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Editorial

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Editor-in-Chief

Internationalization of Research

In the rapidly globalizing world, educational research cannot remain confined to one university or a research centre that belongs to one nation. There is growing realization among university scholars and researchers that research should go beyond the limited territory and expand its universe: it should cross the geographical borders of a particular nation and expand across the globe; it should cross the traditional borders of a particular community and invite the people of multiple cultures; and it should cross the conventional borders of a particular discipline and seek to link multiple disciplines together. In summary, research has to discard traditional borders of all kinds and adapt globalization, multiculturalism, and interdisciplinarity to meet the growing demands of the day.

In today's world researchers cannot remain tied to a fixed institution established in a particular place. Instead, they like to travel across institutions globally to open up new avenues of knowledge. It is not simply that scholars from third-world countries move out to developed countries but the very reverse is also true. Researchers from Europe and America are moving to many Asian and South East Asian countries for their education. They can be exposed to new geography and culture if they dare to cross the border and move out. Further, they need to know the issues of global concern ranging from economic growth to conservation of the environment, which apparently are mutually exclusive but are closely interconnected. One cannot remain unaffected by ecological imbalance caused by

global warming due to climate change. In this sense, research is becoming more and more transnational. By the same token, the nature of research has become more multicultural today. Since students from different geographies come together, they can see different landscapes in different parts of the world. Likewise, researchers from different ethnic, linguistic, and religious communities meet at a common place and can share their unique cultures. Almost every research institution invites international researchers from different countries to make the research activities multicultural.

Furthermore, research has become more interdisciplinary today. Many disciplines of natural science, social science, and other areas, such as politics and governance, are closely interconnected in terms of concept and process. The knowledge of mathematics can be applied to the better study of economics, and the study of biology can be useful in understanding anthropology. We can easily understand the close relationship between science, politics, and economics. There can be dozens of examples of this kind to illustrate the point. The assumption behind it is that any knowledge that one gains from a particular discipline is inadequate.

One more significant issue is climate change, which has to be addressed collaboratively by all nations. Global warming has become a threat to all nations. Environmental pollution caused by excessive industrialization has threatened the general health of people of all nations. If such things continue to happen, our earth may have to face unprecedented danger. Understanding that natural phenomena cannot be a national issue is essential. Hence, researchers need to go beyond a particular nation and be engaged in exploring the issues of international nature and finding solutions to the common problems.

Since research has crossed its conventional borders and begun to establish new boundaries of transnationality, multiculturalism, interdisciplinarity, and

globalization, there is no point in insisting that research is a matter of one nation, one culture, and one discipline only. Therefore, internationalization of research is undoubtedly an urgent demand of the day. In order to put internationalization of research into practice, we need to collaborate internationally and engage in joint research activities. In this practice, partner countries, universities, and research centers should be involved in joint research activities by establishing formal relations within the existing rules and regulations of those institutions and the nations they belong to, with the primary goal of working together to share knowledge and experiences. Such relations facilitate building understanding between universities, forging international research alliances and forming groups of intellectuals and scholars for specific research projects.

Molung Foundation aims to contribute to researchers' endeavors by engaging researchers from multiple fields to write their research outcomes as research papers. This volume contains 12 articles in different disciplines that aim to contribute to a better understanding of recent research trends in the contemporary world.

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First-principles Calculation of Cumene: Molecular Structure, Electronic Structures, Spectroscopic Analysis, and Thermodynamic Properties

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Abstract

This study uses the DFT method for the investigation of optimized structure, electronic structures, charge analysis, FT-IR, FT-Raman spectroscopic analysis and thermodynamic properties. The optimized energy and dipole moment are -9531.775 eV and 0.3818 Debye. The bond lengths of C1-C2 and C1-H7 molecules inside the benzene ring are observed to be 1.39 Å and 1.08 Å respectively. The bond angle of C1-C2-C3 and C2-C1-C6 are found to be 120.10 Å and 119.36 Å. The HOMO-LUMO energy gap is 6.331 eV which corresponds very close to the energy gap of 6.321 eV obtained from density of states. The global parameters with ionization energy value 6.747 eV, electron affinity with 0.4152 eV, chemical potential with -3.5811 eV, electronegativity with 3.5811 eV, global hardness with 3.1659 eV, softness with 0.3148 eV^{-1} and electrophilicity index with 2.0253 eV are obtained. The Mulliken charges analysis indicate that most of the carbon atoms except C4 and C12 are found to carry negative charges where all of the H-atoms are found having positive charge. The molecular electrostatic potential, electrostatic potential and electron density identify different electrophilic and nucleophilic region and its reactive natures. The FT-IR spectroscopy shows strong C-H vibrations at 3186-3093 cm^{-1}, methyl group vibration at 3091-3078 cm^{-1} and the ring vibrations at 1641-1482 cm^{-1}. The heat capacity at constant volume and at constant pressure, internal energy, enthalpy, entropy increase with increasing temperature. However, Gibb's free energy shows opposite nature providing very important insights according to the change in temperature.

Keywords: density functional theory, density of state, molecular electrostatic potential, IR-spectroscopy, thermodynamic properties

First-principles DFT Study of Cumene: Molecular Structure, Electronic Structures, Spectroscopic Analysis and Thermodynamic Properties

Cumene (C_9H_{12}), also known by its other common name, isopropyl benzene, has an IUPAC name of (Propan-2-yl) benzene. It is a buoyant colourless organic liquid compound that, at room temperature, has a sharp, penetrating, aromatic, and gasoline-like odour that acts as one of its crucial characteristics as an aromatic substance. It is a part of an aromatic family that has an origin structure similar to hydrocarbon families, including toluene (methylbenzene and ethylbenzene) with an alkyl substitution on of the hydrogen inside the benzene ring (Nikfar & Behboudi, 2014). When benzene (Rai et al., 2024) is treated with an unsaturated organic compound such as propylene in the presence of phosphoric acid as a catalyst at 250 degree Celsius (ºC), Cumene is formed. It is an ignitable material that is soluble in alcoholic compounds and other solvents but insoluble in water. It is mostly found in gasoline and crude oil, as well as many plant oils, meals, and items that contain tobacco. Another common name for Cumene is 2-penylpropane, or (1-methylethyl) Benzene. It is widely employed in the catalytic synthesis of acetone and phenol (Ghimire et al., 2023). On the other hand, Cumene was first developed as a catalytic agent for the manufacture of aviation gasoline during World War II (Haun & Kobe, 2002). Cumene which has a benzene ring in its structure, indicates that it has one of the aromatic odours in its properties.

Figure 1

Chemical Structure of Cumene
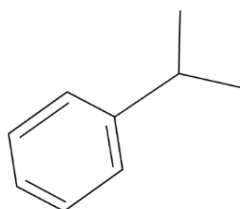
Various studies, research and report have been made till date regarding the study of Cumene molecule. In 2015, Sivaranjani et al., did an investigation on Cumene obtaining FT-IR, FT-Raman, NMR and UV spectra through various spectroscopic techniques. Researchers in 2006 reported the process of Cumene formation through benzene alkylation with propylene on the new three-dimensional catalyst (Jansang et al., 2006). Al-Khattaf & de Lasa (2001) found the process of catalytic cracking of Cumene. Petroselli and colleagues (2017) proposed a report where a new class of lipophilic N-hydroxyphthalimides catalysts, designed for the aromatic oxidation of Cumene in solvent free conditions, were synthesized and tested. Luyben studied the chemical process to form Cumene with the interaction of benzene and propylene and again with the repellent of Cumene with propylene to shape the formation of p-diisopropylbenzene (Luyben, 2010). In 2016 the research of chemical kinetics on thermal decomposition of Cumene hydroperoxide in Cumene by calorimetry was studied where the compound was noted to have a catalytic product reaction (Duh, 2016). Even though the literature review reveals different research regarding the atoms, electrons and overall molecular structure of Cumene, it can be observed that no research for molecular structure, electronic structure, spectroscopic analysis and thermodynamic properties have been performed using the B3LYP/6-311++G(d,p) basis set. So, our objectives are to investigate the optimization energy and its steps, bond length, bond angle, dihedral angle, highest occupied molecular orbitals and lowest unoccupied molecular orbital (HOMO-LUMO), density of states (DOS), global reactivity parameters, Mulliken charges, molecular electrostatic potential (MEP), electrostatic potential (ESP), electron density (ED), vibrational behaviour and thermodynamic parameters of Cumene using the B3LYP/6-311++G(d,p) basis set, filling the research gap identified in the literature review regarding the calculation and analysis of these properties.

Methodology: Computational Details

The overall process for the calculation of different quantum chemical behaviours has been carried out using the Gaussian 09W and GaussView 6.0 version as the primary software for the overall calculations. The geometrical and optimization calculations for the compound Cumene were carried out using the Density Functional Theory (DFT) method with B3LYP/6-311++G(d,p) basis set. Furthermore, the electronic properties such as HOMO-LUMO, MEP, ESP, ED and the vibrational spectroscopy (FT-IR and FT-Raman) were also performed using a similar DFT method and basis set and they had been scaled accordingly. GaussSum 3.0 software package was used as secondary software to generate DOS spectrum related to the calculations. The thermodynamic properties were also been carried out using the same B3LYP/6-311++G (d,p) basis set in the Gaussian software together with the Moltran software. Origin Pro 9.0 had been used as other software for further plotting of different graphs.

Results and Discussion

Optimized Energy and Optimization Steps

The optimization energy of any molecule can be defined as the required energy for any molecule or compound to be in its most stable state. Optimizing step is the process to reduce the energy of the molecule to its minimum state so that it can be stable. Figure 2 shows the steps that were required to reduce the energy of the Cumene molecule and to make it stable, which has an overall total of 3 optimization steps. The maximum energy contained in Hartree has been converted into eV using the conversion value where 1 Hartree = 27.211 eV. Therefore, the molecule was at -9531.7828 eV at step 1, during which the molecule had its highest energy. While coming towards step number 2, the energy has started to decrease with the energy at this step being -9531.7863 eV. Finally, at step number 3, the energy of the molecule has been reduced to its lowest possible energy state, has been neutralized, and has remained stable at this point

with an energy of -9531.7864 eV as shown in Figure 2. Similarly, the dipole moment obtained was measured at 0.3818 Debye.

Figure 2

Energy and Optimization Steps of Cumene Molecule
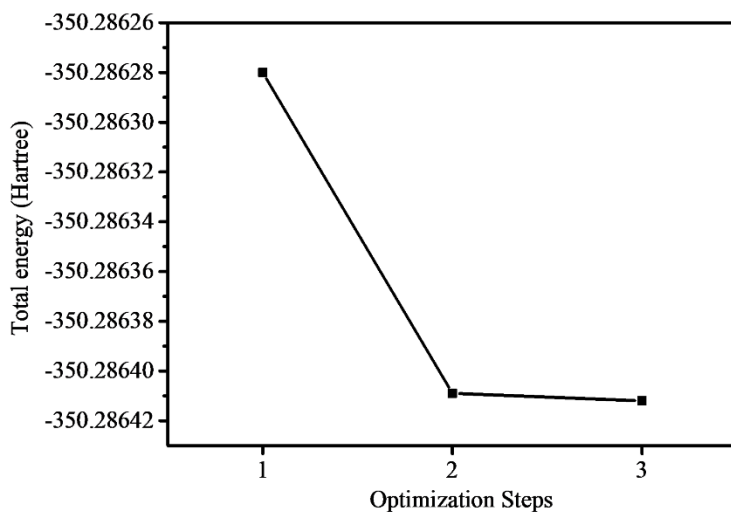
Figure 3

Optimized Structure of Cumene With Symbol and Numbering of Atoms
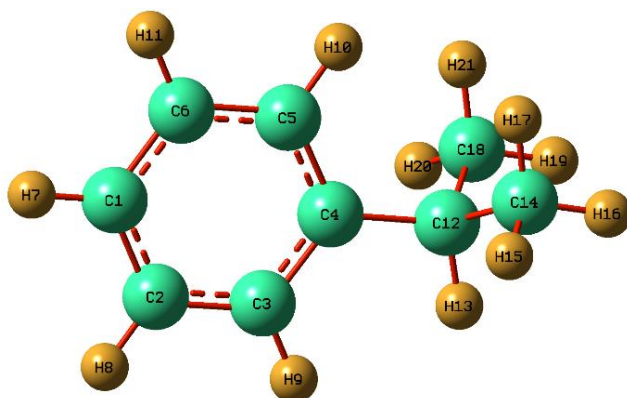
Figure 3 shows the visual representation of optimized structure of the Cumene molecule with different geometrical parameter. It displays the benzene ring formation with the substitution of the methyl group in one of the H-atom,

representing the unique structure of Cumene along with its bond formation of every neighbouring atoms.

Optimization of Molecular Parameters

Table 1 represents the different geometrical parameters of the Cumene molecule. It is observed that the bond length between the carbon-carbon atoms, such as C1-C2, C5-C6 and C2-C3 found to be around 1.392 Å, 1.394 Å, 1.394 Å which agrees approximately with the experimental value of 1.396 ± 0.001. Similarly, the bond length of C1-H7, C5-H10 and C3-H9 atoms are observed to be 1.084 Å, 1.084 Å and 1.085 Å, as shown in Table 1. The bond length between the substituent parts of the molecule can also be observed from Table 1, which corresponds with the experimental values (Weast, 1975). Moreover, the bond angle between the C1-C2-C3, C2-C1-C6, C6-C1-H7 and C4-C6-H10 atoms are observed to be 120.10˚, 119.36˚, 120.29˚ and 119.84˚ which matches relatively very close with the experimental value of $120.1˚ \pm 1˚$. Furthermore, the different dihedral angles of the four atoms inside the molecules have been recorded using a similar method shown in table 1.

Table 1

Optimized Parameters of Cumene Molecule

Bond length	Value (Å)	Bond Angle	Value (˚)	Dihedral Angle	Value (˚)
C1-C2	1.392	C1-C2-C3	120.10	C6-C1-C2-C3	0.00164
C5-C6	1.394	C2-C1-C6	119.36	C3-C4-C5-H6	0.00208
C2-C3	1.394	C6-C1-H7	120.29	C6-C1-C2-H8	-179.99
C3-C4	1.398	C1-C2-H8	120.10	C3-C4-C5-H10	-179.99
C4-C5	1.401	C4-C5-C6	121.06	C1-C6-C5-C4	-0.00066
C1-C6	1.398	C4-C6-H1O	119.84	C1-C6-C5-H10	179.99
C5-C6	1.392	C4-C3-H9	119.25	C6-C5-C4-C12	179.99

C1-H7	1.084	C2-C3-C4	121.23	C5-C4-C12-C18	-62.74
C5-H10	1.084	C4-C12-C14	111.98	C5-C4-C12-C14	62.76
C3-H9	1.085	C4-C12-C18	111.98	H13-C12-C18-H20	60.76
C4-C12	1.522	C14-C12-C18	111.05	H13-C12-C18-H19	-59.44
C12-C18	1.533	H20-C18-H21	107.78	H15-C14-C12-H13	-60.76
C12-C14	1.533	H15-C14-H17	107.78	H13-C12-C14-H17	179.06
C18-H21	1.094	H16-C14-H17	107.68	C4-C3-C2-C1	0.00
C18-H20	1.092	H15-C14-H16	108.19	H19-C18-C12-C14	57.65
C12-H13	1.095				
H16-C14	1.094				
C14-H17	1.094				
C14-H15	1.094				

HOMO-LUMO Analysis

Figure 4 represents the HOMO-LUMO plot. The electrophilic part having tendency to donate an electron represents the HOMO orbitals while the nucleophilic part having tendency to gain or accept an electron are the LUMO orbitals (Kumer et al., 2019). The present analysis concludes by determining the HOMO-LUMO band gap that is an essential analysis for the study of stability and strength between atoms/molecules. From Figure 4, the area that contains the positive charge are represented by the green part while the area with the negative charge is represented by red parts (Prabhu et al., 2023). In Figure 4, HOMO energy is -6.747 eV and LUMO energy is -0.4152 eV such that the energy gap (ΔE) in the ground state level is calculated as 6.331 eV. The HOMO-LUMO gap represents the hardness of the molecule, indicating that the harder the molecule, the more the energy is required to break the bonds in between them. In the case of Cumene, the HOMO-LUMO gap is observed to be quite high, i.e., 6.331 eV, showcasing that the Cumene molecule has a high chemical hardness. The HOMO-

LUMO band gap i.e. 6.81 eV in gas phase calculated using the basis set of 6-31++G (d,p) (Sivaranjani et al., 2015) is comparable to our HOMO-LUMO band gap.

Figure 4

The Atomic Orbital Compositions of the Frontier Molecular Orbital, HOMO-LUMO Energy gap of Cumene
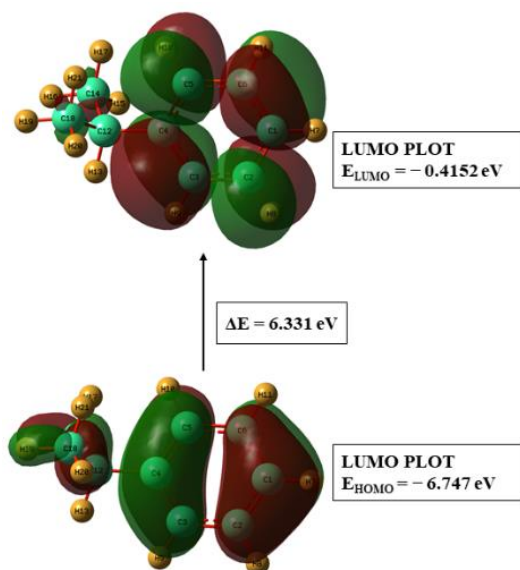
Density of States (DOS)

Figure 5 shows the DOS plot for the Cumene molecule. The density of the state is the area of energy level that is available for an electron. The green part denotes the occupied orbitals having free electrons that can be donated while the red part represents the virtual state, representing the tendency to accept the electron. The energy gap (Dhakal & Rai, 2023; Ghimire et al., 2021) obtained from the DOS plot, i.e. 6.321 eV agrees approximately with the energy gap from the HOMO-LUMO band gap, i.e., 6.331 eV.

Figure 5

Density of State Plot of Cumene Molecule
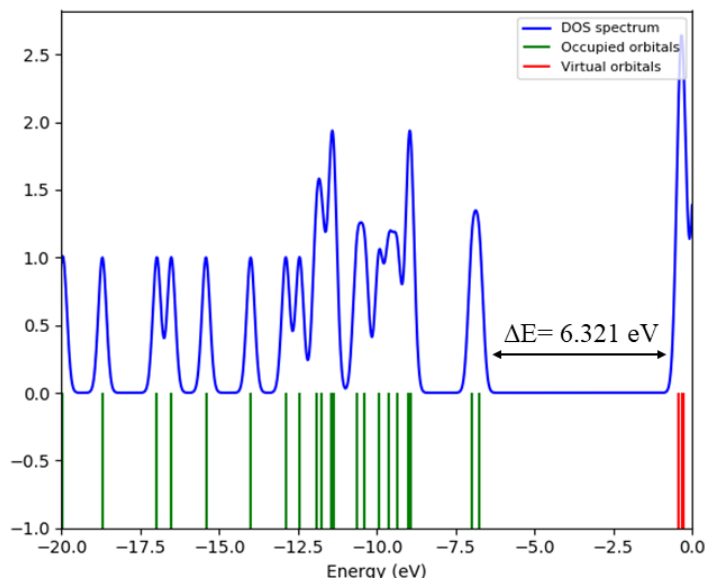
Global Reactivity Parameters Calculation

For the analysis of global reactivity parameters such as ionization potential (I), electron affinity (A), chemical potential (μ), electronegativity (χ), hardness (η), softness (ζ) and electrophilicity index (ω), Koopman's theory states that HOMO and LUMO orbitals are interrelated with the parameters of ionization potential (I) and electron affinity (A), where the negative part from the highest occupied molecular orbital (HOMO) and the negative of the lowest unoccupied molecular orbital (LUMO) correspond with the ionization potential (I) (which loses an electron) and electron affinity (A) (which gains an electron) respectively (Kaya & Kaya, 2015).

$$I = -E_{HOMO} \qquad\qquad (1)$$

$$A = -E_{LUMO} \qquad\qquad (2)$$

The following parameters I and A are found to be 6.747 eV and 0.4152 eV respectively where both of the parameters have positive value and is a satisfactory result.

From the above equation, parameter such as chemical potential (μ) and electronegativity (χ) can be analyzed using the equations (3) and (4) (El-Saady et al., 2023).

$$\mu = -(I+A)/2 \qquad\qquad (3)$$
$$\chi = (I+A)/2 \qquad\qquad (4)$$

The following value -3.5811 eV represents the chemical potential (μ) of the molecule. The negative value in this case suggests that the molecule in a chemical reaction tends to move from the higher concentration region towards the lower concentration region. This means that in order to move towards the lower concentration region, it needs to release some amount of energy. Therefore, the obtained value suggests that the Cumene molecule tends to release energy in the chemical reaction. Similarly, the electronegativity (χ) has been observed to be 3.5188 eV. This higher and positive value obtained indicates the strong tendency to attract the electrons. Furthermore, we have the global hardness (η) that can be defined as the resistance between the molecule where it can change or deform their lowest or the occupied orbital state which is also called its electronic configuration due to chemical reaction. This parameter can be calculated with the equation (Torrent-Sucarrat et al., 2002).

$$\eta = (I - A)/2 \qquad\qquad (5)$$

Moreover, the global softness (ζ) is the inverse of the hardness (η) and is given by the equation below.

$$\zeta = 1/\eta \qquad\qquad (6)$$

The hardness (η) and softness (ζ) parameters have been observed 3.1659 eV and 0.3148 eV^{-1} respectively, where the hardness of the parameter is significantly higher than the softness and it shows that the molecule has a higher chemical hardness. The global electrophilicity index (ω) can be regarded as the tendency of an atom or a molecule to accept an electron in a chemical reaction (Limbu et al., 2024). This index is given by the equation.

$$\omega = \mu^2/2\eta \qquad\qquad (7)$$

The global electrophilicity index (ω) has been observed with value of 2.0253 eV, the positive value represents that the analysed molecule is more electrophilic in nature and has a higher tendency to accept an electron in its structure.

The global parameters like electronegativity (χ), chemical hardness (η), softness (ζ) and electrophilicity index (ω) calculated as 3.38 eV, 5.35 eV, 0.19 eV^{-1} and 1.07 eV respectively using the basis set 6-31++G(d,p) (Sivaranjani et al., 2015) are in good agreement to our values 3.5188 eV, 3.1659 eV, 0.3148 eV^{-1} and 2.0253 eV respectively.

Mulliken Charges Analysis

The Mulliken charges analysis represents what the charge density of each atom carries in a molecule (Vinodkumar et al., 2023; Rai et al., 2024) geometry. It means that its value depends upon the electron density of a molecule. In this study, we have calculated the Mulliken population analysis for the Cumene molecule. The bar plot from Figure 6 shows that C1, C2, C3, C5, C6, C14, and C18 are inclined towards the negative charge and C14 and C18 have the highest negative charge values among all the carbon atoms. Similarly, C4, H7, H8, H9, H10, H11, C12, H13, H15, H16, H17, H19, H20, and H21 are the atoms with a positive charge, where C4 has the highest positive charge of all the atoms present.

