecstasy of his journey with Kim. The Lama assimilates himself with the higher sail of Buddhist doctrine not only through the knowledge from intellectual teaching but also through practical experience. A deeper sense of assimilation has taken place between the Lama and Kim from the former's perspective. The novel concludes with the Lama's revealing to his dear Chela Kim that he is quite happy in Kim's success in protecting him from the unexpected Russian spies. The entire situations through which they have passed have been relatively satisfactory. And in the Lama's understanding, it is a kind of spiritual unification between people of similar wishes and intention as they are true to each other. The Lama says:

> I saw all Hind, form Ceylon in the sea to the hills and my own painted Rocks at such-zen; I saw every camp and village, to the last, where we have ever rested. I saw them at one time and in one place; for they were within the soul. By this I know the soul has passed beyond the illusion of Time and space and of things. By this I knew that I was free. (Kipling, p.288)

This is an assimilation of faith, knowledge and experience. Likewise, Kim's experience through travelling with the Lama at different places, and particularly, in the north-west frontier that brings encounters with Russian and French intruders, purifies his mind with the knowledge that he could become a successful figure of the English Secret Service on the one hand and his

realization of the world he has been for long and its contribution to the knowledge he has got so far, in a sense, brings unification of his mind and heart on the other. And this is an assimilation of ignorance and experience to more confidential reality. Another example of assimilation can be seen in the 'brotherhood' relation of an intellectual Western man Col. Creighton and Teshoo Lama, a religious intellect from Tibet. Col. Creighton works as director of the Ethnographical commission of English people in India. He also acts as grand master who involves in 'Great Games' in India. The Lama knows Creighton as a worthy man to handle English ways of doing India.

CONCLUSIONS

Post-coloniality in *Kim* reflects from the first page of the novel. Kipling's attempt to establish the superiority of English empire is dominantly portrayed through Kim's bold defiance of the municipality rules by sitting astride the gun Zam-Zammah and kicking of a native boy. This is an effort to establish impression on Indians about the power of English as well as the legitimization of English actions in the oriental world. Nevertheless, Kim's crisis lies in -between of his conscious struggle of identifying as an English boy and assimilating himself in the Indian cultural world, for he continuously makes favorable choice of using native language and Indian dress- up habits and he often undergoes with an ambivalence feeling of mimicry and hybridity.

However, Rudyard Kipling in *Kim* has presented a context directed to rationalize that imperialism in India has been for humanitarian purpose and therefore relationship between the British rulers and their Indian subjects has been relatively more amicable. Kipling has keenly presented many examples of consent between the rulers and the ruled to improve both social, political and economic conditions. Yet, implications of growing misunderstanding incompatible to English and Indian peoples have been consciously and unconsciously indicated as imperatives of the historic separation between the two. Kim's growing interest to the British Secret Service and ultimately involvement with a full spirit of Englishness by diplomatically exploiting the natives shows that Kipling's attitude to India ultimately becomes an imperial effort to rationalize colonialism in India. This indicates that struggle for cultural identities of both the natives and of the Anglo-rulers was highly unavoidable. Along with such an indication of incompatibility of interests, growing cases and contexts of hybridization and desire for cultural assimilation are also brewing up. Thus, Kipling proves himself to be standing in-between imperial and post-colonial realities. However, he seems

facing towards imperial support in resisting decolonization efforts and sounds more liberal in cultural assimilation. By showing liberal attitudes to the natives' as well as the Anglo -Indians' inclination to cultural assimilation, he intends to enable the colonizers to assimilate the native gradually to colonizer's culture because in every relation between native and English ruler, the domination is of the latter.

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Review Article

A Review on the Ingredients of Triphala (Harro, Barro and Amala)

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ABSTRACT

Triphala is a poly-herbal formula made up of three equal proportions of herbal fruits, Harro, Barro, and Amala, found in tropical and sub-tropical regions of Asia. This study aimed to review the phytochemicals, potential uses, and constituents of Triphala using PRISMA standards. Data was collected from well-known bibliometric information sources. All the obtained information was analysed systematically and represented in a tabular and descriptive form. The result shows that the main chemical constituents of Triphala include Vitamin C, carotene, nicotinic acid, riboflavin, tannins, tannins, anthraquinones, polyphenolic compounds, and gallic acid, tannic acid, and glycosides. Triphala is crucial for balancing and rejuvenating three constitutional elements that govern human life. Its biological activities include anti-microbial, anti-oxidant, anti-arthritic, anti-stress, antipyretic, analgesic, anti-diarrheal, gastrointestinal protective, hepatoprotective, anti-hyperglycemic, cardioprotective, hypolipidemic, wound healing, antineoplastic, radio-protective, chemoprotective, chemopreventive, mutagenesis and DNA damage prevention, anti-cataractogenesis, anti-lipid peroxidative, free radical scavenging, and anti-inflammatory. Triphala is a novel drug with numerous therapeutic potentials, effective in maintaining health, preventing diseases, and treating various ailments. This herbal aptitude of Triphala promotes the development of a medical system with minimal side effects. Therefore, it is necessary to ensure that the local population is provided with accurate information regarding triphala.

Keywords: *Ayurveda, constituents, disorder, herbal, Phyllanthus, phytochemicals, Terminalia, therapeutic.*

INTRODUCTION

Triphala, which derives its name from the Sanskrit term for "three fruits," is a combination of three plants' dried fruits in equal parts: *Terminalia chebula* (Harro), *Phyllanthus emblica*

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(Amala), and *Terminalia bellerica* (Barro) (Nadvi et al., 2023). According to Ayurveda, it is a Tridoshic Rasayana capable of restoring harmony to and revitalizing the three constitutive forces that control human life., which are Vata (energy of movement), Pitta (energy of digestion and metabolism), and Kapha (energy that forms the body's structure) (Kumar et al., 2017). The formulation's three rejuvenating herbs, or rasayanas, are soo complex allowing it for many applications promoting longevity and rejuvenation in patients of all constitutions and ages (Peterson et al., 2017).