Figure 6

Mulliken Charges Distribution of Atoms in Cumene Molecule
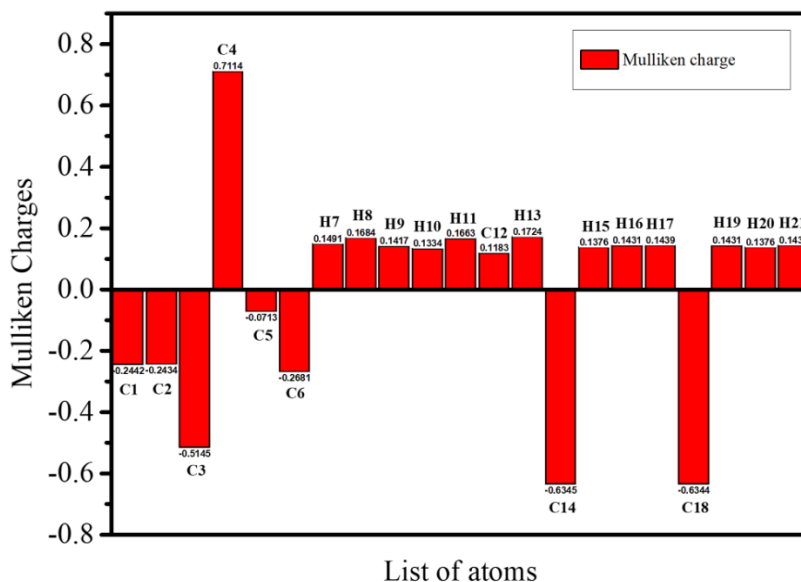
Analysis of Molecular Electrostatic Potential (MEP), Electrostatic Potential (ESP) and Electron Density (ED)

Figures 7(a), 7(b) and 7(c) show the MEP, ESP and ED analysis respectively for the Cumene molecule. MEP which is the electrostatic concentration produced due to the electrophilic (negative) and nucleophilic (positive) attack on the molecule in which the potential of the molecule increases in the following order: red< orange< yellow< green< blue, where red indicates the negative and blue indicates positive with green representing the area where the both attraction and repulsion (neutral) activities are weakest (Ojha et al., 2023). Moreover, potential for the MEP analysis ranges from -2.514e-2 to 2.514e-2 as shown in Figure 7.

Figure 7

(a) Molecular Electrostatic Potential, (b) Electrostatic Potential, (c) Electron Density
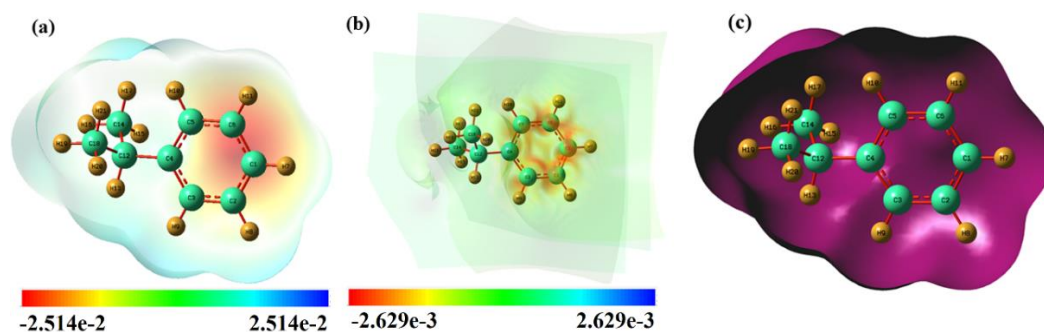
Figure 7(a). The negative region, i.e., the electrophilic (red) region in Figure 7(a), is observed to be concentrated at the centre of the benzene ring symbolizing the region to have the strongest force of attraction and repulsion between the atoms of the molecule. The hydrocarbon group outside of the ring formation i.e. the hydrogen atoms attached to the benzene ring show less electrophilic characteristics (yellow). The green area where the weakest repulsion and attraction (neutral) activities happens is mostly observed outside and around the substituent CH_3 hydrocarbons. Similarly, the potential for ESP ranges from -2.629e-3 to 2.629e-3 as shown in Figure 7(b). From this Figure 7(b), it is observed that the effect of potential is very high around the benzene ring, while the other atoms of the substituent group experience less potential compared to the atoms near the benzene ring. Moreover, Figure 7(c) represents the electron density of the Cumene molecule showing that the molecule shows uniform structure.

Vibrational Assignments

A complete analysis of vibrational spectroscopy was carried out on the set of 57 modes. Figure 8(a) and 8(b) visualize the FT-IR and FT-Raman spectra (Ghimire et al., 2022; Khadka et al., 2023) of the Cumene molecule. The different

types of vibration across different 57 modes were observed and analysed, and these data were compared with other literatures. The two major molecular vibrations, i.e., stretching and bending, where stretching vibrations happen due to the change in bond length and bending vibrations occur due to the change in bond angle, were observed and studied. The Raman activities (Si) can be calculated by simulated equation in the Gaussian 09W software that converts the Raman activities into Raman Intensities (Ii) using the below equation derived from Raman Scattering (Sruti & Rasheed, 2015).

$$I_i = \frac{f(v_o - v_i)^4 Si}{Vi\left[1 - exp\left(\frac{-hcv_i}{kT}\right)\right]} \quad \ldots\ldots\ldots\ldots\ldots \quad (8)$$

Where v_0 is the exciting frequency (in cm^{-1} units), v_i is the vibrational wave number and h, c and k are the constant parameters and f is the common normalization factor for all peak intensities.

Figure 8

(a) FTIR Spectrum, (b) Raman Spectrum of Cumene Molecule at Neutral State
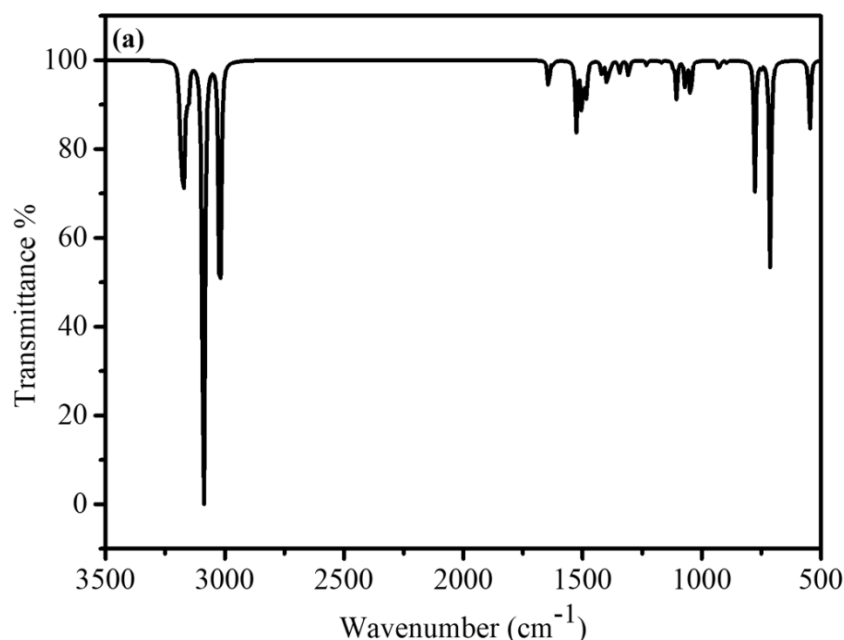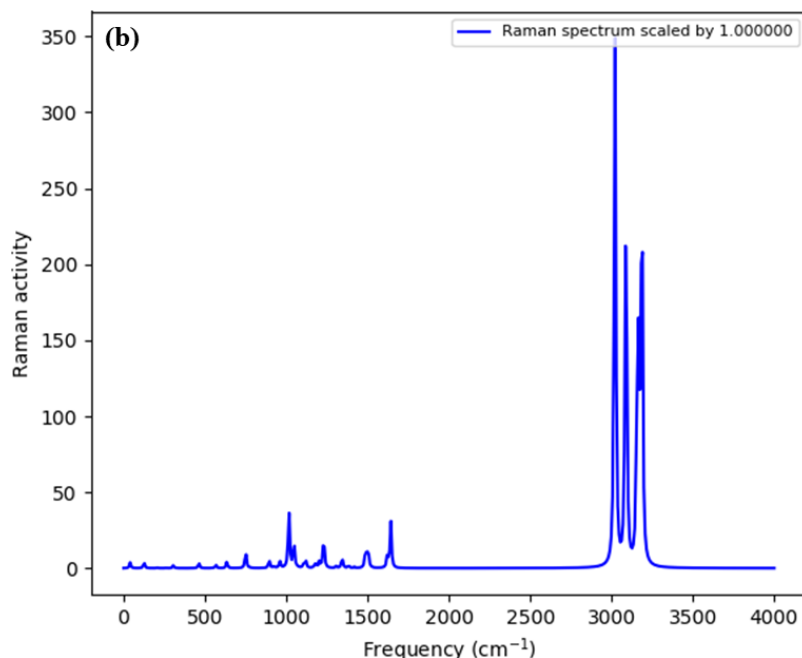
C-H Vibrations

In the case of C-H stretching vibration, it generally occurs in the region of 3100 cm^{-1} – 3000 cm^{-1} with its characteristics (Ojha et al., 2023; Pathan et al., 2023). The strong C-H stretching vibration in the Cumene molecule visualizes the frequencies at 3186 cm^{-1}, 3174 cm^{-1}, 3156 cm^{-1} and 3093 cm^{-1} in the IR spectra from Figure 8(a); while in Raman spectra from Figure 8(b), the peak vibration appears at 3018 cm^{-1} both two major stretching symmetric and antisymmetric vibrations for C-H vibrations are shown in the figure 8(a). Similarly, the in-plane bending vibration occurs normally in the mid region of 1300-1000 cm^{-1} (Arunagiri et al., 2011). The present analysis observes the frequency 1397 cm^{-1}, 1347 cm^{-1}, 1306 cm^{-1} 1105 cm^{-1} and 1046 cm^{-1} in the IR curve where the major vibration in Raman spectra is observed at 1016 cm^{-1}. The out of plane vibration is seen at the lower frequency region of 900-675 cm^{-1} (El-Saady et al., 2023b). The frequencies 777 cm^{-1}, 712 cm^{-1}, 547 cm^{-1} and 125 cm^{-1} has been assigned for out of plane vibration in the IR spectra (Figure 8(a)) where the peak vibration for Raman spectra is seen at 750 cm^{-1} (Figure 8(b)).

Methyl Group Vibrations

The symmetric and the antisymmetric stretching vibration for the CH_3 alkyl group vibrations commonly show itself at the region of 3050-2990 cm^{-1} (Mp & Seshadri, 2015). The very strong stretching vibration in the IR spectra has been observed at 3091 cm^{-1}, 3085 cm^{-1} and 3078 cm^{-1} where the most observable curve for Raman spectra has been observed at 3015 cm^{-1}. Similarly, the in-plane and out-of-plane bending vibration for CH_3 alkyl group generally occurs at mid region of 1065-1045 cm^{-1} (Nataraj et al., 2013). The current analysis shows the in-plane bending at the region of 1105 cm^{-1} , 1069 cm^{-1} and 1046 cm^{-1} in the IR spectra (Figure 8(a)) and Raman spectra show the strongest activity at 1016 cm^{-1} (Figure 8(b)). Moreover, the out-of-plane bending vibration generally occurs at the lower frequency range and has been observed at the lower region of 931 cm^{-1}, 567 cm^{-1}, 225 cm^{-1} for the IR spectra [Figure 8(a)] and 125 cm^{-1} is seen as the strongest region for Raman spectra [Figure 8(b)].

Ring Vibrations

The C=C aromatic stretching vibration usually finds its characteristics place in the region of 1625-1430 cm^{-1} (Sundaraganesan & Dominic Joshua, 2007). In the analysis of Figure 8(a), the strongest C=C stretching ring vibrations are observed at 1641 cm^{-1}, 1526 cm^{-1}, 1506 cm^{-1} and 1482 cm^{-1} in the IR spectra where the strongest observation for Raman spectra has been obtained at 1642 cm^{-1} (Figure 8(b)) and these values observed in the mentioned frequency range (Sundaraganesan & Dominic Joshua, 2007) indicate that there is no influence from the substituent part. The C-C vibrations are generally observed in the region of 1575-1430 cm^{-1} (Ojha et al., 2023). In the analysis of Figure 8(a), the C-C stretching vibrations have been observed at the region of 1386 cm^{-1}, 1343 cm^{-1}, 1306 cm^{-1} in the IR spectra.

The IR spectra of cumene in the lower region of 211-1326 cm^{-1} using the B3LYP/6-31G(d) basis set (Fishman et al., 2008) are approximately coincide with spectra found in the lower region of 125-1487 cm^{-1} in our current analysis.

Thermodynamic Parameters Analysis

The thermodynamic properties are analysed using the thermodynamic parameters and notable thermodynamic changes are seen in its structure as per the change in temperature. The Gaussian DFT B3LYP/6-311++G(d, p) basis set following the Moltran software was used to calculate the thermodynamic properties. Figure 9(a) represents the correlation graphs of heat capacity at constant volume (C_V) and heat capacity at constant pressure (C_P) with respect to temperature range in 50 K- 500 K. It shows that the C_v and C_p increase along with the increase in temperature. Figure 9(b) represents the graphs of internal energy (U) and enthalpy (H) with respect to temperature in the range 50 K - 500 K. This Figure shows that U and H also increase along with the increase in temperature starting from 50K. Figure 9(c) represents the graphs of entropy (S) and Gibb's free energy (G) with respect to temperature with the range of 50 K- 500 K. In this Figure, S also increases with increase in temperature. However, the G decreases relentlessly as it depends upon S and H of the system that shows the amount of useful work with respect to temperature where its maximum value was recorded at 50 K with the value of 481.445 kJ/mol and minimum at the maximum temperature 500 K with the value of 307.166 kJ/mol. The correlation plot of G and S shows that the two lines intersect at certain point which verifies the relation between S and G. Furthermore, the change of H and S represent that these parameters changing depend on the temperature due to which these parameters change their thermodynamic system on their own ways (Gauli et al., 2023; Seshadri & Mp, 2018).

Figure 9

Correlation Plot of Thermodynamic Parameters (a) Heat Capacity at Constant Volume and Heat Capacity at Constant Pressure, (b) Internal Energy and Enthalpy, (c) Entropy and Gibb's Free energy With Respect to Temperature
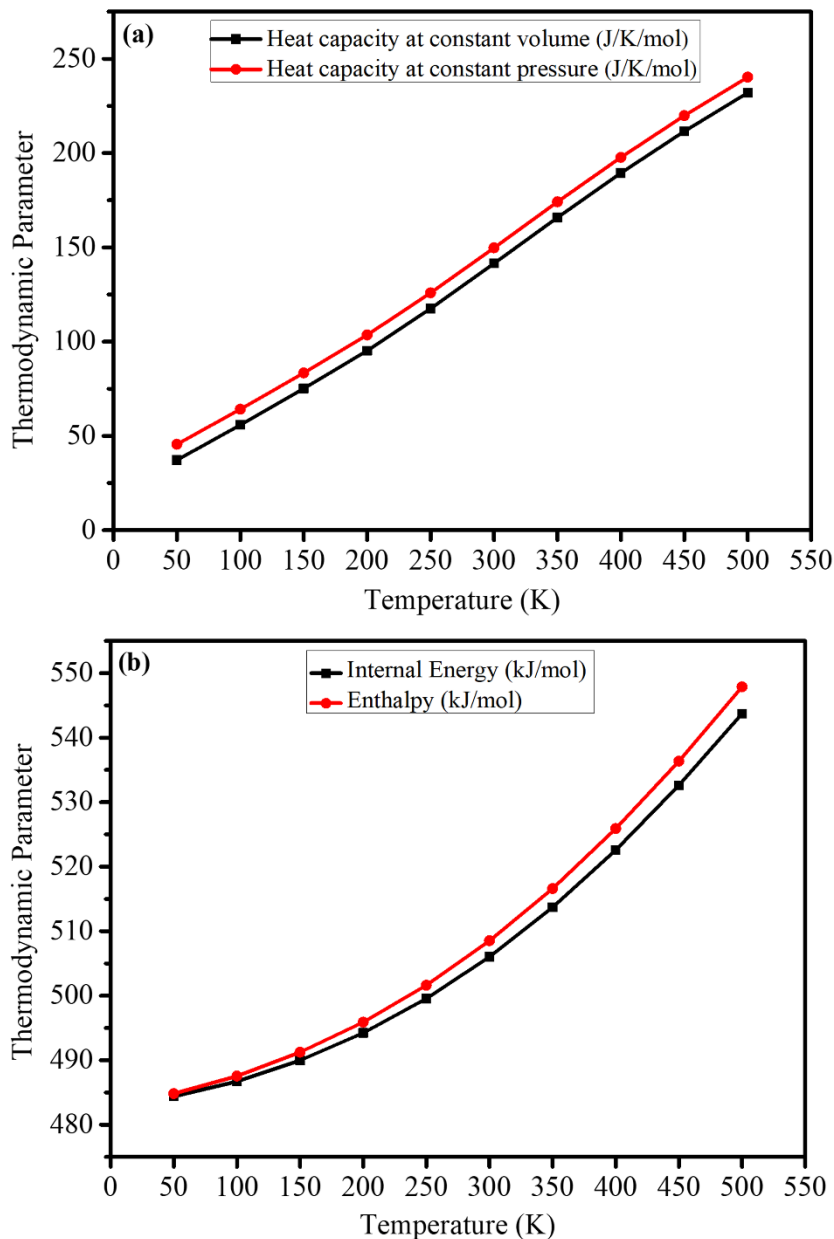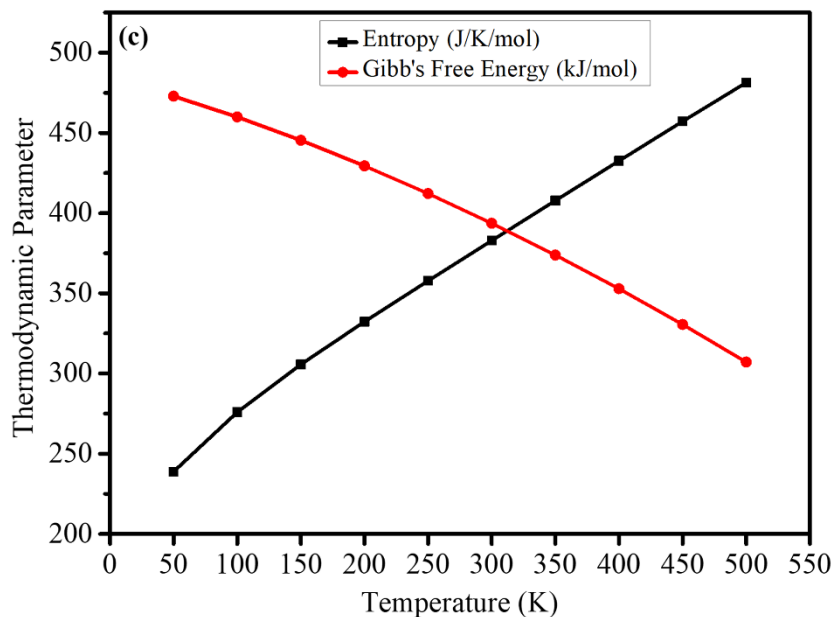
Conclusion

The first principles DFT approach with the B3LYP/6-311++G(d,p) basis set has been employed to the Cumene molecule for analysis of optimized molecular structure, electronic structure, charge analysis, FT-IR, FT-Raman spectroscopic analysis and thermodynamic properties.   The optimized energy of -9531.7864 and the dipole moment of 0.3818 Debye are obtained. The bond angle, bond length and dihedral angle between the atoms inside the benzene ring and that of the substitute methyl molecule has been observed and compared with the experimental value. The HOMO-LUMO gap is observed to be 6.331eV representing the stability of the molecule and the electrophilic and nucleophilic behaviour inside the molecule which is compared with the DOS value of 6.321 eV. The global parameters such as ionization energy with 6.747 eV, electron affinity with 0.4152 eV, chemical potential with -3.5811 eV, electronegativity with 3.5811 eV, global hardness with 3.1659 eV, softness with 0.3148 eV^{-1} and electrophilicity index with 2.0253 eV have been calculated. Furthermore, the mulliken charge analysis for each atom in the molecule has been observed where

most of the C-atoms have been observed with the major negative charge and H-atoms with positive charges. The electronic structure such as MEP, ESP and ED has been studied showcasing that the area near and inside the ring structure has more electronegativity behaviour while other outside region has mild electronegativity activity. The FT-IR and FT-Raman spectroscopy identified strong C-H vibrations at 3186-3093 cm^{-1}, methyl group vibration at 3091-3078 cm^{-1} and the ring vibrations at 1641-1482 cm^{-1}. The different thermodynamic properties such as Cv, Cp, U, H, S and G are analysed with varying the temperature where the parameters such as Cv, Cp, U, H, and S increased with the rise in temperature and while the behaviour of G declines as the temperature is increased.

In overall this research analysis contributes on the field of science discovering different aromatic substance, drugs in the medical field and developing more efficient and sustainable catalysts for the Cumene related reactions for creating more environmentally friendly technological advancement in the present and future days.

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Electrical Injuries in Nepal: An Analysis of Nepal Police Records

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Abstract

Electric shock is a major cause of injury-related mortality and morbidity. However, it remains a neglected issue in Nepal because mortality and morbidity data are unsystematic and many of them are even unknown. Realizing the need of a systematic study in this regard, I aim to present the available national status of electrical injuries using incidents recorded by Nepal Police from July 2014 to July 2019 for an analysis. The data, obtained in descriptive narratives include information on the injured person's age, sex, place of occurrence, month of occurrence, activity during the occurrence, and the number of casualties per incident. This article explores the issue in some detail to open up the avenues for further study. The findings that I mentioned above indicate a significant burden of electrical injuries in Nepal, potentially higher than reported due to limitations in the police data recording system. As the government regulates electricity distribution, it should also be accountable for preventing electric shock incidents and saving many lives.

Keywords: electrical injuries, police record, death, injury, Nepal

Electrical Injuries in Nepal: An Analysis of Nepal Police Records

Injuries result from acute exposure to physical agents like mechanical energy, heat, electricity, chemicals, and ionizing radiation, which interact with the body at levels or rates surpassing human tolerance thresholds (Gibson, 1961). Accident is an event that results in injury. Injuries can be caused by exposure to physical agents, mechanical energy, heat, electricity, chemicals, and object interacting with the body exceeding the threshold of human tolerance (Baker et al., 1992). The risk of injury is everywhere, travelling, working, playing, or even while people are asleep. Electrical injury is thus a serious public health issue.

Globally, injury accounts for one in eight deaths among males and one in 14 deaths among females (Pal, 2012). Global analysis found that poor groups are generally more at-risk wealthier ones, especially among children. About 90 percent of injuries occur in the low and middle-income countries (WHO, 2008). WHO estimated the injury mortality of 43 per 100,000 for unintentional injuries in 2019 alone in Nepal (WHO, 2020). WHO also estimated that the majority of 15,391 injury-related deaths occurring in Nepal were unintentional (79%) and remaining are intentional (WHO, 2020).

In 1959, Heinrich visualized injury causation through the 'domino' model, primarily for occupational safety purposes (Heinrich, 1959). Similarly, the Haddon Matrix was developed to understand the factors involved in injury causation and prevention. This model integrates three phases of an event (pre-event, event, and post-event) with four categories of factors (human, vehicle/agent, physical environment, and social environment) (Haddon, 1980). People have regularly been exposed to electric power, which has become an integral part of modern lifestyle. Sometimes, the inattentive use or exploitation of electricity may result in injury and mortality. Electrical hazards can take various forms and result in different types of injuries.

Most electrical injuries occur as a result of lightning, low-voltage (<1000 V), high-voltage (>1000 V), or short circuits or substandard wiring and hooking (Arnoldo et al., 2004). The first electrical fatality was recorded in France in 1879, in which the carpenter was killed by an alternating current (AC) of 250 volts (Harvey-Sutton et al., 1992). Workplace electrical injuries are common while performing tasks. Similarly, many people are exposed to electric shocks during daily household activities, recreational activities, and many more (Gautam & Prasain, 2011). Electrical injuries often result in either deformity, disability, or mortality and most of these electrical injuries are accidental and preventable (Zemaitis et al., 2021). The primary victims of electric electrical injuries were young men (Arnoldo et al., 2004), which happened due to work-related activities (Campbell & Dini, 2015).