It is used as a blood purifier and is effective in headache, dyspepsia, leucorrhoea, ascites, and curing cataracts (Kumar et al., 2016). Triphala is found to have the capacity to provide hepatoprotective benefits. (Nadvi et al., 2023). Moreover, Triphala treats periodontal diseases. Not only that, but it is also known for the anti-microbial, anti-oxidant, anti-arthritic, anti-stress, antipyretic, analgesic, anti-diarrheal, gastrointestinal protective, hepatoprotective, anti-hyperglycemic, cardioprotective, hypolipidemic, wound healing, antineoplastic, radio-protective, chemoprotective, chemopreventive, mutagenesis and DNA damage prevention, anticataractogenesis, anti-lipid peroxidative, free radical scavenging, and anti-inflammatory activities (Baliga et al., 2012). The principal chemical elements included in this formulation are phenolics (25–38%), primarily tannin (35%), gallic acid (3–7%), ellagic acid (~2%), chebulagic acid (~5%), chebulinnc acid (~5%) and a significant amount of ascorbic acid (0.050–0.33%), flavonoids and saponin (Sharma, 2015).

Triphala can be used in variety of ways such as Triphala churna (powder form), Kwatha (decoction), Taila (oil), Mashi (ash), Gritha (Triphala cooked with clarified butter or Ghee) (Gahatraj et al. 2020) and also as a tablet (Prakash & Shelke, 2014). However, many studies of triphala and its phytochemicals' mechanisms of healing have not been thoroughly examined. Therefore, the purpose of this paper is to examine the phytochemicals and possible applications of Triphala and also to know the ecology and distribution patterns of constituents found in Triphala.

DATA AND METHODS

This study followed the PRISMA guidelines for systematic literature reviews and data-analyses. The information regarding Triphala and its ingredients was collected from secondary sources. Popular bibliometric information sources were used to download the related articles. For this a strategic combination of keywords and controlled vocabulary terms was employed to search the research papers. Studies were considered for inclusion if they provided insights

into the desired properties. Exclusion criteria were applied to filter out studies not directly related to the specified focus or lacking relevance to the research objectives. Only published papers from the year 2010 to 2024 were used as reference for this study. After gathering the data, analysis was done by categorization and comparison with other relevant articles and represented in tabular and descriptive form. The methodology is presented in a PRISMA flowchart as shown in figure 1.

Figure 1

Prisma Flowchart Showing Methodology
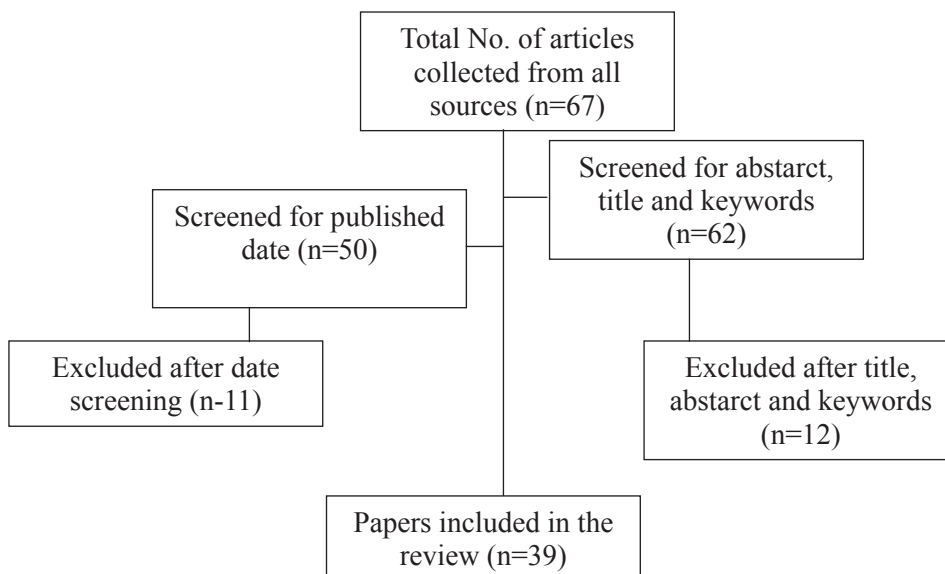
RESULTS AND DISCUSSION

In this article we discussed the three ingredients of Triphala which are *Phyllanthus emblica, Terminalia chebula,* and *Terminalia bellirica*.

### 1.	Phyllanthus emblica (Amala)

Amala is a deciduous tree of the Phyllanthaceae family. The taxonomic classification of Amala is shown in table 1. It is referred to as emblic myrobalan in English, Nellikkai in Tamil, amala in Nepali, aamla in Gujrati, amalaka in Sanskrit and amla in Hindi (Gupta et al., 2014).

Table1

Taxonomy of Amala

Kingdom	Plantae
Division	Flowering plant
Class	Magnoliopsida
Order	Malpighiales
Family	Phyllanthaceae
Tribe	Phyllantheae
Subtribe	Fluegginae
Genus	Phyllanthus
Species	*P. emblica*

Distribution and ecology of Amala

The Indian gooseberry, or *Phyllanthus emblica Linn.*, is a member of the Euphorbiaceae family. It grows in a mixed forest of the tropical and subtropical region at an elevation of 150-1400 m (Gaire & Subedi, 2014). It thrives in saline-sodic soil and other circumstances typical of wasteland, and the fruits are readily available for more than ten months (Gantait et al., 2021)

Uses of Amala

Amala is popularly utilized in the medicinal, culinary, and cosmetic industries (Gul et al., 2022). All parts of Amala (leaves, bark, flowers, roots, and fruits) have several uses in different medicinal systems like Ayurveda, Unani, Sidda, etc., but fruits are mostly used (Dasaroju & Gottumukkala, 2014). It is frequently employed in traditional Tibetan medicine to address issues with the liver, kidneys, and bladder (Wu et al., 2021). Its uses for improving memory, treating respiratory, skin, and ocular conditions, and detoxifying-including detoxifying from snake venom-are also highlighted (Ahmad et al., 2021). It is used to treat hyperactive gastrointestinal disorders like diarrhea (Mehmood et al., 2011), jaundice, inflammation, and control hair fall (Pariyar et al., 2021). Similarly, it is intensely used to treat jaundice, eczema, nausea and vomiting, acts as skin lighter, and prevents hair graying (Mirunalini & Krishnaveni, 2010). Amla shows biological effects like anti-microbial, anti-oxidant, laxative, anti-diabetic, anti-inflammatory, hypocholesterolemic, analgesic, antipyretic, hypo-lipidemic, hepatoprotective, antiproliferative, immunomodulatory, anti-cancer, cardio-protective, antitussive, neuro-protective and chondroprotective (Bag et al., 2013; Gaire & Subedi, 2014).

Phytochemistry of Amala

Phyllanthus emblica is high in polyphenols and minerals and is considered the best source of vitamin C (Charoenteeraboon et al., 2010). It provides an outstanding amount of bioactive molecules such as acid (vitamin C), flavonoids, phenolics, terpenoids, tannins, rutin, curcuminoids, emblicol, phyllembelic acid, phyllembelin, emblicanin A, emblicanin B, ellagitannin, ellagic acid, gallic acid, essential amino acids, and alkaloids (Kumar et al., 2016). Major chemical constituents of *P. emblica* are shown in table 2 with its nutritional value (see table 3).

Table 2

Chemical Constituent in P.emblica Fruit

Type	Chemical constituents
Hydrolyzable Tannins	Tannins Emblicanin A and B, Punigluconin, Pedunculagin, Chebulinic acid (Ellagitannin), Chebulagic acid (Benzopyran tannin), Corilagin (Ellagitannin), Geraniin (Dehydroellagitannin), Ellagotannin
Alkaloids	Phyllantine, Phyllembein, Phyllantidine
Phenolic compounds	Gallic acid, Methyl gallate, Ellagic acid, Trigallayl glucose
Amino acids	Glutamic acid, Proline, Aspartic acid, Alanine, Cystine, Lysine
Carbohydrates	Pectin
Vitamins	Ascorbic acid
Flavonoids	Flavonoids Quercetin, Kaempferol
Organic acids	Citric acid

Source (Dasaroju and Gottumukkala, 2014)

Table 3

Nutritional Value of Fruit of P. emblica (% or per 100g)

Chemical components	Percentage
Moisture	81.2%
Protein	0.5%
Fat	0.1%
Mineral matter	0.7%
Fibre	3.4%
Carbohydrates	14.1%
Bulk elements Mg/100g	Net weight

Calcium	0.05%
Phosphorous	0.02%
Iron	1.2 mg/100g
Nicotinic acid	0.2 mg/100g

Source (Singh et al., 2012)

2.   Terminalia chebula (Harro)

T. chebulo is a tracheophyte of order Myrtales and family Combretaceae (see table 3).

Table 4

Taxonomy of Harro

Kingdom	Plantae
Division	Tracheophyta
Class	Magnoliopsida
Order	Myrtales
Family	Combretaceae
Genus	Terminalia
Species	*T. chebula*

Distribution and Ecology of Harro

Terminalia chebula, also known as black myrobalans, Haritaki (Sanskrit), and Harad (Hindi), is a medium to large-sized tree found throughout tropical and subtropical Asia, including China and Tibet. It is only found naturally on the Indian subcontinent and its adjacent areas, such as Pakistan, Nepal, and southwest China. (Rathinamoorthy & Thilagavathi, 2014). It occurs at an altitude of 1500-2000 m and is found on various soils, clayey and shady.

Uses of Harro

Due to its exceptional healing abilities, Terminalia chebula is known as the "King of Medicine" in Tibet and is frequently ranked first in Ayurvedic material medicine (Upadhyay et al., 2014). The fruit powder is used to treat jaundice, colic, asthma, hoarse voice, hiccups, vomiting, diarrhea, abdominal distention, cough, fever, pneumonia, tuberculosis, and gas. In contrast, the paste can be used for chronic ulcers, wounds, and scalds (Ashwini et al., 2011). *T. chebula* mouth rinse effectively reduces microbial plaque and gingival inflammation and neutralizes salivary PH (Gupta et al., 2014). Similarly, it has high cosmetic use due to its properties of Haile melanin inhibition, anti-inflammatory action, and cellular ageing inhibition (Muhammad et al., 2012). Some of the biological activities shown by *T. chebula* are: anti-

bacterial, anti-fungal, anti-amoebic, immune-modulatory, molluscicidal, anti-helminths, anti-viral, anti-mutagenic, anti-carcinogenic, anti-oxidant, anti-diabetic, anti- anaphylactic, anti-nociceptive, anti-ulcerogenic, anti-arthritic, wound healing, cytoprotective, radio-protective, cardio-protective, hepato-protective and anti-spermatogenic (Basha & Code, 2017).

Phytochemicals of Harro

T. chebula plant includes a number of constituents like tannins, flavonoids, sterols, amino acids, fructose, resin, and fixed oils (Ashwini et al., 2011). It has a high concentration of tannin (99.55456 mg/gm) (Saxena et al, 2013) which accounts for about 20-40%of the total phytoconstituent. It is rich in gallic acid, ellagic acid, anthraquinones, triterpenoids, and other miscellaneous compounds like palmitic acid, stearic acid, linoleic acid, and arachidic acid (Walia & Arora, 2013) as shown in table 5. A good concentration of mannitol and ascorbic acid (vitamin c) is also found in *T. chebula* (Saha & Verma, 2016).

Table 5

Phytochemicals in T. chebula

Hydrolyzable tannin	Gallic acid, chebulagic acid, punicalagin, Chebulanin, corilagin, Neochebulinic acid, ellagic acid, chebulinic acid, 1,2,3,4,6-penta-O-galloyl-β-D-glucose, 1,6-di-o-galloyl-D-glucose, casuarinin, 3,4,6-tri-o-glloyl-D-glucose, terchebulin
Phenolics	Chebulinic acid, ellagic acid, and anthraquinones
Polyphenols	Corilagin, Galloyl glucose, punicalagin, terflavin A, maslinic acid
Fatty acids	Mainly palmitic acid, linoleic acid, and oleic acid
Triterpenoid glycosides	Chebulosides I and II, arjunin, arjunglucoside, 2α-hydroxyursolic acid, and 2α-hydroxymicromiric acid also have been reported

Source (Bhattacharyya and Chattopadhyay, 2013).

3. Terminalia Bellerica (Barro)

Barro is a deciduous Tracheophyte of family Combretaceae (see table 6).

Table 6

Taxonomy of T. Bellirica

Kingdom	Plantae
Division	Tracheophyta
Class	Magnoliopsida

Order	Myrtales
Family	Combretaceae
Genus	Terminalia
Species	*T. bellirica*

Distribution and Ecology

  Terminalia bellirica Roxb., also called Bahera, Beleric, or bastard myrobalan, is a large deciduous tree that is commonly found in Southeast Asia's plains and lower hills. It can also be found grown as an avenue tree (Kumar and Khurana., 2018). It is a member of the Combretaceae family of the Rosales order. Details are shown in table 7.