Nepal is producing electricity on a large scale and distributing electricity in all parts of the country (Gunatilake, et al., 2020). The risk of electrical injuries has increased with this increased production, coverage of electricity, changing lifestyles, lack of knowledge, lack of safety measures, and unsafe behaviors. A study showed that about 1% of the injury cases registered in the emergency department at B. P. Koirala Institute of Health Sciences from January 2013 to December 2013 were electrical injuries (Gupta, et al., 2017).

The majority of injury-related deaths occur in developing nations (Peden et al., 2008). Nepal is one of the countries which experiences many electric shock-related injuries. Over the five years, 2,267 incidents were recorded, with 59.1% being fatal. The mean age of the casualties was 30.7 years (SD =15.6). Electrical injuries were significantly more common among males than females. Bagmati Province, had the highest rates of deaths and injuries, followed by Madhesh and Lumbini Provinces. The trend of electric shock deaths and injuries increased linearly, nearly tripling over the five years. Thirteen broad activities were identified during which victims suffered electric shocks, with household activities

being the most common. Monthly analysis revealed a spike in electrical injuries during the monsoon season compared to summer or winter. Notably, the number of reported deaths exceeded reported injuries, demonstrating that non-fatal incidents are underreported to the police.

There are few small-area-based studies on electrical injuries in Nepal (Dhital et al., 2020; Gautam & Prasain, 2011; Ghimire, et al., 2018). Furthermore, there is no systematic research or published studies on electrical injuries in Nepal. Thus, the actual magnitude of electric injuries and related mortality is almost unknown. The lack of information on the magnitude and causes of electrical injuries is a glaring challenge for preventing mortality from electric shocks. Hence, there is a need for research on electrical injuries to generate evidence on preventable injuries, disabilities, and deaths from such an essential commodity. This research aims to present the current status of electrical injuries by age, sex, provinces, months, and activities during incidents.

Materials and Methods

The positivist paradigm is a research approach that emphasizes empirical data, scientific methods, and observable, measurable phenomenon to understand and explain aspects of reality. This study also utilized the Nepal Police record the facts and evidence of injuries pertinent to an incident onto their database through the Daily Incident Recording System from all parts of the country. A retrospective descriptive study was conducted from the Nepal Police records of electrical injury-related incidents for five years (July 2015 to July 2019). With the official data request from Padma Kanya Multiple Campus, the national-level raw data on electrical injuries were received. Before extracting the variables, the records were read and checked manually to identify uniform patterns and correct inconsistencies throughout the case narratives.

A data extraction algorithm was developed, and available variables were extracted in MS Excel. The narrative data was in Nepali language. The variables (age, sex, district, province, reporting time, activities during the electric shocks and month of occurrence) were extracted using a pattern recognition algorithm. After extraction, variables were thoroughly checked with the original narratives. Simple frequency distribution has been used in the analysis. Some of the information were presented in the bar graph. In the analysis, age and sex were considered demographic variables, and administrative divisions (province) were used for the place of crash occurrences. Electric shock incidents were also discussed by month of occurrences and activity during the incidents. Further, the activities by broad population groups (children and adults) are presented in the result section.

Results

In five years, a total of 2,267 incidents were reported to the Nepal Police of which 59.1% were fatal (Table 1). Table 1 provides the distribution of electric shock-related deaths and injuries by age and sex group. About three fourth (75.1%) of the electric shocks victims were male. This study found that 5.4% of the electrical injuries victims' sex was missing. The percentage of male-female deaths and injuries remains almost similar (Table 1).

The age was grouped to present the information by children under age five, growing children and young children (15-17 years). Further age was grouped 18-29 years to study about early youth population and working age group and population aged 60+ years. The largest number of electric shocks-related fatalities (413) and injuries (383) were recorded among the 18-29 years age population followed by the population aged 30-34 years. Among total cases 1.9 percent were children under age five. Table 1 further revealed that children aged 5-14 years are also at high risk of electrical injuries in Nepal. The largest proportion (74.7%) of

electrical injury cases is represented by people aged 18-59 years. The mean age of the 2,267 persons with casualties from electrical injuries was 30.7 (SD = 15.6) years, the mean age for the injured people was less (3.8 years less) than the mean age of the people died (Mean Age 32.2 years) from electrical injuries. About 2 percent of the victim's age was missing.

Table 1

Distribution of Deaths and Injuries by Sex, Age group from Electric Shocks for Five years in Nepal

Characteristics of the victims	Type of injury		Total Cases
	Death N (%)	Injury N (%)	N (%)
Sex			
Female	265 (19.8)	178 (19.2)	443 (19.5)
Male	999 (74.6)	701 (75.5)	1700 (75.1)
Missing	75 (5.6)	49 (5.5)	124 (5.4)
Age group			
0-4	27 (2.0)	16 (1.7)	43 (1.9)
5-14	120 (9.0)	89 (9.6)	209 (9.2)
15-17	79 (5.9)	54 (5.8)	133 (5.9)
18-29	413 (30.8)	383 (41.3)	796 (35.1)
30-44	351 (26.2)	225 (24.2)	576 (25.4)
45-59	223 (16.7)	98 (10.6)	321 (14.2)
60-69	75 (5.6)	21 (2.3)	96 (4.2)
70+	30 (2.2)	18 (1.9)	48 (2.1)
Age missing	21(1.6)	24(2.6)	45 (2.0)
Mean	32.2	28.4	30.7
SD	16.4	14.1	15.6

Total: N (%)	1339 (59.1%)	928 (40.9%)	2267 (100%)

Table 2 below provides the distribution of electric shock-related deaths and injuries by Seven Provinces. The number of death cases was higher in Madhesh Province (381), whereas more injuries were found in Bagmati Province (420). In total, about one-third of the casualties (33.3%) were recorded in Bagmati Province. Table 2 further reveals that Karnali Province and Sudurpaschim Province recorded comparatively fewer electric shock incidents; deaths and injuries are proportional to the percentage of household electrification except for Gandaki Province. Bagmati Province has the highest household electrification rate (90.3%) and the highest percent (33.8%) of electrical injuries. Likewise, Karnali Province has the lowest household electrification (27.03%) and this province shares only 0.9 percent of the total electric shock cases of Nepal.

Table 2

Distribution of Deaths and Injuries by Provinces from Electric Shocks for Five Years in Nepal

Province	Type of injury		Total N (%)	Household electrification %*
	Death N (%)	Injury N (%)		
Koshi Province	195(14.6)	95(10.2)	290(12.8)	75.9
Madhesh Province	381(28.5)	158(17.0)	539(23.8)	79.77
Bagmati province	346(25.8)	420(45.3)	766(33.8)	90.30
Gandaki province	121(9.0)	88(9.4)	209(9.2)	87.39

Lumbini province	214(15.9)	133(14.3)	347(15.3)	81.03
Karnali province	12(0.9)	8(0.9)	20(0.9)	27.03
Sudurpaschim province	70(5.2)	26(2.8)	96(4.2)	58.90
Total	**1339(100.0)**	**928(100.0)**	**2267(100.0)**	

Note. *(Nepal electricity authority, 2020) ** (Provincial Population, 2017)

Figure 1 shows the five-year trend of electrical injuries in Nepal, with continuous linear increments, except in 2015, when the devastating earthquake occurred in Nepal. In five years, electrical injuries have increased by almost three times (259 to 681).

The monthly incidents are plotted for each year to demonstrate the monthly changing pattern of electrical injuries in Nepal. An almost similar pattern of monthly electrical injuries was observed in Figure 1. The number of electrical injuries was higher in the rainy season (May to August). In all years, the casualties were more elevated in June and July.

Figure 1

Electrical Injuries by Months in Five Years
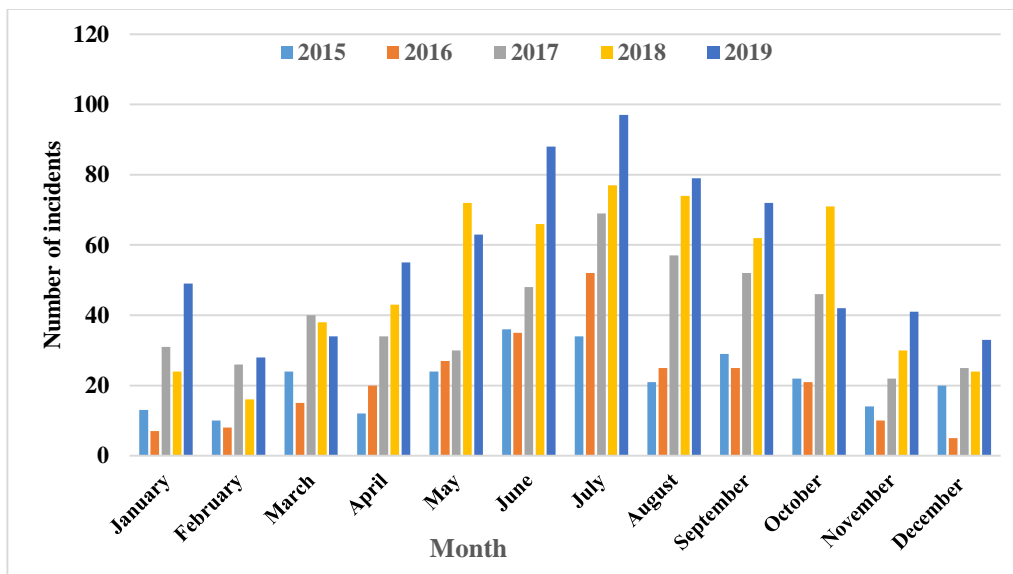
Thirteen broad activities for electrical injuries were identified from the recent five-year data. A substantial number of people (485) died or were injured during household activities. The use of electronic appliances has appeared as the second most important activity (17.9%) for electrical injuries. Likewise, many people died or were injured from electric shocks during activities related to agricultural work and farming (292) and working on or near electrical poles (297). About one in ten electrical injury cases occurred at workplaces or during construction works. Similarly, 4% of electrical injuries happened when a moving vehicle accidentally touched an open wire. Table 3 shows comparatively few death or injury cases (19) during electric hooking. Table 3 also presents electric shocks by children below 18 years and adults aged 18 or above; among total cases, 17 percent of the electric shocks occurred to children and the rest to adults above 18 years. Among the activities largest percent of incidents in the children occurred during the short circuit (26.3% for children and 73.7% for adult), followed by hooking. Similarly, about one-fifth of the incidents occurred while farming, factory works, short circuits, and high voltage current.

Table 3

Activity during Electric Shocks Incidents

Activity	%Children (>18)	%Adults (<=18)	Number of incidents (%)
Household activity	6.9	93.1	485 (21.4)
Using electronic appliance	10.7	89.3	405 (17.9)
Working on or near an electric pole	6.9	93.1	297 (13.1)
Farming	21.5	78.5	292 (12.9)
Construction works	21.6	78.4	208 (9.2)
Short circuit	26.3	73.7	142 (6.3)
Factory works	22.0	78.0	119 (5.2)
Vehicle touched an electric cable	18.5	81.5	85 (3.7)
High voltage current	20.0	80.0	76(3.4)
Transformer install/ maintenance	5.5	94.5	56 (2.5)
Electric work	15.0	85.0	28 (1.2)
Hooking	22.3	77.7	19 (0.8)
Others	10.4	89.6	55 (2.4)
Total	**17.3**	**82.7**	**2267 (100.0)**

Note. The sum of children and adult percent is 100.

Discussion

Our study has demonstrated that many people die or are injured from preventable electric shocks in Nepal. Usually, the number of nonfatal injuries should be significantly larger than the number of fatal injuries (Baker, O'Neill,

Ginsburg & Li, 1992). In contrast, our data source showed fewer injuries (928) than deaths (1339) from electric shocks. This indicates the fact that many nonfatal electric shock incidents were not recorded by the Nepal Police. However, it can be another argument whether it is the police who keep the records of all electrical injuries. The frequency of electric shock fatalities and injuries was highest in the 10-40 age group population, and the mean age of the victim was 30.7 years (SD =15.6). This finding is consistent with the results of developed and developing countries (Gupta & Trangadia, 2021; Ivanova et al., 2016; Mashreky et al., 2011; Massey et al., 2018).

In Western European countries, mortality from electric shocks is low, and children up to the age of ten years are almost unaffected (Ivanova et al., 2016). However, Nepal's findings contradict Western European countries' electrical injury statistics. It was matched with low and middle-income countries' electrical injuries for children under ten years old (Gupta & Trangadia, 2021; Mashreky et al., 2011). The data makes a pitiful revelation about how 5% of the deaths and injuries occurred in children below ten years.

The overall age distribution of electrical injuries revealed that people died 40 years before the average life expectancy of Nepal (Central Bureau of Statistics, 2014). Males accounted for most of the deaths (74.8%) and injuries (75%); this may be due to more male exposure to electric hazards than females. An analysis of data from the National Institution of Occupational Safety and Health also showed that very few females were dead or injured from the electric current compared to the males (Baker et al., 1992).

Nepal suffered from severe load shedding (scheduled power cut) until 2016/17, and the electricity supply slightly increased by 2017/18. Electrical injuries have been increasing every succeeding year. In the year of the devastating earthquake, electrical injury cases were lower than in the other average years. The

number of electrical injuries has tripled in five years. This trend of electrical injuries shows an increased risk to lives due to electric shocks in the years ahead.

Analysis of the spatial distribution of electrical injuries revealed that Bagmati Province has the highest number of incidents of the other six provinces. On the other hand, electrical injuries were at a smaller scale in Karnali and Sudurpachhim. The pattern of electrical injuries and household coverage of electricity are proportional, i.e., the higher the household coverage, the higher is the number of electrical injuries. In this context, our government is trying to increase household electricity coverage and promote the use of electric appliances. This relation speaks about the possibility of a rising risk of electrical injuries in the population.

Monthly analysis of electrical injuries shows increased cases of electrical injuries in the rainy season rather than summer and the winter season; this finding is consistent with the findings of a study of the Shivalik hills area in northern India (Kumar & Kumar, 2015). The proportion of electric shock incidents among males and females was almost similar to the studies from Maryland (Massey et al., 2018).

Electrical injuries can occur anywhere there is an electricity supply. However, they are more common in the home and workplace (Gupta & Trangadia, 2021). A study in India and Bangladesh showed that electrical injuries occurred in the surroundings of the home (Choudhary et al., 2019; Mashreky et al., 2011). This study also showed that one-fifth of electrical injuries happened while carrying out household activities.

A substantial proportion of electrical injuries occur as a result of work-related activities. This study identified that working on electric poles was another critical reason for electrical injuries in Nepal. Article 26 of the Nepal Electricity Act (2049 BS) has instructed the authority to ensure electrical safety during the

production and distribution of electricity. There were 19 cases of death and/or injuries that occurred while the person was hooking electricity directly from the transmission line which is an offense according to Articles 6 and 7 of the Electricity Theft Control Act (2058 BS). In Nepal the Internet and TV cables are also distributed from the electric pole. During the data extraction, it was found that a larger number of the technicians working for internet and television connection got electric shocks while working on the poles compared to electricians. The statistics showed that 17.9 percent of electrical injuries happened from electronic appliance use. This shows a lack of safety training for the internet and cable technicians, highlighting the need for safety training. Despite significant improvements in electronic product safety, electrical injuries are still a major cause of deaths and injuries. This study also indicated that the increasing usage of electronic appliances increases the risk of electrical injuries.

Farming also appeared as another vital activity for electrical injuries. Among all farming activities, fishing was more common, and 115 people got electric shocks. While working on the farm, people accidentally injured/died from electric shocks of open wires on the land. So, fishing from electric current should be completely stopped to prevent deaths and injuries from electrical injuries. Further, the electricity authorities should maintain the broken or fallen wires from the poles for the safety of general public. Occupational safety is neglected in Nepal (Gautam & Prasain, 2011). It may sound like there is a lack of legal provisions for electrical safety, however, the Electrical Rules (2050 BS) have specified many binding provisions to follow. The entire Section 6 is dedicated to electrical safety. As in other kinds of injuries, the implementation and enforcement of electrical safety legislation are found too weak; it is also reflected in electrical injury incidents, in which more than 25 percent of the total electrical injuries occur in the workplace. During travel, some of the vehicles come into contact with the electric current, and this study also found 85 people died and

were injured from electric shocks from the contact of the vehicle with the high-tension electric wires. There are legislative provisions specified in Articles 48, 49, 50, and 51 in Electricity Rules (2050 BS) regarding the height of the electrical transmission lines from the ground level and safety measures to apply when the transmission line has to cross a road.

The coverage of the electricity supply is increasing in Nepal. Along with the increment in the supply/coverage of electricity, deaths, and injuries from electric shocks have been increasing every succeeding year. The five-year trends and activity analysis during electrical injuries suggest an increasing number of electrical injuries in the years ahead.

Conclusion

Numerous lives have been lost or forced into disability from preventable electric shocks. Electrical injuries count of people is increasing every passing year. Statistics show up to 18 people are impacted by single electric shocks. Despite the serious public health threats, the electric shock-related issue is largely neglected in Nepal. As the government is entirely responsible for electricity distribution in the country, it should also be accountable for saving people's lives from electric shocks.

Acknowledgments

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Factors Affecting Purchasing Behavior in Buying of Passenger Cars

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Abstract

This study is about the consumer behavior in buying of passenger cars in Nepal. It aimed to identify the factors affecting the consumer behavior in car purchase. It used primary data, which came from a structured questionnaire on the six-point Likert scale that was sent to Nepalese car owners. Kathmandu was chosen as the sample site for our convenience to reach. Primary data was collected through the structured questionnaire. 411 car users were the sample size. SPSS software was used to prepare and look at the data. Through the path analysis, the effect of attributes, price, appearance, self-congruity, and brand personality on consumer buying behavior was examined using the structural equation modeling. The study found that there is significant positive impact of product attributes (β=.175, p=.012) on consumer behavior. It is also discovered that there is a significant positive effect of brand personality (β=.152, p=.032) and self-congruity (β=.619, p=.000) on consumer choice behavior but it was found that the product price (β=.073, p=.271) and product appearance (β=.084, p=.180) have no significant influence on consumer buying behavior towards passenger cars in Nepalese market. The study's results show how future researchers and business people can look at the new conditions for market growth.

Keywords: product attributes, product appearance, product price, self-congruity, brand personality, purchasing behavior

Factors Affecting Purchasing Behavior in Buying of Passenger Cars

Horsky et al. (2006) show how important it is to include knowledge of mark choices in a model of brand choice. Brand standards are what people agree on when it comes to a certain label (Overby & Lee, 2006; Rai et al., 2022). Expectations make it easier for people to choose by changing how they feel about the perfect brand. When a consumer's choices and tastes match, they choose choice over attitude's predictive value (Hellier et al., 2003). Sriram et al. (2006) say that the mark scores and market shares show how consumer tastes have changed. Finding out what people expect from a brand is considered an important part of making a good marketing plan, positioning the brand, and getting ideas for how to make the product grow (Alamro & Rowley, 2011; Dahal et al., 2022; Sharma et al., 2023). Understanding what people want from a brand helps build great brands that can have long-lasting relationships with customers.

There are a lot of competitive passenger car models in the market, giving customers a lot of brand options. Kwok et al. (2006) said that middle-class people put price above all else, while elite people put brand image, quality, self-congruity, performance, brand personality, and characteristics of the passenger cars at the top of their list. According to Van Rijnsoever et al. (2009), most customers buy expensive items that make a big difference in their lives in some way. In the car business, passenger cars are very complicated, expensive, and come with a lot of risks. So, to lower business risk, people in business need to figure out what makes customers choose one brand over another when they're buying private cars. In these situations, it's becoming more and more important for companies to understand the different needs, wants, goals, and tastes customers and makes products that meet those needs (Batra, 2015). So, it is important to know what factors Nepalese customers use to decide what to buy when they are looking for passenger cars.

In light of the past empirical evidence, the study results on the issue of consumer purchasing behavior need to be more consistent. But, in these issues the results of the studies are not consistent. For instance, Rai and Budhathoki (2023) discovered that product attributes have a big influence on purchasing behavior, but Rai (2019) found that product attributes do not have a big effect on brand preference. Also, Fathima (2019) found that prices have a big effect on brand choice behavior, whereas Laohakosol et al. (2019) discovered that prices do not have an effect on brand choice behavior. In the same way, Zainudin et al. (2020) looked into how the different aspects of a brand personality affect brand preference. However, Rai (2021) discovered that brand personality does not affect brand choice behavior. Therefore, these are the major issues to understand the consumer buying behavior in relation to the passenger cars. So, more study is needed to come up with a concept that can be used in other situations. These studies have also been done in different places, at different times, and in different countries. Because of this, it is important to know what makes Nepalese people choose one brand over the other when it comes to private cars.

A small number of studies have tried to find out how price, attribute, look, self-congruity, and brand personality affect the brands people choose. There have not been many large-scale studies that look at how these things affect people's decisions about whether or not to buy a car. Also, research done in one setting cannot be applied to another. This is because it is important to consider the specific setting when developing and testing a theory since cultural norms and practices can change based on the situation. The central research question of the study was whether the factors such as product attributes, product appearance, product price, self-congruity and brand personality influence consumer buying behavior in the buying of passenger cars in Nepal.

The general objective of the study was to identify the factors influencing purchasing behavior in the choice of passenger car. The specific goal of this study

was to investigate the influence of product attributes, product price, product appearance, brand personality and self-congruity on consumer buying behavior regarding passenger cars.

This research has not been conducted previously in the Nepalese context of the passenger cars. Therefore, this study will contribute to the existing literature for further study in relation to this topic. The findings of the study provide significant contributions to the theoretical framework. Consequently, the proposed model of consumer behavior provides an explanation for why consumers prefer passenger cars. The finding of the research also contributes to the marketing decision-maker for formulating marketing strategies regarding the consumer behavior of passenger cars. It is assumed that this study would lead to the creation of consumer behavior and demands of passenger cars.

Literature Review

Many factors might influence on consumer buying behavior but in this study product attributes, product price, appearance of the product, self-congruity and brand personality were taken as independent variables.

Product Attributes

Rai and Bhattarai (2024) did a study about factors influencing consumer brand preference of passenger cars. They investigated that the attributes, price and appearance of passenger cars do not influence in brand preference. Rai & Budhathoki (2023) looked into customer behavior and found that price, social factors, features of product all have a big effect on how people buy laptops. In the study of (Kurnia & Hasyim, 2023) looked into how product features affect company preference. It was found by the researchers that the dimensions of product attributes and positive influence on consumer choice was remarkable. Likewise, Customers think that a brand is more useful and stronger if it has more of those qualities (Thompson et al., 2005). Also, customers can say which options they prefer when they have similar features (Chernev et al., 2011). In the same

way, Petruzzellis' (2010) study shows how functional qualities have a big effect on how people choose brands and use their cell phones. When it comes to phone services, Alamro and Roewley (2011) agree that service provider features have a good effect on label preferences. Based on the aforementioned literatures the subsequent hypothesis was formulated:

H1: Product attributes significantly influence consumer buying behavior

Product Price

According to Rai et al. (2023), the price factor has a big effect on how people buy Smartphone. Wahyuningsih et al. (2023) found that people move brands based on the features and prices of the products they buy. Pitso et al. (2023) looked at how price, perceived quality, and brand image were important in predicting which cement brands people would choose. According to Liu et al. (2022), the price of a high-involvement product has less of an effect on sales. E-WOM effects, on the other hand, have a bigger effect. Rai (2021) looked into what makes people want to buy a Smartphone. He found that brand personality, features of product and price have a big effect on people's decisions.

As Petruzzellis (2010) said, rational consumers who rely on observable product characteristics care more about price than irrational consumers; price is still one of the best ways to tell if a consumer will act in a good or bad way (Lichtenstein et al., 1993). According to Verhoef et al. (2009), price had a big effect on how people felt about shopping. On the aforementioned literatures the subsequent hypothesis was formulated:

H2: Product price significantly influences consumer buying behavior

Product Appearance

Fathima (2019) looked into how people choose between brands of cell phones and found that appearance, price, and other factors that affect the choice to buy a cell phone had a bigger effect on brand preference than social factors. Rai (2019) found that price does not have a big effect on the choice of brand for

private cars. When getting a passenger car, on the other hand, brand personality and appearance affect brand choice. In the same way, Rakib (2019) discovered that features of product, brand name, price, and social factors impact on make people more likely to buy cell phones. Researchers Dhanabalan et al. (2018) looked at the study on what makes people decide to buy a car. They found that brand, price, style, cost, technical considerations, and utility are some of the things that matter in consumer preference.