Table 7

Biophysical Limits of T. bellirica

Altitude	0-200
Mean annual rainfall	900-3000mm
Mean annual temperature	22-28 degree C
Soil type	Fertile soil and good drainage

Source (Sharma et al., 2021)

Uses of Barro

  The fruit of *T. bellirica* has been used in traditional medicine to treat anemia, asthma, colic, constipation, diarrhea, dysuria, headache, hypertension, inflammation, rheumatism, and diabetes mellitus (Latha, 2014) due to its various medicinal properties (see table 8). It is renowned for its wound healing and anti-cancer activities (Li et al., 2018). It is also used for hepatitis, bronchitis, dyspepsia, piles, coughs, hoarseness of voice, eye diseases, scorpion-sting, and as a hair tonic (Deb et al., 2016).

Table 8

Medicinal properties of T. bellirica

Pharmacological activity	Plant part	Extract
Analgesic activity	Fruit	Aqueous-Methanolic
Antibiofilm activity	Plant	Ethanolic
Anticancer activity	Plant	Extracts
Antidepressant activity	Fruit	Aqueous/Alcoholic
Antidiabetic activity	Fruit	Methanolic
Anti-diarrhoeal activity	Fruit pulp	Aqueous and Ethanolic

Antifertility activity	Fruit	Ethanolic
Antiandrogenic activity	Fruit	Ethanolic
Antifungal activity	Fruit	Ethanolic
Anti-helminthic activity	Fruit	Aqueous and Ethanolic
Antihypertensive effect	Fruit	Extracts
Anti-inflammatory activity	Whole plant	Extracts
Antimicrobial activity	Fruit	Aqueous
Antimutagenic activity	Whole plant	Water, acetone, and chloroform
Antioxidant	Fruit	Methanolic
Antipyretic activity	Fruit	Aqueous/Alcoholic
Anti-salmonella activity	Fruit	Aquous/Alcoholic
Antisecretory activity	Fruit	Aqueous-Methanolic
Anti-spasmodic and bronchodialatory	Fruit	Methanol/water
Antithrombotic and thrombolytic activity	Fruit	Aquous/alcoholic
Antiulcer activity	Fruit	Ethanolic
B-lactamase inhibitor activity	Plant	Methanolic
Glucoamylase activity	Fruit	Chloroform, Ethyl Acetate
Hepatoprotective activity	Fruit	Methanolic
Immunomodulatory activity	Bark	Ethanolic
Wound healing	Fruit	Fruit Paste
Coughs, Spleen, Dysentery, Gastrointestinal disorders, Clear bowels, Flatulence	Fruit	Aqueous

Source (Kadian et al., 2014)

Phytochemistry of Barro

Some of the primary chemicals found in *T. bellirica* are Glucoside (bellericanin), Gallo-tannic acid, Coloring matter, resins, greenish-yellow oil, ellagic acid, gallic acid, lignans(termilignan and thanni-lignan), 7-hydroxy 3'4' (methylenedioxy), flavone, anolignan, Tannins, ellargic acid, ethyl gallate, galloyl glucose, chebulaginic acid, phenyllemblin, β-sitosterol, mannitol, glucose, fructose, rhamnose (Saraswathi Motamarri et al., 2012) as shown in table 9.

Table 9

Phytochemicals in T. bellirica

Compounds	Chemical constituents
Flavone	7-hydroxy 3', 4' (methylenedioxy)flavone , luteoline
Steroids	β- sitosterol
Lignins	Termilignan , thannilignin, anolignan B
Tannins	Gallic acid, ellagic acid, methyl gallate, ethyl gallate (Phenyllemblin), chebulagininc acid, chebulagic acid, hexahydroxydiphenic acid ester
Glycosides	Fructose, sucrose, galactose, D-glucose, mannose, rhamnose
Terpenoids	Belleric acid , chebulagic acid, arjungenin
Saponins	Bellericoside and bellericanin
Cardenolide	Cannogenol 3-O-β-galactopyranosyl-(1→4)-Oα-L-rhamopyranoside
Flavonol aglycones	Quercetineand kampferol
Flavonol glycoside	Quercetin-3-O-[6''-α-L-rhamnopyranosyl]-(1→6)-β-D-glucopyranoside (rutin), quercetin3-O-α-L-rhamnopyranoside, quercetin-3-O-βD-glucopyranoside and kaempferol-3-O-β-Dglucopyranoside
Fatty acids present in the oil	Palmitic acid, linoleic acid, stearic acid, myristic acid, and oleic acid
Glycerides of fatty acids	Palmitooleolinolein, stearo-oleolinolein, palmitodiolein, stearodiolein, dioleolinolein and triolein

Source (Kumari et al., 2017)

CONCLUSIONS

Triphala is a novel drug with a myriad of therapeutic uses which is not only used for treating various illnesses but also for preventing diseases and maintaining homeostasis in humans. The phytochemical research has revealed the existence of potent phytochemicals such as sugars, tannin, alkaloids, phenols, flavonoids, terpenoids, glycosides, and saponins, etc. According to some authors, bioactive principles include phenolic acids, flavonoids, terpenoids, steroids, and flavonoids. The combination of knowledge from traditional uses and the array of scientific studies of its phytochemicals have revealed the significant potential of Triphala with minimal side effects. However, detailed scientific inquiry and research are still

required into various aspects of knowing its pharmacological and clinical effects so that the people get maximum benefits from this without having any side effects.

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Impact of 2015 Earthquake on the Shifts in Internal and International Relations of Nepal

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ABSTRACT

The devastation generated by the 2015 Nepal Gorkha earthquake greatly affected the country's politics and security, impacting the lives of around 8 million individuals with 9000 recorded deaths, more than 22 thousand injured. Thousands of private houses, public building, cultural heritages and critical infrastructures were damaged. More than 30 districts of Nepal felt the surmounting consequences of the terrible aftershocks. The aim of the paper is to evaluate the shifts within the domestic discourse in Nepal's political happenings and also to look at the role of global actors in the humanitarian efforts in the country, filling the gaps left by state actors in the kerfuffle. The Constitution and the call for assistance by the central government were important in guaranteeing a certain kind of post-disaster stability and restoring as well as uplifting public morale and belief in the state systems. Adopting a qualitative method, through an analytical lens the study looked at the overall impact of the quake on Nepal's politics and the trends of bilateral, regional and global assistance, focusing on the major donor agencies and the role of Nepal's neighbouring states. There were several new developments and outlooks with regards to both state interests and the framework of disaster response. The paper also recognizes the importance of regional integration either by means of institutional instruments or through some other measure alongside a cohesive internal policy arrangement amongst the parties for future strategies aiming at effective disaster reduction and response.

Keywords: *Assistance, disaster response, domestic politics, earthquake, Nepal.*

INTRODUCTION

Nepal is the 11th most earthquake prone country in the world, and the 2015 earthquake was one of the biggest natural disasters the state has faced since 1934 (PDNA, 2015). The country's vulnerability to such incidents is accentuated owing to its demographic and socio-economic conditions. The April 25, 2015 earthquake had its epicentre in Barpak, Gorkha,

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and as per the *PDNA* (2015) prepared by the National Planning Commission Nepal, post-disaster, the quake and aftershocks resulted in around 8,790 deaths, 22,300 injuries, altogether affecting more than 8 million people, marking 14 out of 75 districts in the country as the "worst-affected" and 17 as "partially-affected."

Public and private infrastructures, including homes, schools, hospitals, roads, bridges, hydropower plants, water supply system, and trekking routes were ruined. *PDNA* also assessed the damage done to the cultural sites, preserved monuments and centuries-old buildings, including seven UNESCO World Heritage sites, concluding that the cost of reconstruction and further preservation would reach approximately USD 6.7 billion. The earthquake had multidimensional effects. Politically, it created a significant pressure on political parties to draft and implement a constitution, assuring stability. Economically, it had an adverse effect on an already fragile economy. On March, the Asian Development Bank (ADB) had predicted a 4.6 percent growth for the fiscal year 2015 and post the quake, the new projection showcased a sharp decline, at 4.2 percent (Sapkota, 2015). The *PDNA*, updated in 2019, also assessed that the economic losses amounted to USD 9.4 Billion and the total economic losses were estimated at one third of Nepal's GDP (National Reconstruction Authority, 2023). The World Bank projected in the fiscal year 2015-16, that an additional "2.5 to 3.5 percent of the population" - 700,000 people, had been pushed into poverty (PDNA, 2015).

The Government of Nepal as a response organized the International Conference on Nepal's Reconstruction (ICNR, 2015) two months after the earthquake (25 June) to generate international support for reconstruction (GoN, MoFA, 2016). The aim of ICNR was to acquire support from identified global partners for reconstruction. According to the Ministry of Finance, there were a total of "58 countries and agencies participated the conference" (MoF, 2015). Foreign Ministers from various countries, as well as delegations from major international organizations took part in the event (MoF, 2015). Aid pledges totalled USD 4.4 million from donor communities and partners for rebuilding (NRA, 2023). The largest pledge came from India with USD 1 billion, followed by China's pledge of RMB 3 billion (US$ 483 million) (MOFA, 2016). ADB pledged USD 600 million, World Bank, Japan, USA, EU and UK pledged 500, 260, 130, 117 and 110 million respectively (MoF, 2015)

The National Reconstruction Authority (NRA) later established on December 2015 was authorised to manage the entire process, overseeing coordination of the reconstruction projects that foreign government agencies were handling, additionally directing work of development partners, donors, volunteers, civil society organizations (CSOs), local authorities and private actors (NRA, 2023). The article attempts to

look at the changes within the domestic scenario caused by the quake and how the presence of actors from the global community helped to level out the situation on the ground through aid, regardless of autonomous interests – emphasizing the significance of good will in international relations. It is a study of how the Constitution was as much a response by the Nepali government to soothe public morale post-quake as the call for international assistance, and how both were meaningful for public safety and safeguarding their morale in the state's institutions.

DATA AND METHODS

The nation-wide chaos that resulted from the earthquake somewhat led to the formation of a pivotal document in the form of the Constitution, while the situation on ground was almost of despair, where while national efforts were important, global assistance somewhat allowed for the country to obtain some form of stability. The study was conceptualized with the intent to showcase the role of disasters in creating new political spaces in national politics and look at the ways in how policies directed two ways – one was the effort to politically stabilize the country by adopting a formal process to promulgate the Constitution and the other to call for international assistance to sort out the devastations that would have otherwise been a deterrent to the overall effort to ensure an impression of peace.

The documents that were incorporated are based on the immediate response accorded by the states, in consideration – statements of the persons of interest, i.e., government bodies, state representatives in relation especially to internal dynamics, as well as the response shaped in the wake of the disaster and the takes presented by the state and non-state actors regarding the various forms and means of international assistance. It has included state publications like reports, official press briefs, and the likes for the primary phase and built on the ideas with literature from verified and widely recognized articles, media outlets and formal reports from governmental and non-governmental bodies.

The paper has adopted a qualitative method whereby there has been a rigorous study of the literature and information has been taken from verified bodies of work, in order to substantiate the claims made. It is based on available documents and data within the period of disaster response and is valid in the scope of the study, as such that it relegates what the scenario was structured as in the political purview of the nation's resilience and capability, which saw some changes in the following years with regards to disaster preparedness. The research combines various methods within the qualitative data collection method. It looks back on the development of political manoeuvres and steps of the government bodies in ensuring

morale and relief by collecting and comparing information from the reports and statements state actors of how the situation was processed on the immediate aftermath of the quake, by an intensive review of literature. It undertook a form of content analysis in looking at how certain words and concepts like assistance and interests were framed in formal documents as well as media outlets.

RESULTS AND DISCUSSIONS

Impact on National Politics

In the first constituent election in 2008, the former revolutionary party, UCPN (Maoist) became the largest party in parliament and led the government. The first constituent assembly ended the 240 year-long monarchy, recognizing Nepal as a republic state. The UCPN (Maoist) led government could not rule long due to its confrontation with the Nepal Army and the assembly could not frame the constitution in the stipulated time because of the disagreement between major political parties on issues of federalism, form of governance, election model, etc (Mocko & Penjore, 2015). As a result, the second constitution election took place in 2013. The election was held by the bureaucratic government led by the Chief Justice as the political parties with increasing distrust in each other could not form their consensus government. The political parties were debating to finalize the long-standing issues in the second constituent assembly when the 2015 earthquake occurred and diverted their attention to the devastations, delaying efforts on the constitution-making process. However, the earthquake created pressure on them to sort out their differences faster and come to an agreement, while focusing on reconstruction.