The way something looks is not one of the things that are needed to do the work. Interpretation of attractiveness is a psychological benefit that comes from customers' hopes for the brand's good looks (Chitturi et al., 2008). According to research, a consumer's tastes are linked to how a brand looks or how they feel about its aesthetics (Sheng & Teo, 2012). Visual presence not only improves the way something looks, but it also affects how easy it is to use by using consistency metrics (Ghimire et al., 2021; Sheng &Teo, 2012). Based on aforementioned literature, the subsequent hypothesis was formulated:

H3: Product appearance significantly influences consumer buying behavior

Brand Personality

Rai and Bhattarai (2024) did a research on factors influencing consumer purchasing behavior of passenger cars. They investigated that the self-congruity and brand personality of passenger cars have significant positive influence in brand preference. A study by Nguyen et al. (2023) found a strong link between brand personality's five aspects and brand choice. According to Mao et al. (2020), brand identity, brand personality, brand image, and brand communication all have a big effect on people's plans to buy. In Tehran, Sharahi and Heshmat (2020) found a strong positive link between brand personality and customers' liking of insurance names.

One of the first people to come up with a substantive idea of brand personality was Aaker (1997). He defined brand personality as the collection of

human characteristics associated with a brand. Swaminathan et al. (2009) said brand personality means that the brand has become more like a person. Instead of brands, these models describe the personality traits that customers understand (Phau & Lau, 2000). Brand style is something that professionals think is important for telling competing brands apart. So, it can improve marketing and make customers like a brand more and change how people think about a product (Heding et al., 2009). Customers can express themselves through the brand's engaging personality, which draws attention to the brand's useful benefits. Because of this, it leads to good behavioral reactions. There is direct impact of brand personality on consumer brand choice (Chang & Chieng, 2006). Based on aforementioned literatures, the subsequent hypothesis was formulated:

H4: Brand personality significantly influences consumer buying behavior

Self-Congruity

Researchers Tsaur et al. (2023) found that self-congruity has a big effect on why people stay in hotels. Zhang (2022) discovered that consumers' self-congruity significantly affects their likelihood of being loyal to a company. Li et al. (2022) found that the self-image link greatly affects brand preference when the real and ideal self-images are similar.

According to Sirgy et al. (1997), the theory of self-congruity is used to show how a consumer acts depends on how much they think their self-concept fits the image of the perfect customer. From this, we can guess how customers will act, like what brands they will stick with and whether they plan to buy something. Aaker (1999) focused on the product and said that customers would pick marks that fit with the product. He did real-world studies to show that self-congruence has an impact on how people think about their own brand. Several empirical studies have shown that self-congruity changes how people choose to buy things. These studies back up the idea of self-congruity. The Self-congruity can also lead

to buying new things (Cowart et al., 2008). On the basis of aforementioned literatures, the subsequent hypothesis is put together:

H5: Self-congruity significantly influence on consumer buying behavior

Many factors might affect consumer choice behavior towards passenger cars but in this study attributes of cars, price of cars, appearance of cars, brand personality of cars and self-congruity of cars were used as independent factors for measuring the consumer buying behavior in the Nepalese context.

Figure 1

Conceptual Framework
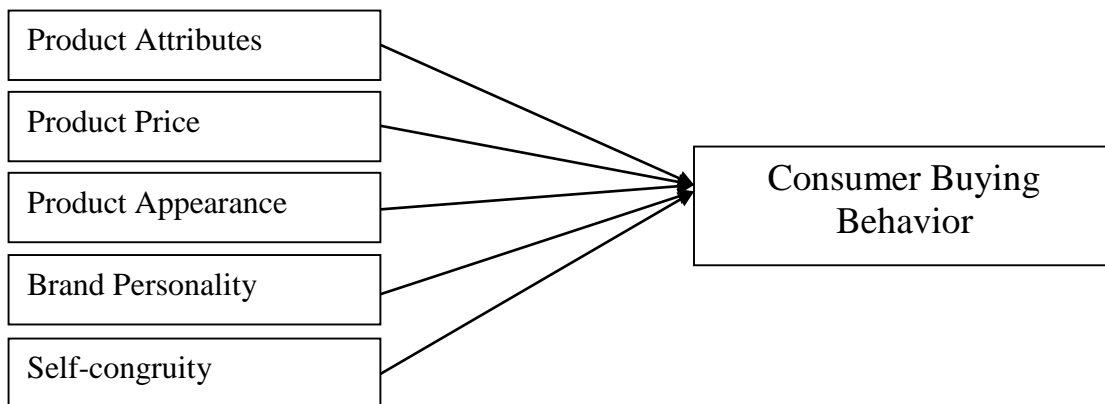
Research Methodology

Research methodology in this study includes the population as well sample design, sampling process, data collection processes, and data analysis methods used to look at the data and figure out how the factors that affect brand choice are related to each other. This research was based on quantitative technique. This study used descriptive and causal research designs based on first-hand evidence. The study used first-hand information from people who use cars. The population of the research was car users. The study used a convenient

sampling method. Using the survey method, structured 6-point Likert scale questionnaires were used to car owners in Nepal to get their answers on both dependent and independent factors. The answers were used to look at the points of view of car owners in the Nepalese market. 800 sets of questionnaires were sent to the respondents; among them, only 411 usable responses were received from the respondents. The sample size of the research was 411. The structure of the questionnaire is shown in Table 1.

Table 1

Questionnaire Structure

Group and Area	Questions	Measurement Scale	Remarks
Group A: Demographic information	4	Various Options	
Group B: Product Attribute	4		1=Strongly Disagree to 6=Strongly Agree
Group C: Product Price	5	6-point Likert Scale	
Group D: Product Appearance	4		
Group E: Brand personality	4		
Group F: Self-congruity	4		
Group G: Consumer Buying Behavior	4		
Total	**29**		

Table 2

Respondents Profile

Variables	Categorizations	Frequency	Percentage

Gender	Male	343	83.5
	Female	68	16.5
Age	Below 21	1	0.2
	21-30	54	13.1
	31-40	131	31.9
	41-50	170	41.4
	Above 50	55	13.4
Total		411	100

Data was analyzed using mean and standard deviation to identify the actual situation of responses. Correlation Coefficient was used to find out the relationship between antecedent factors and consumer choice behavior. The impact of independent factor on consumer choice behavior was identified by using Structural Equation Modeling.

The results of the exploratory factor analysis can be checked with confirmatory factor analysis (CFA). The CFI, GFI, RMSEA, IFI, AGFI, and NFI were used to check the model fit. The right values for the model were found. As shown in Table 3, all the values of model fit are within the acceptable range set by Byrne (2010). In this case, it is possible to evaluate the result drawn from the structural model.

Table 3

An Overview of Model Fit

Fit Indices	Suggested range of fit by Byrne (2010)	Model Value	Results
CMIN/DF	<5	2.104	Good
CFI	>0.9	.971	Good

GFI	>0.9	.906	Good
AGFI	>0.8	.881	Good
IFI	>0.9	.972	Good
NFI	>0.9	.947	Good
RMSEA	<0.08	.052	Acceptable

Composite Reliability (CR) and Average Variance Extracted (AVE) were tested to check the convergent validity of the separate hidden variables. Hu and Bentler (1999) recommend that to prove convergent validity, the value of CR must be greater than 0.7, the AVE value should be higher than 0.5, and the CR value should also be higher than the AVE value. In this case, Table 4 indicates that all of the numbers are within the acceptable range. The AVE value must be higher than the Maximum Shared Variance (MSV) value to prove discriminant validity. According to Hu and Bentler (1999), the value of AVE should also be higher than the inter-construct correlations. This means that all of the numbers are found to be within the ranges that were suggested. In this case, it means that the study's model is true and there are no problems with its validity. This means that the general measurement model is ready to be processed further.

Table 4

Model Validity

	CR	AVE	MSV	MaxR (H)	PRI	APP	BPR	ATT	SCO
PRI	0.919	0.691	0.039	0.976	**0.831**				
APP	0.905	0.696	0.085	0.977	0.163**	**0.834**			

BPR	0.888	0.653	0.170	0.968	0.057	0.150**	**0.808**	
ATT	0.874	0.621	0.107	0.986	0.198***	0.283***	0.209***	**0.788**
SCO	0.801	0.456	0.170	0.829	0.153**	0.292***	0.412***	0.327***

Note. There is no validity concern

Results

The study has used descriptive as well as inferential statistics for analyzing the data. Mean and standard deviation have been used as descriptive analysis, which is presented as belows;

Table 5

Descriptive and Correlation Insights

Variables	Mean	SD	AT	PR	AP	BP	SC	CB
AT	4.88	.69	1					
PR	5.04	.72	.198**	1				
AP	5.09	.74	.282**	.179**	1			
BP	4.80	.72	.221**	.054	.149**	1		
SC	4.34	.71	.311**	.158**	.253**	.394**	1	
CB	4.39	.77	.311**	.157**	.247**	.339**	.503**	1

Based on the Table 5, the mean values of all factors, i.e., product attributes, product price, product appearance, brand personality, self-congruity, and consumer buying behavior are 4.88, 5.04, 5.09, 4.80, 4.34, and 4.51, respectively, which were more than the mean value 3. This reveals that all responses were prone toward consumer buying behavior. All the scores of standard deviation were less than 1. This reveals that the data are more reliable

with the maximum value of 6 and minimum value of 1. It is good for further analysis.

The correlation between independent variables and dependent variable was analyzed using the correlation coefficient. Table 5 presents a significant and positive relationship between product attributes and consumer choice behavior, product price and consumer choice behavior, product appearance and consumer choice behavior, brand personality and consumer choice behavior, and self-congruity and consumer choice behavior in passenger car buying.

The final refined model is taken as the structural model for the study for testing the proposed hypotheses. Structural model were confirmed from validity and reliability assessment from CFA. The path diagram of the final refined measurement model has shown in Figure 2.

Figure 2

Structural Model
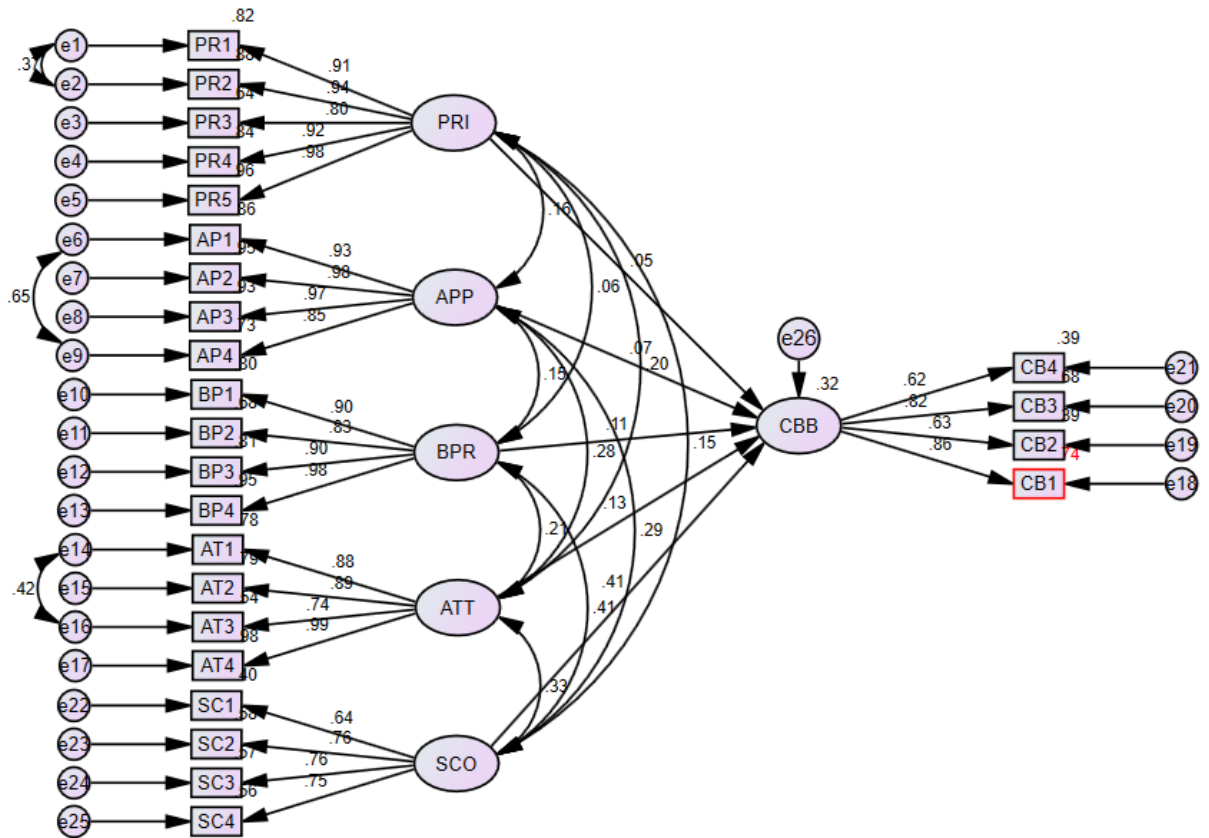
Structural Equation Modeling (SEM) was adopted to test the predetermined hypotheses that there is a link between different factors and how people buy things. Two numbers were used to look at the model. The first is R^2, which shows how well the expected model can predict values by showing how much of the variance can be explained by the independent factors. The second part is a path coefficient (β), which shows how much the independent factors can change the dependent variable.

Five independent factors in the study could only explain 32% of the differences in how people in Nepal bought passenger cars. This reveals that all of

the independent factors were good at predicting what people would buy. These variables could not explain 68% of the variation, but the other factors will be able to do so.

Table 6

Summary of Hypotheses Testing

DV	Path	IV	Estimate (β)	SE	CR	P	Results
CBB	←	ATT	.175	.069	2.525	.012	Accepted
CBB	←	PRI	.073	.066	1.101	.271	Rejected
CBB	←	APP	.084	.063	1.340	.180	Rejected
CBB	←	BPR	.152	.071	2.145	.032	Accepted
CBB	←	SCO	.619	.101	6.160	***	Accepted

Discussions

The major goal of the study was to find out what factors influence in buying private cars. The study used self-congruity, brand personality, product price, product attributes, and product appearance as independent factors to look at how people buy cars. The structural model led to a path analysis that looked at how self-congruity, appearance, price, brand personality and attributes affect people's decisions to buy a passenger car.

In Table 6, the result of hypothesis testing shows that the feature of passenger cars has a big effect on people's buying decisions (β = 0.175; p = 0.012), which means the hypothesis (H1) is true. This result showed that the features of the private car affect in the Nepalese market choose to buy them. This result was similar to the findings of Kurnia and Hasyim (2023) as well as Rai and Budhathoki (2023) that the attributes have a big effect on what people choose. This finding is consistent with the theory of consumer choice behavior. The

features like ground clearance and safety features are considered due to off road of Nepal.

In Table 6 above, another result shows that price does not have a significant positive effect on how people buy cars ($\beta = -0.073$; $p = 0.271$), which means that H2 is not supported by the result. This result shows that the price of passenger cars doesn't change how people decide to buy them. Rai et al. (2023), Pitso et al. (2023), and Wahyuningsih et al. (2023) contrasted with this conclusion. They found that price factors have a significant effect on consumer choice. This finding is controversial with the price economics theory. People thought that the passenger cars were high-class items, and the price is not a factor in purchasing these items. For high-involvement goods, the brand name is more important than the price. The earlier findings came from various studies examining a range of products, situations, countries, socio-economic groups, and products. So, the study's results may differ from those of earlier studies.

The next thing the study found was that the way a passenger car looks do not affect brand choice. The study's results ($\beta = 0.084$; $p = 0.180$) shows that H3 is false. This means that how passenger cars look does not affect people's buying decisions. This finding is different from what Fathima (2019), Rai (2019), and Rakib (2019) found, which is that the way a product looks affects how people decide to buy it. The consumer buying behavior theory doesn't match up with this result. When buying expensive things, people do not think about rational factors, they think about the emotional factors. Brand is important rather than the appearance of prestigious products. Passenger cars are also prestigious products, therefore appearance is not considered in the buying of passenger cars.

The next study showed that the brand personality factor of passenger cars has a big effect on brand choice ($\beta = 0.152$; $p = 0.032$), so H4 is true. This result was similar to the findings of Rai and Bhattarai (2024), Nguyen et al. (2023), and Mao et al. (2020) that brand personality has a big effect on what people buy. The

idea behind this result comes from the fact that brand personality may affect what people choose. Instead of rational reasons, brand personality is the most important thing for a high-involvement and prestigious product.

Last variable was self-congruity that has significant effect on brand choice ($\beta = 0.619$; $p = 0.000$). This means that H5 is also true. This result agrees with those findings of Rai and Bhattarai (2024), Tsaur et al. (2023), Zhang (2022), and Li et al. (2022) which said that self-congruity may affect brand choice. It is also a common theory that the self-congruity affects how people choose brands, which is why this result makes sense. It fits with the theory of customer behavior. It means the rational factors are less considered rather than the emotional factors in the buying of prestigious products.

Conclusions

The goal of the research was to find out which factors influence consumer choice behavior in Nepal in the buying of private cars. The study looked at how attributes, appearance, price, brand personality, and self-congruity affect in the buying cars.

The first goal of the study was to find out how different attributes of private cars affect people's decisions to buy them. The results of the study show that the attributes of private cars affect what people buy. So, it can be said that consumers think about the practical aspects of a passenger car when they are picking one out. It shows that adding the existing attribute of passenger cars might make people more likely to buy them.

The second goal of the research was to explore how the looks of private cars affect people's decisions to buy them. The passenger car's look includes parts that are not useful. The study's result shows the passenger car's look is not an important factor in Nepal when selecting a passenger car.

The next goal of the study was to look at how the price of private cars affects people's decisions to buy them. The study's results show that prices for

private cars do not affect in the brand choice of people. It can be said that the passenger car' price was not considered as a major factor in how people in Nepal chose the passenger cars.

The study's other goal was to look into how brand personality affects people's decisions to buy private cars. The finding shows that the personality of a brand affects to the consumer choice. Therefore, it can be said that customers put more weight on the personality of the passenger car brand when choosing a brand. Researchers have found that personality traits may make people more likely to buy private cars. Nepalese people usually buy private cars based on how well-known the brand name is. This affects how people buy things. People want to feel personally connected to well-known brands. For high-involvement products, the brand is seen as an important feature.

In addition, the study's last goal was to look into how self-congruity affects people's decisions to buy private cars. Researchers discovered that self-congruity has a big effect on how people buy private cars. It can be said that self-congruity has been seen as a major factor in changing people's decisions to buy a private car. People's self-images and brand images of private cars may be more similar, which may make people more likely to buy those cars. It means that people who buy passenger cars try to match the self-image with the brand of passenger car. This could be because people want to improve their self-image through the brand image of the passenger car and want to be in a situation where their sense of self is strong. In Nepal, people think of passenger cars as very expensive and for these expensive items, people do not look at the price, they look at the brand and image. It is also decided that the emotional factors are more important than the rational factors.

The study's outcomes might add the value to the theory of consumer behavior. In theory, when people buy a passenger car, they are more emotional than rational. This is because reasonable factors like attributes have less effect on

their buying behavior, and a car's price and appearance do not have a big effect. However, emotional factors like self-congruity and brand personality have a big and positive effect on their buying behavior when they choose a passenger car. When making marketing plans, the marketing manager and buyers should not focus on rational factors instead of emotional ones.

Limitations and Future Research Directions

There were some limitations of the study that point out for future research direction. The limitations with the study point the way for future research direction. First, this study has been conducted in the developing county Nepal. This research can be done in both developed and developing countries, with people from a wide range of backgrounds, cultures, beliefs, habits, attitudes, and levels of wealth. Second, this model can be used in more service areas. Third, this study have used only five independent variables such as product attributes, product price, and product appearance, brand personality and self-congruity to measure the consumer behavior towards passenger cars in Nepal. More independent variables which are not included in the study can be used to really examine the consumer behavior towards passenger cars. Fourth, this study has been conducted in passenger cars product only. Therefore, the study can be done with other products than passenger cars such as Smartphone, two wheelers, service sectors etc. These results will be the first real-world evidence and set the stage for more study to come.

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From Historical Context to Contemporary Realities: Illicit Capital Outflows from Nepal

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Abstract

This paper explores illicit capital outflows, explaining its multifaceted implications in underdeveloped countries like Nepal. The paper also highlights the historical dynamics adjacent to illicit financial transfers, including their causes, mechanisms, and repercussions. The paper examines the various facets of illicit capital outflows, corruption, and bad governance mechanisms in Nepal. It explores how modern technology and global financial structures facilitate these outflows, contributing to a drain of resources from Nepal. Moreover, the study delves into historical contexts where significant capital outflows occurred due to political transitions and exploitation of national treasuries. The paper also discusses contemporary instances of illicit financial activities, including illegal transactions through Currency Smuggling, Hundi, and the involvement of banks and business entities in illegal capital flights from Nepal to abroad. It emphasizes the challenges faced by regulatory bodies in curbing these illicit practices and their adverse impacts on economic development, revenue collection, and the formal economy in Nepal.

Keywords: illicit, capital, outflow, underdevelopment, Nepal

From Historical Context to Contemporary Realities: Illicit Capital Outflows from Nepal

Illicit capital outflows are a substantial challenge to the economic growth and development of less developed countries. This research paper's main objective is to explore the implications of illicit capital outflows in Nepal. The research sheds light on the various causes, instruments, and impacts associated with illicit capital flights. Similarly, the paper explores the roots of illicit capital outflows, encompassing bad governance, corruption, and socio-political situation and instabilities prevalent in the nation. In the meantime, the paper also explores the impact of modern technology and financial market structures in spreading capital outflows, analyzing how these factors contribute to the flights of resources from Nepal to other countries. By examining historical contexts and contemporary instances, including instances of Hundi, currency smuggling, illegal financial activities in the country. This paper also seeks to expose the complex layers of challenges faced by regulatory bodies in mitigating illicit capital flights from Nepal.

Understanding Illicit Capital Outflow

The illicit capital outflow is also known as illegal financial transfer or capital flights from one place to another. It is the movement of property, assets, and wealth from one country to another (Dev & LeBalanc, 2013). It is a drain of the capital out of the country illegally that enables tax evaders, businesspersons, corrupt politicians, officials and others to protect their property from seizure (Massa, 2014). According to Rahman et al. (2019), illicit capital outflows derive from under-invoicing of exports and over-invoicing of imports. Multinational and transnational corporations help to promote illicit capital outflow through tax evasion.

The modern technology and financial market structure facilitate the transfer of capital from one country to another (Schneider & Enste, 2000).

Bouchet (2012) identifies that the major factors of capital outflow from one country to another are internal causes like political disturbances, bad governance, high levels of corruption, socio-political and economic instability. Furthermore, he discusses external causes like opacity, loose banking regulation and financial policies as reasons for the illicit capital outflows from underdeveloped countries.

Acemoglu et al. (2003) suggested that the illicit capital outflow occurs because of the corruption and rent-seeking extractive political institutions. Acemoglu and Robinson (2004) examined that political and social instability, high level of inflation rates in the country, higher level of tax liabilities, financial deficit, high level of corruption, lack of investment friendly environment, bad governance system will lead to illicit capital outflow from developing and underdeveloped countries to the developed. Rodrik et al. (2002) argued that inflation creates pressures and stimulates domestic agents to engage in illicit capital outflow. While agreeing to this argument, Ajayi (1995) reasoned that it may inspire domestic financiers to transfer their capital and wealth to foreign countries. Blankenburg and Khan (2012) find that the illicit capital outflow is the result of social, political, and economic situation and controls in developing countries.