With an urgency to begin reconstruction after the quake, Nepal's major political parties prepared a 16-point agreement on June 2015 opting for a resolution to their disagreements, moving towards finalizing the constitutional writing process and rebuilding the earthquake affected nation (Bhattarai, 2015). Many political leaders remarked along the line of the agreement that the constitutional deadlock had ended and they would focus on rebuilding (Mocko & Penjore, 2015, p. 211), resulting in the preliminary draft of the constitution. The massive earthquake of April 25 played a major role to accelerate the process. Regarding the issues of federalism, it was proposed and decided to divide the country into eight federal states. The rushed process, however, did mean that some states, particularly certain ethnic and indigenous communities in the Terai, did not agree with the reasons behind the demarcation of

the federal boundaries, and rose in protest asking for immediate revisions (Bhattarai, 2015).

Furthermore, before the earthquake, the Communist Party of Nepal (UML), the second largest party in the country, was in favour of directly elected prime ministerial system. Similarly, the Unified Communist Party of Nepal (Maoist) as the main opposition stood the against parliamentary form of governance. The UCPN (Maoist) on the other hand was demanding the mixed electoral model with 50 percent directly elected and 50 percent proportionally elected in the lower house of the parliament. After the earthquake, the CPN (UML) left their demand for directly elected prime ministerial system. And the UCPN (Maoist) gave up their stance and agreed to the parliamentary system and they also agreed with the model of 60 percent directly elected and 40 percent proportionally elected. It proceeded to define the current power structure in Nepal.

Due to lack of elected representatives in the local government bodies, issue rose with regards to the coordination required for the distribution of relief materials and rehabilitating the earthquake victims. With the realization, the absence of local representatives was resulting in unwanted disturbances, the political leaders decided to hold the local election (Shrestha & Pathranarakul, 2018). The election of local government had not been conducted since 1997.

Four of Nepal's largest political parties came to table to sign an agreement (Bhattarai, 2015) mere 45 days post the disaster, and after a little more than three months on September 20, the constitution was drafted (Hutt, 2020, p. 380). Accordingly, the process that was delayed for more seven years took over 100 days to be inked (Hutt, 2020). The preparation of the document took place in a setting of "resurgent post-earthquake patriotism" and call for "national unity" (Hutt, 2020).

While the document initially proceeded with a 22-point agreement between UCPN-M, NC and UML, dated May 15, 2012, it required for compromises to be made on vital issues that faced disagreements from numerous sides (Hutt, 2020). These differences were mostly centered on the "form of government (presidential vs parliamentary; bicameral vs unicameral); the judiciary (constitutional court vs Supreme Court); electoral systems", and so on. Hence, despite four extensions to its term of office and the installation and dismissal of five different coalition governments, the first CA failed to produce a constitution and was dissolved in May 2012 (CRC, 2015). There was also caution around the general agreement among politicians that the disaster could possibly result in intensified levels interference from foreign actors, because the state appeared weak (Hutt, 2020).

The NC, UML, UCPN-M and Madhesi Janadhikar Forum – Loktantrik then moved

swiftly on June 8, 2015 to develop and publish a 16-Point Agreement that could give the groundwork towards implementing the constitution in a 'fast track' manner (Bhattarai, 2015). As per the agreement, the constitution would define a federal structure demarcated by the federal commission, with eight provinces named by a majority vote on the provincial assembly based on five criteria of identity and four criteria of capability (Bhattarai, 2015). The form of government had been a point of contention for some time, but the UCPN(M) had proceeded to register a note of dissent later on instead of actively opposing it. There was a settlement to work taking forward the essence of the agreement, with the local bodies being elected at the earliest (Hutt, 2020).

Within the domestic political interests, Pushpa Kamal Dahal was quick to defend his party in the signing of the 16-Point agreement, as argued by Hutt (2020), noting the June 13 interview he conducted with Online Khabar (p. 389), crediting the "People's War" and the Maoists involvement within it for the enshrined ideas of secularism, federalism and inclusivity. He also noted that in the face of discontent within public sentiments towards the agitations in the state, the "earthquake gave the Maoists a 'good excuse' to change their position and compromise in the content of the constitution, on the understanding that it would thereby be promulgated speedily, leading to the break-up of the ruling coalition" (p. 390).

The Maoists moved nearer to the NC and UML positions as a consequence of the compromise deal of June 8, 2015 (Strasheim & Bogati 2016). The Chinese government was thought to have strongly opposed identity-based federalism as it feared a spill over of such ideas across Nepal's border to the Tibet Autonomous Region (TAR), and had hinted to the Nepali government to avoid such designs (p. 8). Just five months after quake, the long-delayed constitution was promulgated with a sizeable majority of the constitution assembly (Ruszczyk & Robinson, 2018, p. 4). The other part of the government response to the natural disaster came in the form of the *National Disaster Response Framework* (NDRF) that assimilated the prospects and limits of international assistance in domestic response, helping to set the role of the central government in responding to such threats.

Call for Assistance: International Response and Role in Assuring Stability

The *National Disaster Response Framework* (NDRF) published on July 2013 was a tool for coordinating the earthquake response, facilitating decisions and instruction from the central government (Ministry of Home Affairs (MoFA), 2013), during the process. This gave cause for the national state apparatuses to integrate global assistance within their efforts:

Figure 1

National and International Assistance and Coordination Structure
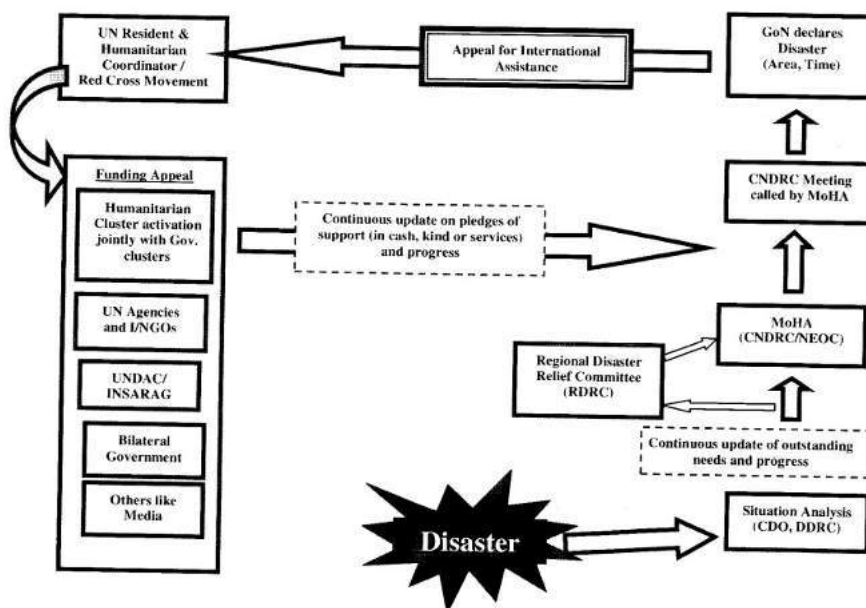
Source: NDRF, 2013, p. 5.

As illustrated in the figure, under directive 4 titled *International Assistance for Disaster Response*, GoN can request for international assistance in times of great crisis. The GoN can put forth an appeal to foreign governments, institutions, global agencies like the Red Cross Movement and the UN Humanitarian Coordinator as well as national and foreign citizens for assistance "in terms of cash or services to respond to disaster through concerted national efforts and intensified regional co-operation" (p. 4).

The cabinet post identifying emergency areas appealed to international communities for assistance, declaring custom exemption to relief goods and visa fee exemption to the search and rescue (SAR) Team members and humanitarian actors. The UN model agreement was taken as a base (MoHA, 2015). In response to the Nepali government's appeal, 34 countries gathered their resources and provided the much-needed support (GoN, MoHA, 2015).

Over time, 134 international SAR team from these countries answered to Nepal's request for help. According to the PDNA (2015), there were "for SAR, 4,236 helicopter flights were used (GoN/private, with 7,558 persons rescued by air and 4,689 persons rescued by land." Similarly, for SAR activities almost 90 percent of the security forces were directed towards it. Altogether, "22,500 civil servants, 65,059 staff of the Nepal Army, 41, 776 staff of Nepal

Police and 24,775 staff of the Armed Police Force, as well as 4,000 government and private health workers were mobilized to aid rescue and relief efforts" (PDNA, 2015).

Straightaway, the Nepalese Army moved towards establishing the Multi National Military Coordination Centre (MNMCC), helping in the organization of the international SAR that provided their services in the form of multinational military assistance (NA, 2015). Out of the many kinds of military assistance, air support was crucial, particularly because of the blocked and inaccessible routes that Nepal had trouble accessing through its limited air power.

The foreign military teams consisted of engineers, air support personnel, medical professionals and SAR experts from 18 different countries: Algeria, Bangladesh, Bhutan, China, Canada, India, Indonesia, Israel, Japan, Malaysia, Pakistan, Poland, Singapore, Spain, Sri Lanka, Thailand, UK, and USA (NA, 2015). Their assets comprised of 23 helicopters – India provided 13, China gave 3 and the U.S. provided 7. A total 966 tons of relief materials were delivered by foreign aircraft, and the medical teams delivered care to 27,390 people (NA, 2015). SAR teams saved 19 individuals and pulled out 135 bodies from the ruins (NA, 2015).

India, first to respond, dispatched a team that landed within hours of the disaster (PDNA, 2015), and made a substantial pledge during the International Conference in Nepal's Reconstruction organized in Kathmandu on June 25, 2015, to accumulate support for the post-quake reconstruction projects. Similarly, Nepal received immediate help and support from its northern neighbour China, and other South Asian countries Bangladesh, Sri Lanka, and Bhutan.

Teams from 14 countries with 1966 persons landed in Nepal withing the 72 hours of the disaster, and the rest came within a week (MoHA 2015). India had sent 23 military choppers and one C-17 aircraft, while teams from the U.S. and China were posted in Nepal for the entire period of the relief processes (NA, 2015). Relief came in the form of USD 483 million through China, USD 600 million through ADB, USD 260 million from Japan, USD130 million from the United States, and from World Bank through USD 500 million and European Union's USD 112 million for reconstruction (Sharma & Barry, 2015).

The broader humanitarian community also worked in Nepal considerably in that time. The UN bodies, ICRC, IFRC, MSF, Oxfam, World Vision, CARE International, International Medical Corps, and Save the Children provided assistance (Cook et al., 2016, p. 6). Amongst these institutions, several had worked in Nepal with their own local resources, and this was important when coordinating operations and workforces from afield.

A month post-quake, the World Food Programme (WFP) provided "3,100 metric tonnes

of relief goods such as shelter, medical supplies, food, water, sanitary and hygiene goods" (Cook, Shrestha & Htet, 2016), excluding bilateral donations of other governments. The ADB (2022), similarly, while leveraging its resources with other donors gave USD 165 million in emergency loans, and emphasized coordination amongst national institutions, alongside its commitment to the 2005 Paris Declaration rebuilt schools, improved access under the "build back better" initiative, and contributed to reconstruction efforts.

With the inclusion of the support given by the different countries, there were around 87 medical teams prepared for treating the injured (MoHA, 2015). The National Emergency Operational Center was also operationalized and the Government of Nepal adopted 'one door policy' for relief distribution. Joined coordination was established with domestic and global groups, CSOs and private actors, with great priority given to "shelter, food, medicine and linking response to early recovery" (MoHA, 2015).

The tremendous response by the international community underlined the concern and goodwill for Nepal. This outpour was noteworthy, especially with regard to the valued physical assistance that saved a great number of lives, as well as the public confidence that was restored in the presence of presence of well-prepared international teams. By July 15, 2015, the teams, in coordination with the NA, had managed to rescue 19 people, gave medical aid to 27,390, evacuated 3,493 by air and gave 966 tons of relief materials (NA, 2015). Although the Nepal government widely accepted international assistance (of 4.4 USD billion), it did refuse aid on some occasions, like from Taiwan and most notably its refusal of the UK Chinook helicopters from the UK (Hutt, 2020).