Kar (2012) defines illicit capital outflows as a trans-national transfer of assets earned through corruption, smuggling, illegal and criminal activities. He argues that the illicit capital outflow is a process of transfer of money from one place to another through violation of the rules and regulations. Kar and Freitas (2013) assess the relationship between illicit capital outflows and the growth of the black economy and find out that they reinforce each other. The lack of transparency in the governance system is the main reason behind the black economy. It is an important aspect of illicit capital outflows (Moore, 2012). Moore (2012) further argues that illicit capital outflows have the potential to securely hide illegal assets and wealth in tax havens accelerating the pace of

corruption and other illegal and criminal activities. The illicit capital outflow is one of the major consequences of corruption and financial irregularities (The Organization for Economic Cooperation and Development, 2012).

Illicit capital outflow threatens developing countries' good governance, development, and financial integrity. It is driven by factors like corruption, ugly governance, and dull financial systems. Its underground flora allows tax evasion in the host country and facilitates the flights of illegal assets across borders (Kar & Cartwright-Smith, 2010).

Illicit Capital Outflow and Underdevelopment

The illicit capital outflows have been promoting the development of underdevelopment in the third world and it also plays an important role as a derail of development. Acemoglu et al. (2001) strongly argued that the lack of economic growth and development accounts for the illicit capital outflow in the developing countries. Acemoglu et al. (2003) examined that the weak economic status and underdevelopment are ascribed to the extractive political institutions which lead to widespread rent-seeking and corruption and supports the illicit capital outflows.

Saleh (2004) argued that the weakness of institutions has stifled investment, leading to illicit capital outflows in underdeveloped countries. Ali and Walters (2011) found that state institutions significantly contribute to illicit capital outflows from Africa. Rahaman et al. (2018) also noted that these outflows have a strong relationship with underdevelopment. The OECD (2013) reported that illicit capital outflows negatively impact the economies of developing nations. UNECA (2012) showed that widespread corruption and illicit capital outflows are mutually inherent in rent-seeking economies, promoting underdevelopment. Le and Zak (2006) conducted a survey in forty-five developing and underdeveloped countries, finding that political uncertainty and instability directly contribute to increases in illicit capital outflows. Additionally, the easy opportunities for capital outflow and transferring money and assets abroad through illicit sources damage the investment

environment, economic growth, and development activities in developing and underdeveloped countries (Rahaman et al., 2018). The rapid increase of these outflows day by day negatively affects the economic development of third-world countries.

The illicit capital outflows from Russia in 1990s was the outcome of the high level of tax liabilities, unscientific taxation system, weakening of the banking mechanism, vested interests of the political and bureaucratic elite, the widespread corruption, and the weak governance system (Loungani & Mouro, 2000). They present a data which shows that India lost about 213 billion USD because of illicit capital outflows between 1947 and 2010. The socio-economic and political structural factors and bad governance system played an important role for outflows of assets from India.

Global Financial Integrity (2017) also estimates that illicit capital outflows from developing countries ranged from 620 billion USD to 970 billion USD in the same year. The export of capital illegally is a major problem for many developing and underdeveloped countries. The majority of the underdeveloped countries are underdeveloped because of the flights of capital illegally (Erbe, 1985). Ndikumana and Boyce (2008) exposed the very terrible picture of capital outflow from Africa. According to them more than 80 percent of the African capital was outflowing through illegal way to developed countries. Kar (2012) shows that illicit capital outflows from Mexico are about 872 billion USD in the period between 1970 and 2010. Frank (1970) showed that the net capital outflow from the Brazil was 1,667 million USD between 1947 and 1960. We can find the similar situation in the whole underdeveloped world. OECD (2013) identifies the impact of illicit capital outflow and finds that it will reduce the investment, budget expenditure, employment opportunities, infrastructures like schools, colleges, hospitals, road, bridges, hydropower, irrigation channel and ultimately contribute to the development of underdevelopment. The capital outflow also damages the

state institutions like banks, financial investigation agencies, and legal mechanisms.

The corruption and money laundering mutually promote the capital flights. Chaikin and Sharman (2009) found that most of the illicit capital outflows are from developing to the developed countries like Switzerland, UK, USA. Cooley et al. (2018) examine that the developed country's institutions and brokers play a crucial role in helping the transnational corruption and illicit capital outflows. Kleptocrats transfer wealth and assets abroad. They use the common techniques to transfer assets like appointing relatives or friends as the ambassadors who manage the outflow of money to abroad. Cooley and Heathershaw (2017) find out that the developed countries seem to have come up with various schemes to attract capital from the developing and underdeveloped countries. For instance, many countries have been announcing golden investor programs regularly. UK's Tier 1 program directly contributed to attract the capital from the developing and underdeveloped countries. Rush (2015) identifies that the substantial amounts of corrupt wealth from Russia, China, and other developing countries have been laundered into the UK through this program. Farolfi et al. (2017) also identify that Cyprus offers a golden investor program and the participants of this scheme receive passports to work and reside anywhere within the European Union member countries. According to them more than four-hundred passports were granted under the program in 2016 and it also produced more than 4 billion Euros wealth of investment between its 2013 inception and mid-2017. Malta also lunched such kind of passport program and was able to attract more than 200 million Euros till mid- 2016 (Cooper, 2016).

Illicit financial outflows drain the capital out of the country and illegally enable tax evaders, corrupt officials, businesspersons, and others to protect the money from seizure (de Willebois et al., 2011; Massa, 2014). Illicit financial outflows exceed aid funds, and a great proportion of the flows are likely to steam

from corruption (GFI, 2017). OECD (2018) estimates illicit outflows was 137.2 billion USD in 2014.

Illicit capital outflows significantly undermine a nation's development by depleting resources that could be invested in crucial sectors like health and education. When financial resources are drained, governments have fewer funds to allocate towards building robust healthcare and educational systems. This underfunding leads to poor health outcomes and inadequate educational opportunities, resulting in a workforce that is less productive and innovative. Consequently, low productivity and limited employment opportunities perpetuate low-income levels, trapping the country in a cycle of underdevelopment.

This vicious cycle is self-reinforcing. Poor health and education weaken the population's ability to contribute effectively to the economy, which in turn hampers economic growth and development. As illicit capital continues to flow out, it further diminishes the nation's capacity to improve its physical, economic, and social structures. The continuous loss of financial resources deepens the state of underdevelopment, making it increasingly difficult for the country to escape poverty and stagnation. Thus, illicit capital outflows are a major cause of the persistent low income, low productivity, and overall poor development in Third World countries.

Research Objectives and Methodology

The key objective of the research is to explore the phenomenon of illicit capital outflows from Nepal, across historical contexts to contemporary realities. The research utilized narrative review methodology. The research involves an extensive review and synthesis of existing available literature, research, many study reports and other relevant publications. The analysis encompasses both historical perspectives and contemporary instances and explore the causes, mechanisms, and repercussions of illicit capital outflow related activities in Nepal.

Findings: Capital Outflows from Nepal

During the Shah and Rana regime, significant capital outflows in the history of Nepal have hindered the development of the nation. With Ran Bahadur Shah's travel to Kashi in 1800, the flow of wealth started with substantial amounts of gold and silver. This pattern continued with successive rulers and their families, who outflow large sums and resources to India for personal use and luxury consumption. These actions crippled Nepal's economy, stifling investment in critical sectors such as road, irrigation, industry, healthcare and education, perpetuating the cycle of underdevelopment. This trend of capital outflow did not stop with the end of the Rana rule but continued in modern times through various means including currency smuggling and the use of informal money transfer systems like hundi. These practices have continuously undermined Nepal's economic stability and development prospects.

Capital Outflows during Shah and Rana Regime

The history of Nepal during the Shah and Rana regimes is marked by significant capital outflows that severely hindered the nation's development. When Rana Bahadur Shah faced internal power struggles in 1800, he fled to Kashi with substantial gold and silver, followed shortly by Queen Rajrajeshwori, who took a large amount of the national treasury. This pattern of siphoning national wealth continued with successive rulers and their families, who transported vast sums of money and resources to India for personal use and luxury consumption. These actions drained Nepal's economy, preventing investment in critical areas like industry, healthcare, and education, thereby perpetuating a cycle of underdevelopment.

When Rana Bahadur Shah was proved to be weak in the internal power struggle, he went to Kashi on May 21, 1800, by handing over the crown to his 3-year-old son Girvan Yoddha Bikram Shah. He had taken huge property as gold and silver with him (Subedi, 2061 B.S.). On the third day of his departure, Queen

Rajrajeshwori also went to Kashi with jewelry and huge amounts of money from the national treasury. Later when King Rana Bahadur was out of money, Queen Subarnaprava sent 82 thousand rupees for him from Nepal in October 1801. Again, Queen Subarnaprava sent 160 thousand rupees to him which he used for entertainment purposes (Dhakal, 2060 B.S.). He had spent too much money while he stayed in India that Nepal had to bear loan (Regmi, 2074 B.S.). At that time, the advisor of the Queen Subarnaprava, Subuddhi Khadka had taken a huge amount to India from the national treasury (Dhakal, 2060 B.S.).

A huge amount was taken to India during the tenure of Bhimsen Thapa as well. Mathawar Singh Thapa, a cousin of Bimsen Thapa took 150 thousand from the national treasury to India and spent the money in entertainment and party organizing in Kolkata (Acharya, 2068 B.S.). During a short time between 1839 when Bhimsen Thapa died and 1846 when the Rana regime began, there had been exploitation of the national treasury extensively by *Bhardars* as well. *Chautariya* Guru Prasad Shah can be taken as an example. He fled by capturing 1.2 million rupees from the national treasury and went to Gaya of India in December 1843 (Acharya, 2068 B.S.).

When Queen Rajyalaxmi was exiled to Banaras, she had taken 4.9 million rupees cash and jewelries that were worth more than 1.5 million rupees (Ghimire, 2015). According to Acharya (2068 B.S.) around 40 lakh rupees was siphoned abroad by Jung bahadur. It was the greatest amount of money that was siphoned to foreign country in the history of Nepal. With this, the trend of syphoning money of the national treasury to abroad got started (Ghimire, 2015).

Ranoddip, who came to power after Jang Bahadur, was assassinated by his own brother. After this, 'Jung' and 'Narashinga' family made agreement with the Shamsher and were exiled to India with 2 million rupees and jewelries with them (Baskota & Sharma, 2055). During the latter half of the Rana regime, 'A' class Rana used to treat the 'C' class Ranas badly. In 1990, Juddha Shamsher had

chased 'C' class Ranas from Nepal and excluded them from the roll. Those who got exiled had taken a lot of money with them (Mathema, 2073 B.S.). According to Mathema (2073 B.S.), they had taken money with them because they did not think it was wise to keep property in Nepal at that time. They kept some immovable property in Kolkata and Mumbai and got established in India as well.

The Rana families who took money from Nepal to India deposited the money in the Indian Bank (Pande, 2076 B.S.). Bir Shamsher had deposited a huge amount of money in Indian Bank (Amatya, 2004 B.S.). The way the national treasury had been drained and national treasury got vanished from Nepal during the Bir Shamsher's tenure has been stated by Nepal (Nepal, 2055 B.S.). The treasure that was collected from the national treasury were transported by the cart to Indian Bank. Chandra Shamsher had deposited about 400 million rupees to the foreign bank during his tenure (Nepal, 2055 B.S.). While the transportation system and markets were extended up to the Nepal's border, Chandra Shamsher had smuggled a lot of wood from the jungle of Bardiya. millions of rupees got this way was deposited in the Indian bank (Regmi, 2074 B.S.). Padma Shamsher bought land and home for himself in India right after he went to India. When he was out of power and got sacked from the Prime Minister by Mohan Shamsher, he went to India with a huge amount of money from the national treasury (Bhattarai, 2059 B.S.). Padma Shamsher had taken 11.4 million rupees with him on March 1, 1948 (Pande, 2076b, B.S.).

All the children including 2 sons and 6 daughters of Mohan Shamsher got married in India. The majority of Mohan Shamsher's property was spent giving dowry to his daughters. Through dowry, a huge property went to India from Nepal (Pande, 2076b B.S.). Babar Shamsher was popular in the stock exchange of Mumbai during the Rana regime. Hundreds of thousands of shares were exchanged daily in his name. All the sons of Chandra Shamsher had got 8 million rupees worth of money and share including Babar Shamsher who had invested the

money adding a lot to his family share to the share market in India (Pande, 2076b B.S.). Last Prime Minister of Rana Regime, Mohan Shamsher had also taken a lot of money from the national treasury to India when he was sacked out of the power. High level officials and *Badahakims*who were not satisfied with the establishment of democracy in 1951 also took a lot of property with them to India (Research and Media Centre against Corruption Nepal, 2063 B.S.).

British Government used to provide an annual royalty of 1 million rupees to the Ranas for the contribution of *Gorkhali* Military during the First and the Second World War. Later, the amount increased to 2 million annually. The Rana rulers deposited the amount in the banks in England (ReMAC Nepal, 2063 B.S.). Similarly, when the road from Siliguri to Lhasa through Sikkim was opened in 1904, the trade route from India to Tibet via Kathmandu got closed. Many *Newar* families from Kathmandu took their property and went to Kalingpong (Shakya, 2018).

All the money collected as revenue in Nepal? was deposited to the Imperium Bank of Kolkata, Banaras Bank, and other banks in the border area, when their tenure was completed or were sacked out of the power, Rana rulers and their families fled to India with huge property with them. The Rana rulers doubted about the safety of their property in Nepal for two reasons. First, they could be killed for their property by their own brothers at any time and second is that they had to flee from Nepal at any time once they were sacked out of the power. So, Indian banks were an easy option for them. They purchased land and houses in India and passed a luxurious life there. Larrain (1989) argues that luxury consumption by backward countries local oligarchies is the main cause of underdevelopment in the third world.

The rulers directly took big amount of money, wealth, and assets outside the country during the Shah and Rana regimes. The trend of collecting heavy tax from people and depositing the amount in the Indian banks, purchasing properties

in foreign countries, and spending in luxury was extensive at that time. There was a lack of resources for establishing industries and factories, and conducting the physical, social, and economic development in the country.

Capital Outflow in Modern Regimes

After the Rana regime, the trend of capital outflow legally or illegally did not stop. In coordination with the International Consortium of Investigative Journalist (ICIJ), the Centre for Investigative Journalism, Nepal (CIJ) had done research on the illegal capital outflow from Nepal. Acharya et al. (2077 B.S.) found out that there are 9 banks and 10 companies in Nepal that are involved in the illegal capital outflow from Nepal. According to the study, a total of 34.84 billion rupees had been outflown from Nepal illegally in 2009 to 2020. ICIJ and CIJ published that data according to the secret paper produced by Financial Crimes Enforcement Network (FinCEN).

The people, institutions, or organizations familiar with the virtual world are involved in illegal transactions by making dollar cards. According to a report of FinCEN, there had been transaction of 41 million 176 thousand USD from July 14, 2014, to January 19, 2016, in various countries including Nepal. Various facts have been published on the virtual transactions (Acharya & Sapkota, 2077 B.S.).

A huge amount of money has been deposited in Swiss bank illegally from Nepal. According to CIJ (2075 B.S.), the trend of depositing money in the Swiss bank started when the Maoist insurgency started in Nepal. In 1996, 11 million 42 thousand Swiss Franc was deposited in the bank. This amount increased to 242 million 72 thousand Swiss Franc in June 2006 that has been deposited by Nepalese in Swiss Bank. Compared to 2019, the deposit doubled in 2020, as shown in Figure 1.

Figure 1

Nepali Money in the Swiss Bank
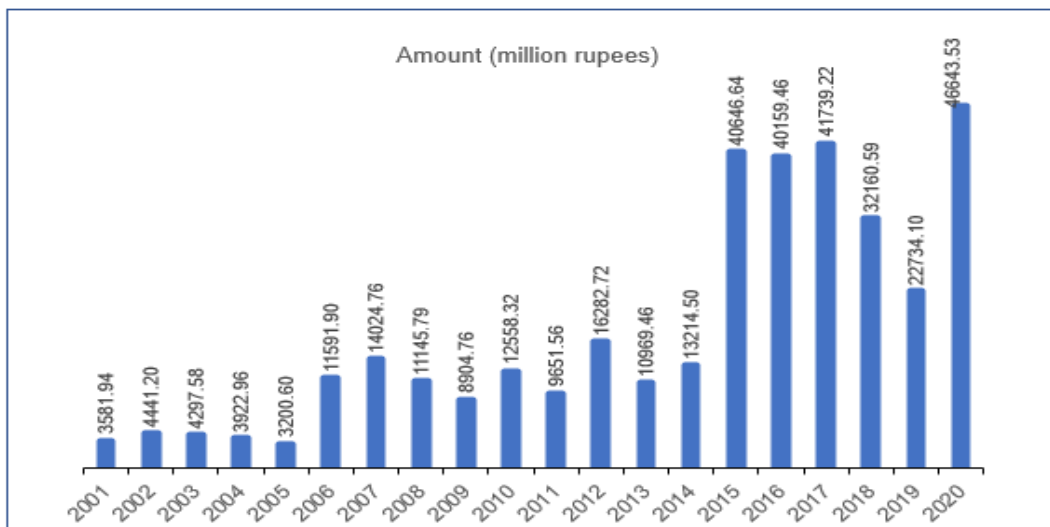
Note. This figure was constructed by the authors based on various reports of the Swiss National Bank.

There is legal provision for prohibition to Nepalese for investment in the abroad. However, according to the data published by ICIJ and CIJ, 55 Nepali have investment abroad (CIJ, 2075a B.S.). Business organizations such as Chaudhary Group and Golchha Organizations have made their investment in tax haven (in the countries where it is easy for tax evasion) (Acharya & Sapkota, 2078 B.S.). CIJ (2075b B.S.) has published a fact which states that Nepali businessman Ajay Sumargi among others have involved in money laundering by first taking the cash out of the country to abroad illegally, establishing companies and bringing back the money through companies. According to the published data, 48.372 million USD have been sent to Nepal through Jodhar Investment which has been registered in the British Virgin. The company is registered in the name of Ajaya Sumargi.

Similarly, with a decision of Deputy Governor of the Nepal Rastra Bank, Shiva Raj Shrestha, 1.920 billion rupees have been outflown from the country illegally. He had been suspended on November 4, 2019, for this decision by the Bank Executive Committee. A separate committee had been established for

investigating Shrestha. The committee had suspected him of being involved in money laundering and had recommended the Government to act against him. However, the cabinet meeting on January 17, 2020, made the decision that Shrestha was not to be taken action on and was reinstated.

A study by Global Financial Integrity found that between 2002 and 2011, about 80.5 million USD a year was illicitly outflown from Nepal. Out of the total 144 countries included in the study, Nepal ranks 66th among the countries with such illicit capital outflow. This indicates that a large amount of capital is fleeing from Nepal (Commission for the Investigation of Authority 2077 B.S.).

In this way, the illicit capital outflow did not stop but increased in the modern democratic regimes. Until the republican regime, the number of Nepalese people depositing huge amounts in Swiss Bank has been increased tremendously. While capital outflow from Nepal has been increasing, there have been negative impacts on development process of Nepal.

Currency Smuggling

Currency smuggling involves the transfer of large amounts of money. It is an illegal transfer of currency from one place to another. The smugglers involved in currency smuggling are motivated for various reasons like illegal trade, human trafficking, narcotics trafficking, corruption, or tax evasion (Reuter, 2013).

The smuggled currency is one of the serious threats to the national economy which promotes the illicit capital outflow from the country (Gilmore, 2004). Currency smuggling creates a big challenge of development in Nepal. The Table 1 shows that the trends of currency smuggling from Nepal.

Table 1

Currency Smuggling

Fiscal Year	2011/12	2012/13	2013/14
Amount (Rs.)	25843478.13	73528766	140047926

Source: DRI Annual Reports

The study shows that the volume of illicit flow of currency is increasing every year. According to the Revenue Investigation Department the rate of smuggling has been increasing annually. The amount of invasion by the Tribhuvan International Airport (TIA), different boarders and other places of Nepal seems to increase high every year.

Nepal Rastra Bank also seems to have been involving in illegal money smuggling. The Money Laundering Department has filed case against the employees of SBI Bank on April 14, 2020, in the Special Court accusing them to have been involved in smuggling 410 million rupees to India by making false LC. Similarly, a next data has been published indicating the Everest Bank and Nepal SBI Bank for smuggling 260 million rupees to India by establishing a fake company (Mainali, 2076 B.S.).

Not only this, the Tribhuvan International Airport has also been involved in smuggling a huge amount of money illegally. For an example, an Indian citizen, Bandana Soni was arrested on May 10, 2019, with illegal money of 100 thousand USD. Similarly, on April 8, 2019, Subash Shrestha, was arrested from departure of the Tribhuvan International Airport with illegal money. The Nepal Police had arrested him with 22 thousand 1 hundred 50 Thai Bhat, $ 10 thousand, 1 thousand 3 hundred 80 Euro, and 80 thousand Chinese Yen. Similarly, senior captain of NAC Suvarna Awale was arrested while just before fly to Dubai with 93,600 USD on 10 April 2017 (Bhattarai, 2074 B.S.). The illicit capital outflow from Nepal has been increasing through currency smuggling as well.

Capital Outflow through Hundi

Hundi is an informal, traditional, and illegal medium of money transfer. Hundi has established a strong nexus. Hundi has direct effects on the inflections, foreign exchange leakage, corruption, black market trade and capital outflow (Ghimire, 2018). The capital outflow from Nepal through Hundi has been increased tremendously. For an example, based on informal discussion with

government representatives an estimated data of researcher's shows that the workers working in South Korea have been sending around 44 billion rupees through hundi annually. While comparing the total income of Nepalese workers in South Korea and remittance received in an informal way from Korea to Nepal, this data has been estimated. According to Nepal Rastra Bank, 18.3497 billion rupees was received from South Korea in the year 2017/18. This amount is about 44 billion less than the total income of the Nepalese workers working in South Korea. According to Employment Permit System (EPS), Nepali workers earn at least 63 billion rupees annually in South Korea. Only from 2008 Nepalese workers have been going to South Korea to work. Until 2018, there were 35 thousand workers in South Korea. The ones who worked in industries earned 200 thousand per month while those who worked in agriculture earned at least 150 thousand rupees. That money should have been received in Nepal, but the money is sent through Hundi. Only 31 percent the total income made by Nepalese workers is received in Nepal through official medium.

Treasurer of Non-Residential Nepali Association South Korea, Alok Baniya was deported from South Korea on June 23, 2019, accused of doing transactions through hundi. Annually a lot of remittance is received to Nepal from South Korea (Table 2).

Table 2

Remittance received from South Korea to Nepal

Fiscal Year	Number of people going for employment	Remittance (in $ million)
2014/15	5288	187
2015/16	7423	274
2016/17	5804	504
2017/18	4832	1621

Source: Various reports of Nepal Rastra Bank.

A big part of the amount collected in South Korea for hundi goes to China. The taxation to this amount is low which is spent to import goods in Nepal. The amount is used for illegal business. The hundi amount is also used for the Nepalese who have permanently migrated abroad. The businessmen who are in contact with hundi transactors open LC of fewer amounts and import more goods and pay less tax. Most of the amount remains outside of the tax limit. The illegal amounts are also used for criminal activities. The amounts are also used for smuggling gold. Similarly, international real states use the amounts as well. The transactions done through hundi are not seen in the government transactions. This has led to increasing informal economy and blocking the dollars that would otherwise be received in Nepal. Acharya (2076b) quotes an argument of former Secretary of Finance Rameshwor Khanal as follows.

> According to a study report of UN, among the least development countries, a total of 550 billion rupees has gone out of Nepal informally through hundi. The taxation is low for this kind of money. For example, while importing a good worth 100 dollars only 20-dollar bill is shown and remaining 80 dollars is sent through hundi. In this way, 550 billion rupees is sent to abroad through hundi (Acharya, 2076b; 7).

The Department of Revenue Investigation in Nepal had filed 54 cases in 2020/21 against 114 people for abducting foreign exchange and doing transactions through hundi with a claim amount of 494 billion rupees. Similarly, there were 47 cases against 226 people filed in the District Court in the year 2019/20 with the claim amount of 122.97 billion rupees (DRI, 2078 B.S.).

Reuter (2017) argues that the global capital outflow came from corruption and commercial crime. According to Meyer Dove and Mullard (2019), combating capital outflows is an important aspect of tackling corruption that it always threatens economic growth and development. In Nepal the attempts of controlling capital outflow have been ineffective. The Department of Money Laundering

Investigation in Nepal has not been enough able to stop capital outflow from Nepal.

Massa (2014) argues that capital outflows damage the economy of developing countries. These countries are losing huge amounts of money and wealth every year leading to the third world countries drowning into the vicious circle of corruption. Similarly, capital outflows are sent wealth and money overseas and it will reduce the elites' support for the country's development because less of the elites' wealth is dependent upon the domestic economy (Lain et al., 2017). The present situation of Nepal is similar to this. The capital outflow has been proved to be a major obstacle of development in Nepal.

Basically, capital outflows through hundi affect the development process in four ways. First, the foreign currencies are not received in Nepal. Second, hundi decreases revenue at custom office that would be collected if money is received legally. Third, it has been increasing informal and black economy in the country. Fourth, it has increased the risk of money laundering. As a result, the development process has been impacted. The illicit capital outflows from Nepal through hundi has also put negative impacts on economic growth and development of the country. So, illicit capital outflows as a serious challenge to the development and economic growth of underdeveloped countries like Nepal. Hundi, currency smuggling, and illegal financial activities played a critical role to illicit capital outflows in Nepal.

Conclusion

Illicit capital outflows pose significant challenges to the economic growth and development of underdeveloped and developing countries like Nepal. This study shows how a union of factors, including political instability, corruption, weak institutions, and technological advancements, facilitates the illicit capital outflows from the underdeveloped and developing countries to developed

countries. Historical instances from Nepal's past regimes and contemporary cases of illicit capital outflow explain the persistence and evolution of this issue.

The research underscores the dire consequences of illicit capital outflows, including revenue loss, hindrance to formal economic growth. Instances of currency smuggling, hundi operations, and involvement of financial institutions in illicit capital outflow further highlight the complexity and scope of underdevelopment.

Despite efforts by regulatory bodies, the challenge of curtailing illicit capital flows persists. This persistent problem continues to impede efforts toward economic progress and hampers the formalization of economies in underdeveloped and developing nations. Addressing this issue demands concerted efforts involving robust regulatory measures, international cooperation, and policy reforms aimed at curbing illegal financial activities and fostering transparent, accountable financial systems conducive to sustainable development.

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**Protecting Nepal's Biodiversity in the Context of Sustainable Development
Goal 15**

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Abstract

With high elevations and a variety of ecosystem classifications ranging from wetlands to alpine regions, Nepal is one of Earth's most ecologically diverse countries. However, with global trends of declining biodiversity, Nepal's ecological diversity is also at risk. The Sustainable Development Goals (SDGs) are a set of 17 global goals created in the hopes of developing our planet for the betterment of both people and the planet. SDG 15 – Life on Land focuses specifically on protecting the land we live on and the non-human world. Considering Nepal's high biodiversity, it is essential to protect biodiversity for both the Nepali people and the global community at large. Nepal has made a bold commitment to fulfilling SDG 15, including designating vast areas as protected areas and employing community-based conservation strategies and community-based approaches. The following paper is a narrative review of empirical-based literature focused on understanding the complex landscape of biodiversity in Nepal and the implications for achieving SDG 15.

Keywords: sustainable development, biodiversity, Nepal, community development, Canada

Protecting Nepal's Biodiversity in the Context of Sustainable Development Goal 15

Despite accounting for only 0.1% of the total global surface area, Nepal is rich in biodiversity. It holds around 3.2% of the world's known flora and 1.1% of the world's known fauna (Ministry of Forests and Soil Conservation, 2014). However, this biodiversity is declining due to anthropogenic, or human-induced, climate change and other human activity such as land exploitation and degradation, habitat loss due to agricultural pursuits and urbanization, invasive species, reductions in prey and illegal poaching (Bhattacharjee et al., 2017; Bird Conservation Nepal and Department of National Parks and Wildlife Conservation, 2012; Food and Agriculture Organization of the United Nations [FAO], 1998; Jnawali et al., 2011; Ministry of Forests and Soil Conservation 2014). According to a report titled, *The Status of Nepal's Mammals: The National Red List Series*, out of all known mammal species in Nepal, 23% are threatened with extinction. As climate change and human activity persist, biodiversity and ecosystem losses will continue to rise. Unfortunately, losses in biodiversity directly impact human life (Bhattacharjee et al., 2017; Habibullah et al., 2021), as many basic needs, such as water, food, and shelter, are reliant on thriving biodiversity and the health of our ecosystems (United Nations Development Program, n.d.).

The United Nation's 2030 Agenda outlines a set of 17 Sustainable Development Goals (SDGs) aimed at developing society at the country level to ensure the prosperity of both people and the planet (United Nations, n.d.). SDG 15 outlines society's need to protect both the natural world and biodiversity to guarantee the stability and longevity of ecosystems and ecosystem function. Nepal is one of the 193 countries that has agreed to achieve all 17 SDGs, including SDG 15 by 2030 (United Nations, n.d.; Sustainable Development Report, 2021). Nepal's SDG 15 targets are extensive and ambitious with 12 sub-targets discussing goals such as mobilizing resources to aid biodiversity efforts

and focusing on conserving biodiversity at both the national and international levels, suggesting that Nepal is highly committed to helping its struggling biodiversity (United Nations Nepal, n.d.). However, resolving biodiversity challenges in Nepal is complex. According to Sachs et al. (2023), Nepal's overall progress and fulfilment of the SDGs has scored 66.5 out of 100, and on the global stage ranks 99th out of 166 countries. Within the context of SDG 15, Sachs et al. (2023) determined Nepal's progress to be "stagnating" with major issues remaining to fulfilling its SDG 15 targets. Some of these challenges include political instability, climate change, gender and caste derived inequalities, and infrastructural challenges (Eckstein et al., 2017; Poudyal et al., 2019; Bhatt, 2022; Sachs et al., 2023).

Despite local and global dependence on Nepal's biodiversity, there is currently a lack of scholarly literature discussing its biodiversity in the context of SDG 15. The following paper is a narrative review of the empirical literature focused on summarizing the current state of biodiversity and SDG 15 in Nepal (Sukhera, 2022). This paper will first contextualize biodiversity into daily life in Nepal and greater Nepali society, then discuss Nepal's current solutions to declining biodiversity, examine the role of community development, summarize findings, and provide recommendations. This paper emerged from a class assignment from a 2022 Virtual Study Abroad Program to Nepal, facilitated by the University of Calgary (see Walsh et al., 2023). A related publication can be found in Buerkner and Walsh (2023).

Connecting Daily Life in Nepal to Sustainable Development Goal 15 - Life on Land

Biodiversity and life on land are important to human health and wellbeing, food security, freshwater, economic prosperity, culture, and spirituality (Chapin III et al., 2000; Secretariat of the Convention on Biological Diversity, 2010). Essentially, all aspects of human life and experience are related to the flourishing

of the environment because, as a species, our basic needs and resources come from the land. All human society, both past and present, have been built upon the foundation of the Earth's land, biodiversity, and resources. Nepal, as a country, is no different. The well-being of the Nepali people relies on the stability of the environment and the fulfilment of SDG 15. As noted, Nepal is a major region for biodiversity due to its varied climates and landscapes. However, the pressures of ecological loss could greatly detriment life in Nepal by making it difficult for Nepali people to access the resources they need to survive. Many Nepalese are already struggling to acquire their basic needs. For example, only 40% of people live in what can be considered safe housing, and around 25% of Nepal's population have access to safe drinking water (Nepal National Planning Commission, 2020). This challenge of meeting basic needs has been exacerbated by the COVID-19 pandemic (Karna, 2021). Nepal scored 46 out of 100 based on possible indicators of food security according to the Global Food Security Index (Nepal National Planning Commission, 2020). The challenge to meeting basic need are inequitable, Adhikari et al. (2021) for example, found that"wage labourers, indigenous people, and women from marginalized groups and regions already vulnerable in food security and malnutrition" have been most severely impacted by the pandemic (p. 1).

Many Nepalese people are dependent on the land for their economic livelihoods. Agriculture and ecotourism are two major industries in Nepal that generate wealth for many Nepali (Kaini, 2019). According to the FAO (n.d.), 66% of Nepal's population are involved in the agriculture sector. Similarly, ecotourism in Nepal is important for providing employment for rural communities in tourism and hospitality related fields while promoting the protection of their environments (KC, 2017). However, with climate change causing latitudinal and altitudinal shifts to ecosystems many areas previously suitable for diverse agriculture may be deemed unsuitable in coming decades (Chen et al., 2011). Additionally, many

species and ecosystem sub-types in ecotourism hotspots such as high alpine regions are on what Urban (2018), drawing on the work of Marris (2007), terms as the "escalator to extinction" (p. 11871). This situation occurs when species are at the limit of the possible altitudinal habitat and with no other habitat to adapt to, will likely go extinct (Bhattacharjee et al., 2017). According to a report by the Government of Nepal (2016), Nepal is one of the world's most vulnerable countries to climate change due to a combination of geographical and socio-economic factors. Increasing climate change will directly result in ecosystem and biodiversity degradation, leading to both agricultural and freshwater stress (Bhattacharjee et al., 2017). Overall, focusing on achieving SDG 15 in Nepal could prevent deep ecological, social, and economic issues while saving the lives of many species.

Situating Challenges to Biodiversity and the Fulfilment of SDG 15 into Greater Nepali Society

Solutions designed to address biodiversity-related threats must consider the greater socio-economic context of Nepal, especially its political instability and inequalities. In recent years, Nepal has experienced on-going and escalating political instability (Hossain, 2023; Shakya, 2024) which represents a major barrier to fulfilling SDG 15. As a result, progress on issues such as economic growth, poverty, inequality, and ecological protections has been stalled (Ranjan, 2023). Inequality impacts biodiversity loss because often women and those from marginalized castes are less likely to have accurate representation or decision-making power within community forestry committees or environmental leadership (Sapkota et al., 2018; Satyal et al., 2020). Gender and caste-based discrimination are two common forms of inequities in Nepal (Gupta et al., 2021; Subedi, 2011, 2016). Any proposed solutions to biodiversity-related threat should involve marginalized peoples in meaningful ways and work collaboratively with those who are most impacted by policies and are often excluded in decision-

making (Dahal et al., 2013). Unfortunately, there is a lack of scholarly literature analyzing the current relationship between biodiversity and the issues of political instability and inequality. Both issues have a clear impact on the state of biodiversity in Nepal and require further investigation.

How Nepal is Addressing Biodiversity Loss and SDG 15 – Understanding and Analyzing Nepal's Current Solutions

To achieve SDG 15, Nepal is primarily using protected areas. After the 1973 National Parks and Wildlife Conservation Act was passed, the Department of National Parks and Wildlife Conservation was created to begin constructing and managing protected areas in Nepal (Heinen & Kattel, 1992). Protected areas are vital for species survival as they provide habitat that includes ecosystem services and functions like the entire watershed and soil processes. Protected areas cover just over 23.4% of Nepal's surface area (Nepal Department of National Parks and Wildlife Conservation, n.d.). This is significant because having a high percentage of protected area coverage ensures species have enough room to exist and flourish. Since the late 19th century, with the development of the Department of National Parks and Wildlife Conservation, there has been a growing number of protected areas, which now includes 12 National Parks, six Conservation Areas, a single Wildlife Reserve, and a single hunting reserve, along with 13 buffer zones (Department of National Parks and Wildlife Conservation, n.d).

Protected areas in Nepal are not without challenges. Historically, the creation of protected areas has been attributed to the displacement of many communities or has interfered with the daily lives of non-displaced communities (Bajracharya et al., 2006). Likewise, protected areas can be points of conflict for local communities because many interfere with local people's ability to freely utilize the land for resource and cultural needs (Bhusal, 2012). Buffer zones have been employed as a way to combat these issues for many Nepali communities situated near protected areas while involving them in conservation efforts

(Lamichhane et al., 2019). Buffer zones are areas of land that surround existing protected areas and act to create a neutral zone for wildlife and people and as such are key to decreasing the impact of human activity on protected areas (The Nature Conservancy, 2015). With that said, not all villages are satisfied with how the buffer zones in their locations are working. Lamichhane et al. (2019) found that certain communities near the Chitwan National Park in Nepal agreed with wildlife conservation but were dissatisfied with the buffer zone in which they resided due to increased human-wildlife conflict. It is also unclear how 'protective' Nepal's protected areas are. For example, Bhattacharjee et al. (2017) identified several related challenges included a lack of data monitoring for individual species, the negative impact humans may be having on the parks, and effectiveness of the protected areas with a shifting climate. Additionally, it is ambiguous as to how important conservation factors like habitat fragmentation and lack of habitat connectivity due to structures like roads and trails are impacting species national parks (Saura et al., 2018). Of concern, specific information on habitat fragmentation and connectivity in Nepal is lacking. Further, although ecosystem types are dispersed across Nepal, little coverage in the Middle Mountain physiographic region is available specifically and how climatic-related biodiversity loss within the Middle Mountain areas is being addressed. This suggests that additional data collection and monitoring of protected areas, particularly the Middle Mountain areas and key species in Nepal, are warranted.

Ecotourism is another mechanism that Nepal is using to protect natural areas. Ecotourism is a form of tourism that emphasizes low environmental impact travel in a way that benefits local communities (KC, 2017). Generally, ecotourism is seen as a favourable form of biodiversity conservation for many Nepalese communities due to an increased standard of living from economic gain (Metha & Kellert, 1998), as many people in the communities obtain employment as park managers or tour guides or as vendors selling their art and crafts (Acott et al.,

1998). For tourists, ecotourism can also prompt them to care about biodiversity in Nepal and potentially feel a sense of obligation to protect it (Acott et al., 1998). However, ecotourism is also associated with several negative aspects. Ecotourism can be problematic for species as loss of habitat connectivity and habitat fragmentation can occur due to the need to build structures like roads and hotels to accommodate visitors (Diamantis, 1999). It can also increase the likelihood of habitat degradation due to overused tracks or frequent human occupation in key wildlife areas. Ecotourism can also negatively impact daily life and the cultures of communities near the protected areas due to routine shifts to accommodate tourists and excessive exposure to global culture (Yogi, 2010). Moreover, Yogi (2010) indicated that Nepal struggles to implement effective ecotourism due to a lack of commitment to governmental policy and issues incorporating conservation and development into long-term planning. However, it remains unclear as to how the Nepal government and local communities plan to address the problems associated with ecotourism (KC, 2017). Also, further research needs to occur to better understand the entire impact of ecotourism and to inform future ecotourism policies and initiatives.

Community-based conservation (CBC) is another tool that Nepal is using to try to reduce environmental degradation and biodiversity loss (Bajracharya et al., 2006). CBC is a form of conservation whereby the community is heavily involved in the creation of policies and programs to promote conservation (Berkes, 2004). Ultimately the goal of CBC is to develop a form of conservation that works with the community with a focus on long-term conservation. Bajracharya et al. (2006) interviewed 114 respondents in the Annapurna Conservation Area in Nepal to understand CBC efforts and found that the conservation efforts had both positives and negatives. Many people in local communities near the conservation area reported improved socio-economic benefits such as better infrastructure, health, and resource access, while a minority

of respondents indicated an increase in crop damage from wildlife and subsequent economic losses (Bajracharya et al., 2006). Despite the noted challenges, the authors concluded that CBC was an effective form of conservation. Interviews of 21 people residing in buffer zones in the Sagarmatha National Park found positive support for the buffer zones, attributed to improvements to local livelihood and the preservation and promotion of culture (Silwal et al., 2022).

The Role of Community Development

Community development can be defined as the action that individuals or groups take to create the changes they want to see in their communities (Smart, 2017). Within the context of community development, Nepal has much development to experience as a society before everyone is uplifted. Unfortunately, ecological degradation and loss may undermine many community development projects because as humans our societies rely on a stable environment. Achieving SDG 15 is then related to community development because the preservation of our ecosystems allows for the flourishing of communities and opens space for community development. Although community development is still possible in an ecologically degraded world, expansive community development is more difficult in a degraded world as communities may not have the necessary resources to implement effective practices (Cannan, 2000). Similarly, lack of action toward fulfilling SDG 15 could push many Nepali into more unstable social circumstances, potentially requiring greater and more complex community development (Roe, 2019).

There are some ways that Nepal can begin to strengthen community development to help SDG 15. Part of community development in the context of Nepal and SDG 15 could involve increasing efforts toward self-determination and allowing communities in key biodiverse regions to have more autonomy in protecting land in their areas (Smart, 2017). This could be achieved through further supporting CBC efforts in Nepal and potentially expanding community

conservation projects. Ideas related to community development like empowerment and action could also be incorporated (Scottish Community Development Centre, n.d.) for communities to come together and organize themselves to take meaningful action to protect local key species and biodiversity. In essence, communities in Nepal have the right to dwell on their land and tend to it, and community development practices can help Nepalis to effectively practice this.

With the recognition that environmental problems also have a social angle social workers are increasingly including the "attainment of environmental justice and sustainability as part of their social interventions" (Papadimitriou, 2020, p. 139). Termed, green social work, this may prove a promising approach in moving forward (Belchior Rocha, 2018; Cannan, 2000). Understanding this relationship must be viewed as a priority if solutions are to be truly sustainable in the long term.

Conclusion

The following paper has summarized and connected the current existing literature on the state of biodiversity in Nepal. Based on the breadth of literature reviewed in this paper, it is clear Nepal's biodiversity is at risk. Despite the importance of Nepal's biodiversity on a global scale, it is unclear if many of the solutions for protecting Life on Land are succeeding in protecting individual organisms and within the context of the greater Nepali society (Bhattacharjee et al., 2017). Nepal's SDG 15 goals are promising and have been well designed to improve the state of biodiversity through focusing on enhancing conservation and promoting community involvement. However, as of 2023, current actions are falling short of SDG 15 commitments (Sachs et al., 2023). Future studies focused on improving quantitative data collection about key areas and species, the effectiveness of Nepal's current protected areas, and integrated understanding of Nepali issues like political instability would help to strengthen current solutions.

Additionally, expanding solutions to include integrated CBC methods and community development practices, with the insights and decision-making engagement of those most impacted, could help improve biodiversity understanding and outcomes. Fulfilling SDG 15 has the potential to aid in reconstructing Nepal into a nation invested in both its people and biodiversity. Although the current global diversity is on the precipice of collapse, there is still hope for Nepal's biodiversity. Especially if the commitments outlined in Nepal's SDG 15 goals and targets are achieved (United Nations Nepal, n.d.).

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Polyandry Marriage Pattern in Highland People of Nepal

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Abstract

Polyandry is a pattern of marriage in which a woman has more than one husband. It has been a common practice of marriage around the world since the historical period. There have been various forms of polyandry in Asia, Africa, Europe, Latin America, and America (snowbird of paradise, 2024). Among them, fraternal polyandry is common in most parts of the world. The polyandry system has also been common in most parts of Nepal in various forms. This article describes the present practice and situation of polyandry in the world as well as in the highland region of Nepal. This research is concerned with the study of the practice of polyandry in the upper Mustang of Nepal. For this research, the primary and secondary data are collected from the field and secondary sources like the Rural Municipality chairperson and local people for the case study. The major findings are that polyandry is prevalent in high hill and Himalayan regions of Nepal. It is arranged by the parents of girls or boys due to economic, social, biological, and cultural factors in the Himalayan region of Nepal.

Keywords: polyandry, fraternal polyandry, primary husband, successional polyandry, Upper Mustang

Polyandry Marriage Pattern in Highland People of Nepal

Polyandry is a form of marriage practice in which a woman possesses several husbands. Most authors mentioned it as a form of marriage developed from group marriage. The Encyclopedia Britannica (n.d.) mentions that polyandry is a marriage pattern in which a woman has two or more men at a time (Britannica, T. Editors of Encyclopedia (2018, February 23)). The term polyandry is derived from the merger of the Greek words *polys* and *anēr or Andros*which means many and man. Except for two doubtful examples (Khasias and Saporogian Cossacks), polyandry always assumes the fraternal marriage form; that is to say, the husbands of the woman are brothers (Deniker, 1900). Anthropologists and social science researchers give various definitions of polyandry. Cassidy and Lee (1989) define polyandry as the concurrent marriage of one woman to two or more men. Traditionally, this form of marriage was arranged by parents, with children, particularly females, having little or no say. This practice is changing somewhat nowadays, but it is still unusual for children to marry without their parents' consent (Goldstein, 1987).

In the Himalayan region of Nepal, polyandry marriage is arranged by the parents of girls or boys due to economic, social, biological, and cultural reasons. This article explores the various aspects of polyandry marriage in the world as well as in Nepal's Himalayan regions mainly in the upper Mustang. Polygamy is practiced in many parts of the country. In some districts of Nepal like Jumla, Humla, Dolpa, Lamjung, Mustang, Gorkha and Manang, polygamy is still practiced instead of polygamy, i.e. it is customary for a woman to have two or more husbands at the same time. In the news item titled 'Polygamy still prevails in Mustang: common brother of brothers', it was claimed that such culture still exists in Chhoser, Chhonhup, Lomanthang, Charang, Surkhang, Ghami, Muktinath, Kagbeni, Jhong and other VDCs of the district. Kantipur Daily also wrote in its issue on March 3, 2070, 'Why be ashamed to accept culture?' The headline was

"Religion, Wisdom and Chanorbu Lama, a resident of Bargaun, Humla."
Annapurna Post pointed out the documentary 'Ko Husband' based on polygamy in
some villages including Lamjung, Gorkha, Mustang, Manang, Humla, Jumla,
Dolpa and Taplejung. The BBC also recently reported that the family of Champa
Singh Lama, who arrived in Humla from Fang Tungar in Tibet on January 16,
2022, had been practicing polygamy for 17 generations. Such news from time to
time confirms that polygamy is still practiced in Nepal (Sthapit, 2022). Despite
the historical practices of polyandry, a neglected number of studies have been
carried out in the Nepali context. Hence, this paper is to overview the polyandry
marriage patterns in the world and analyze the contemporary situation of
polyandry marriage in the highland people of the Karnali province of Nepal.

Method and Sources of Data

The above-mentioned objective, analytical, and descriptive methods are to
be applied to this research. The data used in the study is both qualitative and
quantitative. The qualitative data are collected from the field observation and
group discussion with senior citizens who are familiar with polyandry marriage.
Three short case studies are collected from the field for the justification of
polyandry marriage. The quantitative data are collected from secondary sources
like the National Population Census of Nepal, reports related to the topic, articles,
government documents, and other organization/individual research. Both the
qualitative and quantitative data are triangulated for their reliability.

Theorizing of Polyandry

There are several theories which speak on the practice of polyandry in
anthropology. Westermarck (1926), a leading figure in Anthropology, studied
various aspects and determinants of polyandry around the globe. He proposed a
number of determinants for polyandry throughout exceptional styles
of societies, which include skewed intercourse ratios with males outnumbering
females, aid limitations, geographical circumscription, and prolonged absences of

husbands from home. Similarly, Starkweather and Hames (2012) stated that there are a number of anthropological theories for polyandry marriage like the Mono-marital Principle, Division of Labor and Low Productivity, Skewed Sex Ratio, Male Absenteeism, and the Father Effect theory. Likewise, the kin-selection theory of sociobiology explains the various aspects of fraternal polyandry. This theory also has developed different hypotheses about the polyandry marriage practice. A hypothesis is that fraternal polyandry enhances fitness because of the differential survival of offspring in such unions due to the greater parental investment made possible by multiple brothers supporting a wife and her offspring (Beall & Goldstein, 1981).