The sections below further highlight the role and assistance offered by the neighbouring countries and the South Asian states as a whole:

Neighbouring Countries: India and China

Within a few hours of the quake, an Indian Air Force aircraft had landed to provide aid and further provisions were supplied through aircrafts carrying relief and mobile hospital. Materials and aids were also sent through the roads. Titled as "Operation Maitri," one C-130J and IL-76, as well as with two C-17 aircrafts were deployed carrying 46.5 tons of relief, and along with came a team of 295 from the National Disaster Response Force (UDRF) (NA, 2015). They had managed to evacuate 5400 Indian and 30 foreign nationals, and 18 helicopters were also sent as a part of the operation (Chand, 2017). The Prime Minister's Disaster Relief Fund was also mobilized and several state and non-sate actors gave support in terms of their own capabilities (MoFA, 2016).

India sent the Indian National Disaster Response Force, Indian Air Force, Indian Army Medical Corps (PDNA 2015) as well as a SAR team, medical teams, medicines, and other emergency relief materials to Kathmandu (MoFA, 2016). It also sent additional support by means of 13 military airplanes, 3 civilian aircraft and 6 helicopters, alongside "10 tonnes of blankets, 50 tonnes of water and 22 tonnes of food," to aid the earthquake victims (BBC, 2015).

Nepal-India relations have been identified by the close historical and socio-cultural ties, with economic interdependence along the open border. Responding to the request put forth by the Government of Nepal during the 'Donor Conference,' the Minister of External Affairs, Sushma Swaraj had commented that ''Nepal and India are joined in both joys and sorrows'' (MoFA, 2016), Then, India announced the biggest offer of USD "1 billion in grants and low-interest loans to Nepal," comprised of grant (1/4th) and concessional loan (MoFA, 2016). The role of Indian during the disaster and post-disaster period was significant.

However, as India has often been charged with following the policy of 'semi-colonialism' and 'expansionism' in Nepal, several Nepali politicians have raised concerns regarding the political high-handedness and 'micro-management' of India upon Nepal's domestic politics (Biswas, 2015). Similarly, during the disaster period, the role of Indian media was criticised in Nepal through social media for being insensitive and inhumane to the victims of the disaster. On 3rd May 2015, the hashtag #Go Home Indian Media was trending worldwide on Twitter (Times of India, 2015). The people of Nepal appreciated the Indian assistance during the crisis, but blame was directed towards the Indian news networks for their insensitiveness towards the victims. Due to this, the significant support of India during the crisis has often been overshadowed. There was also the matter of China and its growing presence in Nepal during and post the reconstruction phase that had India proactively engaged in the Nepal's inner politics.

On the other side, China sent a big team for disaster relief. The first operation was conducted by a team of 40 rescuers, 10 medical professional and 12 seismic experts, and immediately USD 3.3 million was pledged as an emergency relief fund (MoFA, 2016). Nepal was also promised 186 tons of relief materials alongside 55 soldiers from the People's Liberation Army (PLA) (Chand, 2017). Post-reconstruction commitment given by China amounted to USD 483 million (Chand, 2017). Apart from this, was USD 3.2 million immediate disaster relief, and the dispatchment of a team of 500 professionals from the People's Armed Police for road repairing (MoFA, 2016). While Beijing largely did not operate through a humanitarian

aid policy document, its involvement was a part of its rising international emergency relief efforts, running convergently with other key aid providers (UNDP, 2015).

Nepal received considerable support from the Chinese government and its people. Beijing dispatched relief materials, medical supplies and rescue equipment through its aircrafts and substantial assistance was also received from the Provinces, Autonomous and Special Administrative Regions of China (MoFA, 2016). As per MoFA (2016), "China pledged 3 billion RMB grant for the post-earthquake reconstruction programmes."

Though, within the context of interests and with geostrategic consideration in mind, the Chinese presence came with some concerns. For instance, there was speculation within media networks that Taiwanese offer of SAR teams was refused due to Chinese pressure (Chand, 2017).

Similarly, other South Asian countries provided humanitarian relief support following the earthquake. Pakistan provided emergency relief materials like four C-130 aircraft with 30-bed hospital, specialists, tents, blankets and a SAR team to Nepal (MoFA, 2016). Likewise, Bangladesh responded by sending "a BAF Lockheed C-130B aircraft with 10 tonnes of relief materials, including tents, dry food, water, and blankets carrying a 34-member team consisting of 6 military medical teams" (Times of India, 2015). Bhutanese Prime Minister Tshering Tobgay and the health minister also landed in Kathmandu with the medical team to showcase solidarity between the two countries (MoFA, 2016). The Government of Sri Lanka provided emergency relief by sending special air force carrying emergency relief materials, alongside specialist physicians and medicines (MoFA, 2016).

However, the South Asian Association for Regional Cooperation (SAARC) could not be of much support. The SAARC Disaster Management Centre was made to establish and consolidate the regional disaster management system to reduce risks and improve response and recovery management. The disaster revealed the failure of SAARC in addressing such crisis. The region is vulnerable to disaster due to many reasons including socio-economic challenges, growth in technological fields, increasing and uncoordinated urbanization, as well as environmental risks and hazards. The centre was set up to address these issues. However, SAARC leaders could not activate and mobilize the centre due to interests and disagreements.

CONCLUSIONS

Beyond national politics was the importance of assistance and relief offered by neighbouring states – India and China – and countries like Japan, the US, South Asian nations,

as well as from donor communities and global institutions. The significance of an integrated approach was seen during the process. Also, for a developing state like Nepal, the support was essential in the relief and rescue operations and for reconstruction. Though states and institutions operate within their own interests, the aid and assistance offered signified the goodwill that Nepal accumulated throughout the years. While formal and proper integration within the region was still missing, there was a sense of cooperation that helped Nepal when its own resources were limited, and so, global powers, and institutions also found ways to expand their influence in such matters. Efforts of humanitarian relief efforts are used as tools of persuasion and disaster relief operations can be leveraged as a mean of securing strategic and political interest. Similar play of interests could be observed in the midst of humanitarian responses with some states, particularly those in the region, moving forth in their operations with certain interests.

The matter aside, the quake served as an opportunity to assess national capability regarding disaster response and management. There was decidedly a lack of coordination amongst various government bodies during the planning and execution of the national operations apparent even before the incident. Nepal is inherently vulnerable to such disasters and the quake served as a reminder of its sensitive position in the geographical planes.

There is also a concern dealing with regional responses and its importance. while individual countries and multilateral institutions provided aid and relief, the lack of integration within South Asia was quite visible. The ineffective SAARC mechanisms need to be addressed for a systematic response, and even if not through the regional body, there needs to be some form of viable integrated approach for support and assistance between the countries to deal with any such disasters in the future.

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