Another hypothesis is that polyandrous women have offspring that are half-siblings rather than full siblings. Fraternal polyandry seems an exception since each of the several brothers sexually sharing a single wife substantially lowers his number of mating and his chance to fertilize a female and produce offspring (Beall & Goldstein, 1981). Among these theories and hypotheses, different disciplines like biology, socio-biology, sociology, anthropology, economics, and psychology have several theories of polyandry. This article has applied the socio-biological theory of kin-selection and division of labor and low productivity in the highland people of Nepal.

Polyandry Marriage around the Globe

Polyandry marriage practices were more common in the past in many cultures and tribal groups of the world. It was widespread in Tibet before the Chinese interference and is still predominant in the rural areas of Tibet (Yangkyi, 2023) and many ethnic Tibetan communities in Nepal and India. Polyandry is rare around the world now, but it is also noted elsewhere, including in communities in Nigeria and northern Cameroon, in many parts of India, and among many New World hunter-gatherers, including the Inuit and the Paiute, Shoshone, Aceh, and Yanomamo (Haddix, 1999). But in the modern period, it is uncommon and legally

banned in most of the countries. According to Tiwari (2008), polyandry was an uncommon practice before European colonialism. A recent study of tribal societies in the modern globe found that 83.39% of them practice polygyny, 16.14% practice monogamy, and only 0.47% practice polyandry (Heaphy, 2017). In almost all cases, the polyandry practiced is fraternal, where a group of brothers share a wife and it was believed to be the norm and values historically (Heaphy, 2017). The different forms of polyandry marriage around the world in the contemporary period are given in the table below.

Table 1

Types of Polyandry in the World

Continents	Countries or localities
Asia	Paharis of North India, the minority of people in Kinnaur &Himachal, Toda tribe of Nilgiris, the Najanad Vellala of Travancore, Nair & Palians people of South India; Ethnic groups of Monpa, Tamang, Qiang, Sherpa, Bhote, Newbie and Lhoba people of Nepal, Han and Hui people of China; Gilyaks people of northeast Asia, Mongolian People; Bang Chan people of Thailand; Panans of Southeast Asia; Sakai people of Indonesia; Semang people of Malaysia; Subanu people
South America	Polyandry existed in the South American tribe Bororo, Tupi-Kawahiband up to 70 percent of Amazonian cultures may have believed in the principle of multiple paternity. Other people are: Ache, Aymara, Bari, Canela, Cashinahua, Cubeo, Guaja, Kulina, Mehinaku, Panoan Matis, Surui, Yanomamo, and Zo'e.
North America	Aleuts of Alaska, Sugpiaq of Alaska, Blackfoot people of northeast USA, Cherokee people of USA, Copper Eskimos of Canada, Iglulik of northern Canada, Innu people of Quebec and

	northern Labrador, Inupiaq people of Canada, Mackenzie River Eskimo of Canada, Paviotso-Pawnee-Pomo-Point white Eskimo of USA, Polar Eskimo, Shoshoni of Southeastern California, Tikerarmiut people, Tlinght people, Utes of Utah, and Yokota.
Oceania Australia	Chuuk people, Hawaiians, Lamotrek Atoll, and Malekula people Dieri people
Africa	!Kung people of Africa, Bahuma people of Uganda and Congo, Canarians people of northwest Africa, Irigwe people of central Nigeria, Lele people of Nigeria, Massai people of Kenya and Tanzania.

Source: Abiola, 2022; Akinyoade, 2019; & https://answersafrica.com/

Table 1 indicates that most of the ethnic communities of the world have been practicing polyandry because of their cultural norms and values, hidden biological interests, geographical structure, economic conditions, and low productivity of the land. There are various forms of polyandry in the contemporary world. Anthropologist Goldstein (1976) mentioned that polyandry is the least well-understood form of marital practice. Starkweather and Hames (2012) classified classical and non-classical types of polyandry (Benedict, 2017). Starkweather and Hames (2016) found 53 nonclassical societies including North America and South America have polyandry in formal or informal forms (cited from Encyclopedia Britannica). Levine (1980) and Peters (1982) stated that there are six types of polyandry in the contemporary world, they are fraternal, associated, polykoity (described by Levine 1980), secondary, walking marriage (described by Peters 1982), and familial polyandry (Benedict, 2017). But Levine & Sangree (1980) and others define the following basic types of polyandry.

Fraternal or Adelphic Polyandry

According to Levine and Sangree (1980), it is the classic form of polyandry in which co-resident brothers jointly marry a single woman in only one

wedding and later form a single household. It is simple to understand that two, three, four, or more brothers jointly take a wife, who leaves her parental home and go to live with them. Doda of India, the Aham of Africa, and the Shihalida of Srilanka practice this type of marriage system. Fraternal polyandry is common in Nepal too especially in Lomthang or upper Mustang of Mustang District, Samagaon, Chhekampar village (Tsum valley) of Gorkha District, and Kimathanka village of Sankhuwasabha District (CSVFN, n.d.). There are two types of polyandry practice. If one woman is married by brothers of the same family at the same time, it is called fraternal polyandry. Whereas if the woman is married by more men, but not brothers, at the same time, it is called non-fraternal polyandry (CSVSN, n.d). Mostly the fraternal polyandry practice is widespread in the Himalayan region of Nepal.

Associated Polyandry

It is a system of marriage in which a woman marries two men who may or may not be brothers, though marrying brothers is not uncommon. This type of marriage begins monogamously and additional husbands are incorporated into the pre-existing union later on (Levine & Sangree, 1980). In this practice, generally, the first husband will act as the primary husband and the husbands who entered the union later will act as the secondary husband. This marriage pattern is very flexible (Levine & Sangree, 1980) and secondary husbands will often leave the marriage once they acquire a wife of their own (Peters & Hunt, 1975; Steward, 1936).

Nayar Polyandry

This type of polyandry is unique to the Nayar of southwest India. The nature of the system is that just as a woman is involved in several marital relationships with a number of men, a man is married to several women. Nayar women and their husbands did not traditionally live together in the same

household. The purpose of each union was to legitimize children born to the wife (Levine & Sangree, 1980).

Successional Polyandry

It is a practice of marriage in which a woman receives several husbands simultaneously and a woman acquires one husband after another in sequence. These men may or may not be related and may or may not incorporate a hierarchical system where one husband is considered primary and allotted certain rights and privileges over the others, such as biologically fathering a child (Anisulowo, 2022).

Secondary Marriage

This practice of marriage has been found only in Northern Nigeria and Northern Cameroon. It seems to be a combination of polyandry and polygyny, as women can get married and cohabitate with several men without having to divorce simultaneously and the same men are married to several women simultaneously (Zeitzen 2008 cited in Naksomboon & Mondain, 2013).

Polyandry in Nepal

Generally, there are two types of marriage patterns polygamy and monogamy in Nepal. However, according to the Muluki Civil Code 2074 BS and Muluki Criminal Code 2074 BS, the polygamy marriage practice is strictly prohibited in Nepal. However, research shows that not only polygyny, but polyandry is also still practiced in some villages of Nepal including Lamjung, Gorkha, Mustang, Manang, Humla, Jumla, Dolpa, and Taplejung. It is the practice of accepting the wife brought by the eldest son of the family as his wife. Even though he is accepted as his wife, he still refers to her as his brother-in-law. It is customary for other brothers to become grooms at the eldest son's wedding (Poudyal, 2020). This type of marriage practice is commonly called Fraternal Polyandry and it is also called adelphic polyandry. In this form of marriage system, the eldest brother is normally leading in terms of authority and

responsibility to manage the household, but all the brothers share the work and participate as sexual partners. It is one of the forms of a matriarchal family system in which the wife is powerful and has treated all the brothers equally in sexual and household activities. Concern over the delicate question of which children are fathered by which brother falls on the wife alone. In polyandrous families, the woman often cannot declare which of her husbands fathered which children. She may or may not say who the father is because she does not wish to create conflict in the family; she may also be unsure who the biological father is. Under polyandry, there are two sets of asymmetric relationships in Nepal:

The Asymmetric Relationship Between Husbands

Under the brotherly polyandry system in Nepal, the authority between the brothers is usually exercised by the elder brother, and the younger brothers have to follow. When these younger brothers want to actively change their status, the relationship between the brothers is often easy to change but it gets anxious and even struggles among the brothers.

Asymmetric Relationship Between Wife and Husband

It is common for men and women to have a large age difference, in polyandry. This is mainly because the marriage started when the eldest brother was about to get married, and it is not uncommon for the brothers to have a big age gap, which will lead to a wife. The age gap with the youngest brother is also often very large. Studies have found that the culture of polyandry originated in the Tibetan region and spread to some parts of Nepal and India including the Mustang, Himachal, Nilgiri, and other regions of that areas. Polyandry marriage has two controversial ideas: in favor and against it. It is said that this type of marriage system is one of the best ways to maintain limited parental property rights within the same clan and maintain the population of the area. Indirectly has made a great contribution to the protection of scarce natural resources in the region (https://inf.news).

However, it is controversial and has been criticized in human rights as well as biological perspectives.

The study shows that polyandry marriage is still common in most of the district of Karnali region. Out of the eight local levels of Dolpa, some families of three municipalities like Dolpo Buddha, Shey Foksundo, and Charkatansong are still practicing polyandry (Budha, 2019). Similarly, such type of marriage practices are still present in Chhoser, Chhonhup, Lomanthang, Charang, Surkhang, Ghami, Muktinath, Kagweni, Jhong, and other places of Mustang district (Gurung, 2012; Pahilopost, 2015). According to Lama (2020), the origin of this practice is linked to poverty. He cited the statement forwarded by the chairperson of Simikot Municipality, Padam Lama, and mentioned that there is a belief in the society that when all the brothers live together, there is no need to share, the population is controlled and the burden of household chores is reduced. This practice is still prevalent in Buraunse, Torpa, Limatang, Bargaun, Hutik, Langdu, Gumba, Talki and Dojam in wards 1, 3, and 4 of Namkha municipality and Simkot municipality. Chairperson Lama claimed that polyandry is still inpractice in about 30 percent of the houses in these Municipalities. Deputy Speaker of Karnali Pradesh Sabha Mrs. Puspa Gharti mentioned that all brothers who practice polyandry can earn a living from ancestral wealth. This is called 'dong khane'. To follow the practice of polygamy is to eat at home by continuing the tradition. Eating the dong of old age is considered to be a matter of honor and tradition. So, for the happiness of the society and the family, the sons resort to polyandry (Gharti, 2019). Nowadays, young people of this region do not want to practice it but due to the lack of education and fear of society, they have been following it. Polyandry was very common in the past, but with the development of modernization, the marriage system is gradually disappearing and is on the verge of extinction.

The American social anthropologist Melvyn C. Goldstein (1987), pointed out in 1981 that to ensure the integrity of family resources, 56% of the richer or higher-status peasant families in Limizeng Village choose fraternal polyandry, and the lower income or poorer class (when a generation has two or more brothers) also have 33% choose this kind of marriage system (Goldstein, 1987). According to a survey, in 1998, 93% (28) of the settlements in the Upper Mustang area adapted to the practice of polyandry, and a total of 12.73% of families adapted to the practice of polyandry.to 4.9% in 2005/2008, and the number has declined. (Gurung, 2013). One widely accepted view treats polyandry as a sensitive cultural mechanism for adjusting population levels to changes in resource availability and economic productivity. In this view, polyandry is to be regarded as an adaptive strategy, not as a cultural ideal, and monogamy is generally seen, even by the participants themselves, as the more personally satisfying form of marriage. Another argument associates polyandry with relatively high status for women. In this view polyandry is simplistically conceived of as the converse of polygyny: just as the acceptability of multiple wives suggests the relatively high status of males, polyandry is taken to suggest the opposite, the relatively high status of females (Schuler, 1987).

Polyandry Marriage Practice in the Himalayan Region of Nepal

Even today polyandry continues to be practiced in the two most well-known places: The Tibetan Plateau area of India, Nepal, and Tibet of China; and the Marquesas Islands of the South Pacific area. In this region, each of the brothers cohabits in turn with their common wife, a certain period being agreed upon. The ancient Arabs had practiced it as a temporary marriage and it was common in Persia and the Toda people of India. Polyandry has been practiced by several peoples living on the borders of Tibet like Miris, Dophlas, Abors, Khasias, Ladakhis, etc. (Deniker, 1901). Most of the researchers believed that it exists in this region due to the scarcity of productive land, the scarcity of women, and the

support of the pastoral life of these people. The practice of polyandry is believed to stem from the tale of Mahabharata, the ancient Hindu epic. In the text, one of the cornerstones of Indian culture, Draupadi, daughter of the King of Drupada was married to five brothers Paanch Pandava. It is not legal, but it is the most common form - whereby women in polyandrous relationships marry more than one man from the same family - it is permitted. It tends to be practiced in male-dominated villages, which still follow primitive rituals and customs. Brothers who refuse the union are often treated as outcasts (Williams, 2013). Hence, the Tibetans, Sherpas, Ladakhis, Mustangese, and other Himalayan peoples in remote areas still practice polyandry, a custom in which a woman can have two or more husbands.

Case Study 1: Prevalence of Polyandry

According to P. Lama, a local of Namkha-5, Muchu, Humla, six brothers have one wife. Lama said that when he had to leave the house after marrying a single man, all the brothers got married to a woman. It is customary for all the brothers to accept the brother-in-law as their wife only after getting married to the eldest brother of the family. Similarly, Ward Chairperson of Simkot Gaonpalika-4 Chhabichandra Lama said that the practice of polygamy could not be eradicated in the Lama settlement of Humla due to social norms linked with economics (P. Lama, personal communication, October 10, 2023). Ward chairperson Lama, who got married alone after rebelling at home, says that the practice of polygamy still prevails in his own village Burause, which is adjoining to the district headquarters Simkot. According to Chairman Lama, the problem of polygamy is still the same.

According to PB Lama, the local leader of Namkha Gaonpalika-1, polygamy is practiced in all the wards of Namkha Gaonpalika. As it has been a tradition since the time of old grandparents, it is not easy to break it. Due to the deep-rooted rules, it is not easy to bring under the purview of law. According to

ward chairperson Lama, polygamy is still practiced in about 70 percent of Ghurdhuri in Namkha village municipality.

Case Study 2: Polyandry in Mustang

Many people may not believe that polygamy is still practiced in the Himalayan area of Mustang. However, such culture is still present in Chhoser, Chhonhup, Lomanthang, Charang, Surkhang, Ghami, Muktinath, Kagweni, Jhong and other rural municipalities of the district. A. Gurung of Choser said that the brothers of a family in Mustang have a tradition of mass marriage with a woman since time immemorial so there would be no need to distribute property as there would be less food production in the Himalayan region. According to him, after all the brothers are together, there will be no division of property, grief and workload will be less and there will be no need to share ancestral property (A. Gurung, personal communication, October 8, 2023). "Even though the outside world interprets the marriage ritual here as a practice, in our view, it is not a problem but a recognized social practice," (S. Bhattachan, personal communication, October 8, 2023) a Mustang intellectual. He said that of all the siblings in the same family, Myla's son Lama lives, but other siblings have to accept the eldest brother's wife as their wife. "Those who collectively do not accept the same wife of the brothers do not get the ancestral property of the parents," Bhattachan added. "In some cases, the wife is twice as old as the husband." (S. Bhattachan, personal communication, October 8, 2023, and https://pahilopost-com.translate.goog).

Case Study 3: An Event of Polyandry in Humla

C. Lama of Limatang has left the village due to polyandry practice and has come to the district headquarters. He said that after living together for about seven years, he quarreled with his brothers. "I have left my son with my brother-in-law and come here (Simkot Bazaar). I have got another marriage," he said. "That's why I didn't get a share of the house and a son" (C. Lama, personal

communication, October 8, 2023). Such domestic disputes do not reach the judiciary. Simkot village chairman P. Lama says that, it is kept secret in the village. According to him, the origin of this practice is linked to poverty. "There is a belief in the society that when all the brothers live together, there is no need to share, the population is controlled and the burden of household chores is reduced," (P. Lama, personal communication, October 8, 2023). This practice is still prevalent in Buraunse, Torpa, Limatang, Bargaun, Hutik, Langdu, Gumba, Talki and Dojam in wards 1, 3, and 4 of Namkha municipality and Simkot municipality. About 30 percent of the houses in these villages have polygamy, said Chairman Lama. Along with education and development infrastructure for a decade and a half, some families have given up polygamy. Many of the displaced families have abandoned the practice (Lama, 2020). These three cases as mentioned above studies proved that the High Himalayan people have practiced polyandry since the matriarchal period. It is still common in Mustang, Humla, and other parts of the Karnali province of Nepal.

Conclusion

Polyandry is rarely found in the world however it is still practiced in some communities of different parts of the globe. Polyandry has been practiced by several peoples living on the borders of Tibet like Miris, Dophlas, Abors, Khasias, and Ladakh. Fraternal polyandry is practiced in high-hill areas of Nepal such as in Jumla, Humla, Dolpa, Lamjung, Mustang, Gorkha Manang, and Taplejung. There are various reasons for polyandry such as sensitive cultural mechanisms for adjusting population levels to changes in resource availability and economic productivity, poverty, no division of property, no need to share ancestral property, and sharing of grief and workload. There is a relatively high status of women in polyandry. It is not easy to break such practices due to the social norms and traditional practices.

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Acting Responsibly in Nepal: Some Anthropological Remarks on Women's Experience of Pelvic Organ Prolapse

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Abstract

Often, it is taken for granted that individuals 'act responsibly' in their health-related behaviour. However, while minutely observing people's behaviours and practices that directly and indirectly affect their health and well-being, it appears that such seemingly inherent ideas and practices do not always remain valid, and we can see individuals performing at par below rationality. In this article, I examine whether this notion is an innate quality of human beings and intrinsic to individuals or is it a socially constructed phenomenon? If so, this paper interrogates and highlights, in what kinds of cultural and social contexts individuals cannot act responsibly in a way that eventually promotes their health and well-being or reduces their vulnerability to problematic health situations.This paper is based on some ethnographic information generated through multiple research studies conducted in different periods in Nepal, aiming to understand women's lived experiences of and the health care provisions regarding uterine prolapse in Nepal. Various forms of interactions and observations techniques were employed to generate information for these studies. Thematic analysis has been employed in the process of navigating through the qualitative information acquired through these studies.

Keywords: acting responsibly, medical anthropology, pelvic organ prolapse, ignorance, Nepal

Acting Responsibly in Nepal: Some Anthropological Remarks on Women's Experience of Pelvic Organ Prolapse

The notion of health and responsibility has existed in human societies for centuries, in different forms and being addressed in various terms and ways, probably from the beginning of human history. It can be considered as among the preliminary steps for the survival of human beings. In fact, multiple components of cultural whole are meant to orient and regulate human behaviours, ideas, and practices, eventually, having crucial implications for the health and well-being of the individuals and the whole society. Human beings create their cultural milieu in their efforts to fulfill their basic needs such as nutrition, reproduction, bodily comfort, safety, relaxation, movement, and growth (Malinowski, 1988).

The cultural ways to meet these needs can be considered largely determined by the apprehension of maintaining good health, hygiene, and well-being motto of the respective community of people. However, analyzing the ideas and practices of hygiene in Europe, Elias (1978) critically stated that it is merely a fallacy to take that the changes in conduct such as body care, sleeping, drinking, and eating in the Middle Ages, mainly during 1500 to 1900, were driven by hygienic reasons. He firmly stated that it was only afterwards that such alterations were euphemized as hygienically motivated behaviours with the logic of medical knowledge.

Likewise, whether maintaining health is a responsibility of individuals or that of the collectivities including state and societal provisions has been a matter of debate in different societies. Such ideas and practices have passed through various upheavals. The obligation and the capability to shape one's health even during old age have become part of the scholarly debate and talk in the media and the people's concerns in their everyday conversations (Katz, 2000). With the development of the notion of the welfare state, the general understanding and

practices gradually evolved to embrace health and well-being provisions as part of the state machinery.

In modern societies, targeting the individuals, health education and information are disseminated directly through various means of communication, restrictions, rules and regulations- do not drink excessive alcohol, exercise regularly, consume less oily food, do not smoke, do not use drugs, do not involve in unhealthy sexual behaviours (signboards and leaflets on HIV/AIDS awareness raising), smoking prohibitions in the public space and so on. Such communications are meant to foster healthy behaviours or make people act responsibly to avoid risky behaviours that have detrimental effects on their health. The involvement of the state, public health experts, and medics, among others, can be seen in such promotional activities through various means of communication such as print media, social media, and audio/visual media.

The inability to maintain health is taken as the absence of responsibility of individuals to uphold health and hygiene. The 20th Century began and ended with many health policymakers and opinion shapers in the US blaming individuals for their ill health (Leichter, 2003). That is why it is believed that "most illness and premature death are caused by human habits of living that people choose for themselves" (Iglehart, 1990, p.4). The absence of prudent but avoidable lifestyle choices was taken as the main cause of Americans' morbidity and premature mortality. In case of failure of the health of any individual, the person is made responsible for their health and hence liable as reckless even in old age (Featherstone, 1991).

Minkler (1999) has weighed and examined the contested meaning of "personal responsibility for health" in a recent historical context, on whether the main responsibility should reside with the individual for his or her health behaviour. He comes up with a more balanced approach that puts emphasis on

individual responsibility while fully acknowledging the larger picture of social obligation. Research taken forward with the inspiration of Foucauldian ideas focuses on individual responsibility for one's health as a method of discipline and bio-power (Jolanki, 2008; Minkler, 1999) enacted over the populace. Individual's choices in health ideas and behaviours are not merely based on their free will but rather several factors that limit individual influence.

Nepal has a separate entity, The National Health Education, Information and Communication Center (NHEICC) under the Ministry of Health and Population, Nepal, established in 1993, to look after health education and promotion (MoHP, 2024). It aims to make people aware of health education and raise awareness in different critical areas including nutrition, habits, physical activities, weight and stress management and other dimensions of preventive care. All these efforts also imply that it is the responsibility of the individuals and families to take care of their health and well-being.

Scholarly debates are going on globally about whose responsibility it is to ensure people's health. However, I have realized that this issue has not acquired adequate attention from the scholarly community, including anthropologists and other social scientists, in Nepal. For the analytical convenience of the transformation in different notions and aspects of health/illness, methods of prevention and process of remedies, the health care system in Nepal could grossly be divided into three different phases. Considering the social nature of factors affecting the healthcare domain, I have taken some broadly accepted and explicit demarcation points for the division of different epochs. Nevertheless, it does not mean that overlapping ideas and practices are absent in these phases. This kind of categorization simply helps to understand the diverse dimensions and notions which were dominant in these stages.

The traditional phase can be considered as lasting up to 1950 when traditional and indigenous healing methods were in dominant forms. Ayurveda and various forms of shamanism among different caste and ethnic groups were in practice in this phase. The presence of biomedicine, which entered Nepal during the first half of the 19th century (Streefland, 1985), was very thin and limited only in Kathmandu and other urban areas. In this period, primarily the individuals and families were responsible for the maintenance of their health. The end of World War II opened the door for modernity in different parts of the world. Among others, medical technologies and Western healthcare ideas and practices were expanded in this period during this phase as part of the larger developmental package. Nepal also witnessed the expansion of biomedicine in this era in the form of national development and modernity (Dahal, 2022). State involvement in public health promotion, planned health promotion, and taking health as a development program are some of the features of this period.

Later on, the wider realization of community participation in the development sectors was also realized in the Nepali health care domain as well to bring development closer to the people. With the neoliberal influence in development sectors and limiting state involvement in the health sectors, private sector involvement flourished in the Nepali health care industry in the post-1990 liberal democratic environment. Health policies and practices have witnessed several implications and direct influence of upheavals in the national political landscape. Along with the political departure through the promulgation of a federal republican constitution, free basic health services have been explicitly enshrined as health rights in the new constitution of Nepal (The Constitution of Nepal, 2015).

Research Questions and Objectives

The general inquisitive query that made me develop this article is to examine Nepal's healthcare landscape about how people understand their responsibility as individuals to deal with their health concerns and challenges. The overarching guiding orientation in this paper is to comprehend whether health is considered conditioned or made in the Nepali context.

The following are the specific objectives of this paper:

1. To analyze women's experience of uterine prolapse through the lens of acting responsibly and interrogate how the research participants present them, and

2. To examine the factors that influence people's notion and practices of acting responsibly

Research Methods

Multiple ethnographic and qualitative research studies conducted at different times in various parts of Nepal aiming to seek explicitly focused research mainly around the health, gender and women have provided the foundation for the development of this article. Studies on uterine prolapse conducted from 2012 to 2022 in multiple sites in Nepal's middle hills in Gorkha, Parbat, Kabhre, Dhading, and Sindhupalchowk are the main sources of these data. I was involved in each of these medical anthropological studies as a principal investigator. The study designs employed in these research were exclusively qualitative and ethnographic with my involvement as a medical anthropologist in each of the studies and at least a female field researcher was also involved to have conversations with the patients—the women research participants.

Observations and interactions were the main techniques of data collection employed in these different researches. In-depth interviews with the research participants, key informant interviews, and observation of mobile health camps

were the main techniques employed to generate information from the field. The informants were sought from adult people comprising of both rural and urban areas, men and women, and health care seekers and service providers. The thematic analysis was adopted in generating themes from the data acquired from these field studies after revisiting the field data in consideration of the objectives of this paper. The utmost ethical considerations have been upheld while acquiring and processing information and dissemination of the knowledge afterwards. Throughout the process, I have paid adequate attention to the safety, dignity and confidentiality of the information acquired from different organizations and individuals. Whenever the informants are quoted here, pseudonym has been used to refer to both the individual and organization to anonymize their identity.

Vulnerability to Pelvic Organ Prolapse: Embedded in the Ignorance

Ethnographic information acquired from two different genres of studies, which commonly fall within the broader umbrella of medical anthropology, provides the foundation for this part of the paper. The lived experience of the patients, the experience and observation of the health care providers, family members' observations and interrelationships as well as some data acquired through the ethnographic observations are employed in weaving this chunk of the article.

Many women are suffering from pelvic organ prolapse (POP) in Nepal. The unique aspect of POP's situation in Nepal is that women in the relatively younger age of early twenties are also suffering from this ailment (Dahal, 2017). Living in a harsh socio-ecological environment dominated by patriarchal values and norms, these women have realized that women's bodies are more vulnerable to disease than that of their male counterparts. "Since flesh and blood are similar in all human body, so all of them become sick", is very rarely heard in the field, as a Chhetri woman in her mid-thirties from Gorkha stated.

Likewise, people have realized that being ill is inherently natural to the human body, "to be ill or to have disease is like a law of nature", as an elderly Tamang woman from Kabre had stated. Upholding this kind of idea relieves people from taking the responsibility of getting ill. When we look at the finitude of human beings amidst the infinite capability of nature, getting ill is indeed part of being human.

Many women in the early years of POP studies around 2008/09 used to express their situation of helplessness because of a lack of awareness among themselves. Lack of appropriate knowledge and consciousness of health care has been pointed out by both the health workers and the patients themselves as the leading cause of POP among rural women in rural Nepal.

> For the child delivery, village people put hair inside the mouth of a woman thinking that she feels vomiting which will create stress in her stomach leading to a comfortable delivery. And another is to let the woman hang in the rope to have stress in the stomach. She said both these are very dangerous and they are the main reason for prolapse. Additionally, they also have negligence of post-delivery and pregnancy care, which further increases the chances of having uterine prolapse. (Health Post In-charge, Kabhre)

> Diseases come from illiteracy and negligence to sanitation. We were not aware of care in the post-partum period. We did not know that we did have not to lift weights in this period, avoiding early resumption of early sexual relations, not only my husband but I am also responsible for this. (44, Chhetri, Kabhre)

Women had taken responsibility for the ailment that affected their body parts due to their fault of lacking consciousness. Their confession shows that knowledge comes from literacy, mainly formal education. The widespread understanding of being literate in contemporary Nepal implies that people become

aware of new ways of carrying on life appropriate to the changing and challenging times (Fujikura, 2001). Not having such a life mantra makes these women feel lacking consciousness and being excluded as well as ironically it provides even a sanctuary to what they regard as inappropriate behaviours.

Realization of the inability to act responsibly which results in a problematic health situation leads to the feeling of guilt and shame. The sense of guilt and shame is manifested in different forms among the women.

> Now my youngest daughter is 24 years old and I had this problem since her birth. I had not disclosed about this ailment over the years. It is a hidden disease (*lukewarm ro*g), and women in our locality feel shame to expose this. (Woman, 49, Dhading)

> I feel shame about which part of my body I got such an ailment. At the age of 35, my menstruation did not stop for 15 days and my eldest son took me to Nardevi Ayurvedic Hospital in Kathmandu. The doctors advised me to keep the ring pessary. (Women, 54, Sindhupalchowk)

Acting Responsibly: Deserves External Support

Looking for causation of the ailment at the structural level is significantly available in these field sites in the middle hills of Nepal. Some of the women regard poverty as the main culprit of the ailment- every problem and disease happens only to the poor. Sometimes, people make use of the discourse that shifts the responsibility of getting ailment towards her natal family and the prevalence of inadequate care during childhood. Bishnu Katuwal (53) from Kabhre regards, "his wife had to face a lot of problems since her childhood that her mother died when she was one year old so she did not get enough care (from childhood) and got weak body".

Women also pointed out that their inferior power relationship with their husbands had also constrained their ability to act rationally. These women have considered an excessive share of the burden of work on their part as natural. They

do not question it unless it goes beyond their physical capability to handle that. Moreover, sometimes their lower saying in the intimate relationship becomes unmanageable for them.

> I think my husband is another reason for my disease (uterus prolapse). He used to force me for sexual intercourse after 25 days of the delivery. As a woman, weakened by the delivery I could not do anything against his desire. (Woman, 63, Sindhupalchowk)

> Both my husband and I were unaware that the resumption of early intercourse could lead to this kind of problem; otherwise, I would have avoided him. (Woman, 44, Kabhre)

The dynamics of the interplay between different social, cultural and economic factors make women vulnerable to multiple morbidities.

> We do not have access to health care services, we have to do heavy work, and often we experience a lack of sufficient rest after delivery. Likewise, neither we have time to care for ourselves nor do we have ideas and knowledge to make us healthy. So far as I have heard, uterine prolapse occurs only among the women of the village and not in the city. (Woman, 38, Gorkha)

With the internalization of the need for external support in bodily care, responsibility goes beyond the level of individual and family. Women have also realized that their existing knowledge is insufficient to take care of themselves. That is why they approach the medics and health facilities. Sometimes, they also participate in awareness-raising programs conducted by the local health facilities in collaboration with other NGOs and development partners.

> I have taken two days of training about uterus care and prolapse. One of my neighbors called me for the two days of training. I went immediately as I was eager to learn some more things about delivery care. I would also like

to request you (the researcher) to arrange high-level training). From that training she knew that a woman has to keep herself clean; otherwise, she has to suffer from various diseases. (Woman, 42, Dhading)

Women have also stated that once they learn about the need for hygiene, maintain decent and healthy behaviour, reduce the workload, and need medical consultation, some of them have begun to alter their health ideas and practices.

Realizing the pains and suffering in my life after this ailment, I think our body is most important. Nothing is more important than our body. Our life resides in our body. If we cannot take care of our body, if there is no body, then what else do we need? (Woman, 53, Kabhre)

Conclusions

The debate about acting responsibly in the healthcare sector has not attracted sufficient discussion in Nepali academia yet. This notion is in line with the idea of survival of the fittest, an evolutionary mantra. In the absence of adequate debates, often, either an individual's agentive capacities are downplayed, or the power of the structural forces overemphasized. The ethnographic data on uterine prolapse in Nepal suggests that women's way of acting responsibly is socially mediated and conditioned by much more powerful exogenous forces. It will not do justice to these women to simply label them as not acting responsibly. Such judgment, without understanding their social, cultural, and economic context and constraints, will be merely another form of victim blaming for finding their fault for not being able to come out of the structural traps.

Even if women are living in poverty, misery, and suppression, they still have shown their capability to be 'both the subject and object of their knowledge' (Foucault, 2002), knowing their situations by themselves. As a subject, they are capable of comprehending their conditions and the body, the object. Then, why

not expect them to act responsibly about their bodies and health? Not doing that, in principle, would be an injustice and even downplay their knowledge and capacity. Nevertheless, considering they are situated in typical conditions, they do need to be facilitated by the external agencies of medicine in a broader sense and the state machinery.

Acting responsibly involves a differential degree of involvement in some or all of these aspects of vulnerability and social mediation of acting. On top of this, it also evolves as per the need and may not be sufficient to maintain health, hygiene, and well-being over the period in a linear way. Lack of adequate knowledge, in light of the omnipresence of modern and formal education, seems to be a dominating phenomenon in the study areas. To make the women not feel humiliated for their lack of knowledge, their knowledge base must be expanded, and that should not be interpreted as a lack of acting responsibly.

One more important point, in light with the increasing number of mobile medical camps in different parts of rural areas, and government attention to surgical solutions to prolapse, it is imperative to be cautious that the medicalization (Dahal, 2022; Frawley, 2015) of uterine prolapse is not expanding. In this case, acting responsibly may become equivalent to the enhancement of passivity of the individual actant, to depend upon resolution in the sanctuary of the medical domain, instead of enhancing one's capacity, raising confidence, improving resilience, and elevating immunity.

Further critical research and scholarly contributions are needed in the field of how patients and health seekers' acting responsibly is influenced and mediated by the broader cultural context. How do different actors in the health care domain view such a notion, how do the contemporary global health practices and ideologies come into play in the process of acting individuals in Nepal through which channels and mediations their influence is exerted and at which degree

needs further explorations? Instead of considering the notion of health, healing and health care provisions as exclusively evolving within a country context, they have to be sufficiently dealt in light with and as part of the global health development process. These aspects have not been sufficiently dealt with in this paper and these issues deserve further research and scholarly engagements in the broader anthropological arena.

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Context-Specific Dynamics of Centrally-Planned Macro Program for School Infrastructure Reform

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Abstract

The educational program evolved at the national level manifests in a general macro program. The school infrastructure development program through the President's Education Reform Program (PERP) is one of the centrally developed educational programs in Nepal, as the case of this research article. The objective of this article is to analyze the context dynamics of centrally evolved school infrastructure (ICT and classroom building) program installation. The primary data employed in this article were drawn from the stakeholders of three program school cases situated in Sarlahi and Rautahat districts belonging to an embedded multiple-case study design of qualitative research methodology. FGD, key informant (KI) interviews, and general observation methods were used for information elicitation. The research findings reveal that centrally developed macro program policy interacts with school system-specific micro-contexts or central policy contexts which make program policy be implemented irrespective of the prioritized need, adapted with a modified technical design responding to the school-specific resources, and practiced with diverse school leadership styles. In the lapses of coordination and commitment of the tiered governance systems, the PERP or any other macro-program policy becomes strange for the implementers. The complex interaction of school-specific systems dynamics consisting of school infrastructural needs, stakeholder involvement, established school leadership styles, and initiation of local government authority make central macro policy be enacted and adapted rather than be linearly implemented. This implies incorporating the school-specific dynamics as a core component of the education plan for the formation of pragmatic program policy to enact effectively.

Keywords: complex systems, program policy, school infrastructure, program implementation, dynamics

Context-Specific Dynamics of Centrally-Planned Macro Program for School Infrastructure Reform

Conceptualizing and developing education programs at the central level with a macro education systemic view is a top-down linear approach, Nepal adopts, for transforming the micro school systems evolved in the local contexts. Transformation is a buzzword (Ahmed, 2010) in today's national and global education policy and programs where education reform is placed at the center of concern (Verger, 2018). In this context, realizing the fundamental requirements for quality school education, the Ministry of Education, Science, and Technology (MOEST), Nepal, has been continuously making efforts to develop different modes of the program towards the transformation of the public school system (Research Center for Education Innovation and Development [CERID], 2007). Among the programs, school infrastructure development is one. Infrastructure is a fundamental aspect of ensuring a child-friendly environment in a school system.

President's Education Reform Program for physical infrastructure and learning facilities of educational institutions was announced by the Government of Nepal (Office of the Prime Minister and Council of Ministers [OPMCM], 2019) and committed to implement through the national policy and program (OMPCM, 2020). The PERP Implementation Procedure informs in its very preamble that the program was conceptualized to contribute to enhancing the quality education of the public schools by ensuring their infrastructure development and reconstruction, improvement of the student learning achievement, laboratory, instructional, and sports materials (Office of the Prime Minister and Council of Ministers [OPMCM], n.d.). The program is undertaken into a set of diverse reform programs i.e. construction of community school building; improvement of students' learning achievements; use of information and communication technology (ICT), innovative pedagogy, and learning materials for quality education; improving access to technical and vocational education; and

management of extracurricular materials (play based materials) and extracurricular teachers in the community schools (OPMCM, n.d.), which intend to respond the needs of local school systems of the country.

The Centre for Education and Human Resource Development (CEHRD) is the macro systemic tier to regulate, implement, and supervise the reform program (OPMCM, n.d.). Through the fiscal years 2020/2021, 2021/2022, and 2022/2023, 7278 schools, 4172 schools, and 3475 schools respectively had benefitted from across the country regardless of the school education structure(Center for Education and Human Resource Development, 2020, 2021, 2022). Despite the diverse areas of school support programs mentioned in the PERP policy, in the latter two fiscal years, the program emphasis was only on two areas: the ICT facility program and the two-room or four-room school building construction program.

Objectives

The objectives of this article are to analyze the interplay of dynamics of the installation of infrastructure development programs in school systems and to identify the effectiveness of the school leadership styles in managing the dynamics of the infrastructure installation.

Literature Foundation

A comprehensive approach to literature review was adopted in the development of fundamental issues to connect policy and practice and identify the present research practice in the periphery of the issue. The theoretical and the empirical literature review have strengthened the study by providing theoretical orientation to and justifying the rationality of the paper respectively.

Theoretical Underpinning

This paper relates the logic model (LM), theory of change, and complex systems theory to interpret the program information. The program logic model which is also known as program theory informs a logical sequence of the

resources, activities, output, and short-term, intermediate, and long-term outcomes (McLaughlin & Jordan, 2015) of the PERP. Though the logic model is a traditional linear theoretical instrument to interpret a program, evaluators or researchers often use this model to link and analyze the program entities like inputs, processes, outputs, and outcomes linearly which reveals the intended and actual position of a program. It can serve as the foundation for making decisions about the program (Fitzpatrick et al., 2011). Theory of change propounded by (United Nations Development Group [UNDG], 2017) is a method that explains how the PERP, an educational program representing a given set of interventions, is expected to lead to specific development change in the school systems, drawing on a causal analysis based on available evidence (United Nations Sustainable Development Group, 2017). This theory is accompanied by school sector programs like SSDP (MoE, 2016) and SESP (Ministry of Education, Science, and Technology [MoEST], 2022), which gives insight to this author to interpret the program impact. The program policy deals with systems theory. Cunningham (2014) states, "All things come embedded in situations, most involving multiple entities in interaction. Multiple entities in interaction can be understood as systems" (p. 13). Therefore, the complex systems theory rejects the notions of the traditional theories viewing infrastructure installation in the school system of the PERP from simple, closed, and linear systems.

Further, the complex systems theory has drawn concentration to analyze the multiple diverse components or factors that interact in multiple diverse ways, producing diverse outcomes that are difficult to predict in advance (Cunningham, 2014; Page, 2011). This theory implies that the school leadership is expected to seek a new paradigm to lead a school program selecting an appropriate model from solo, shared, distributed, system, moral leadership, and blended leadership (Bush, 2019; Bush & Glover, 2014; Coleman, 2011; Crawford, 2012, 2019) to respond complex context.

Empirical literature Review

Content analysis study made by Egmir et al. (2017) on the educational research trends shorting out 197 research studies consisting of 251 subjects from 35 developed and developing countries found out teaching and learning, teacher education, skills, curriculum, teachers, ICT, scale development, ethics of responsibility, comparative education, nonformal education, employability, and school dropouts themes. Likewise, Ahmad's (2021) study explored school maintenance processes, techniques, frequency and routine of the reparation, and obstacles faced by schools in preparing facility and infrastructure reparation. However, these do not cover the issues related to the infrastructure installation process. Among the rare studies in this field, the study made by Cuesta et al. (2016) with the representation of developed and developing countries shows that the impact of the overall school infrastructure on student learning is positive. Similarly, another study informs that the educational infrastructure supports teacher professional learning and promotes changes in teachers' professional practices and beliefs (Shirrell et al., 2019). Furthermore, the school infrastructure facilitates and guides teachers' sensemaking processes about their instructional practice (Larsson & Löwstedt, 2023). The review shows that the research on the school infrastructure about quality learning of children is yet to be prioritized educational research since it is a fundamental dynamic for a safe, healthy, and conducive learning environment for a quality education.

A school's better physical infrastructure is the prerequisite for meaningful classroom teaching and learning (CERID, 2008). Further, the CERID writes in the research report that efforts to improve school construction and its supervision should be continued, and good lessons, in such efforts be employed in other districts where there are serious problems of physical infrastructures which are hindering the pedagogical practices. The study of school infrastructure conducted by the CERID has shown that the number of schools with facilities like toilets,

drinking water, and a library has gradually increased. The increase in library facilities has been over 20% (CERID, 2009). Another area of study made by the CERID (2009) was the class repeating trend of the school students in Grades 5, 8, and 10. The critical findings available from ERO's assessment of the NASA reports recently published show that there is still a huge mass of students at the underperforming level (Education Review Office [ERO], 2020). In the school performance audit conducted by the ERO in 2019, the physical infrastructural status of the secondary schools of Nepal measured in average percentage was only 51.7% which indicates an ordinary status of the schools (ERO, 2020). In the tiered governance system in federal Nepal, the local governments appear more engaged with school infrastructure development and student enrolment than with enhancing classroom teaching quality (Schaffner et al., 2024). The study justifies the necessity of research for quality infrastructure construction in the community school systems.

Methodology

The pragmatic research paradigm orients this study to construct knowledge compatible with the multiple theories of the theoretical framework using multiple cases, multiple methods, instruments, and data sources of the methodological approach (Mertens, 2010; Morgan, 2014) to respond to the complex, holistic, and practical problem. The study was based on an embedded multiple-case study design of qualitative research methodology (Yin, 2018). It was a program evaluation research. For the study, three program schools, two from Sarlahi and one from Rautahat district, individually representing toilet and drinking water/ICT installation, two-room building construction, and four-room building construction programs of the PERP as cases, were purposively selected.

Research program school cases and participants were selected employing a purposive sampling technique. The selected research participants were 1 headteacher, 2 teachers; 6 students, 6 parents, and 6 school management

committee members from each sample school; 2 local authorities (elected and personnel) of each program school system; and 2 education personnel from each two district Education and Development Coordination Units (EDCUs). Altogether, 71 research participants were voluntarily involved in the research in the process of generating context-specific and generalized information for coconstructing knowledge about the dynamics of program installation.

Focus Group Discussion (FGD) for the parents, students, and the school management committee members; in-depth interview**s** for the school headteachers and teachers; and key informant interviews for Education and Development Co-ordination Unit (EDCU) and local authorities were used to collect information devising the instruments and using video and audio recorder. In this process, 3 FGDs with parents, students, and SMC members in each school and 17 individual in-depth interviews were conducted. Likewise, the infrastructure installation status had been observed.

Results and Discussion

Diversified Practice in Contexts of the Centrally Developed Policy

The stakeholders and implementers with their agencies were found resisting the positivist or objective notion of the policy and deserving to have interpretive analysis with their context-dependent diverse meanings that influence their acts (Yanow, 1995). Though the PERP is a need-based grant support program (OPMCP, n.d.), the program policy is rigorous general program contents, already specified programs, uniform infrastructural design, and same grant support specifications for school systems situated in the diverse socioeconomic context across the country.

In this policy context, the actors in the context have diverse interpretations from the schema formed within the school situated with unlimited needs and problems being perceived. As stated by Spillane et al. (2002), the implementation schema of the monolithic central program policy confronts implementers'

criticism. The actors of the program policy at different systemic levels possess different and complex reactions and responses toward implementation.

Policy Enactment Irrespective of the Prioritized Needs

The schools are seeking grant support for their school-specific prioritized needs. Though the PERP has different categories of support programs, among the program schools, two had to receive support grants irrelevant to their prioritized needs. Talking about the support program, school A, situated in a rural-terai area running with basic level education, was found suffering from numerous infrastructural needs, and was to propose grant support in compliance with the PERP specifications. The headteacher of the school said, "The grant proposals were modified for toilet construction grant support in the first program year and for ICT installation grant in the second year of the program, though the prioritized needs were teaching staff and construction of the school compound wall". Further SMC chair and Headteacher both added, "We are in search of adequate grant support to respond to the infrastructural needs of constructing school compound wall and replacing wrecked buildings." The researcher's observation captured that the expensive Advanced Virtual RISC (AVR) smart board, printer, and desktop computer with an all-in-one system had been kept in the rooms with a weak lock system and wrecked building. On the other hand, like the research findings of Rana et al. (2022), none of the teachers received training in the use of ICT in rural schools and teachers to handle it properly and purposefully. Likewise, this shows a complex and adaptive enactment of the macro program policy into micro practice (Moss, 2012).

A similar practice was found in the program school B also. A secondary school was running in general as well as technical education stream (Electrical Engineering) is running. The headteacher of the school shared:

> Additional classrooms were necessary to manage the classes of both
> streams with huge numbers of students. The pressing need of the school

was the classroom. So, the school dropped the proposal for four-room building construction in the first program year. The school was selected for a building construction grant. Despite this selection, the school was given the ICT installation grant.

This informs that schools exhibit many features of a complex interaction of systems' elements or agents performing macro and micro systemic coevolving relations and results unpredictably. Hence, the school both shapes and adapts to macro- and micro for its self-organizing development (Morrison, 2008). This coevolving system seems to avoid the absolute implementation notion prescribed by the program logical model of linear single cause and effect sequential systemic theory.

In this regard, the headteacher further expressed, "The classroom building was a must, but the authority said the number of school grants ran out. So, take the ICT support program." This shows the macro policy does not respond to the micro school-specific problems or needs adequately.

In the subsequent year, however, the school proposed for classroom construction and got a grant for two-room building construction. However, the building construction process plunged into a disoriented interaction of the school system power dynamics (Burgh & Yorshansky, 2011), insufficiency of the grant provided by the federal government, and lack of coordination of the federal and local governments in terms of conditional grant as per given in the PERP policy (OPMCP, n.d.). The comprehensive or holistic program is expected to respond to the complex problems of such a school system for sustainability of the reform rather than a piecemeal program policy (Wells, 2013) which addresses only one aspect of the complexity.

Adaptive Implementation of Technical Design of Infrastructure

As response shared by the research participants, structurally, the design of building construction had been changed in program school C, a secondary school

situated in an urban municipality. The central policy spelled in President Educational Reform Program Implementation Procedure 2019 and circulated instructions tell the program implementers to construct a one-story four classroom building symbolically recognized as the president's office-initiated educational reform. The researcher got to observe a building being constructed as a four-room two-storey building, which is generally not allowed by the technical prescription of the PERP policy for the construction. Curiously researcher asked the members of the SMC in FGD, "The school has limited space, and not possible to build the four-room two-storey building. So, structural design for a room two-storey building prepared by the Municipality Engineer has been followed instead of the notion of the PERP policy." In the Terai urban areas, the schools have owned limited space for schools.

Headteachers of the school also shared the same thing, "though the federal policy was to build a four-room one-storey building, a two-storey four-room building had been designed by local government engineer and construction was initiated accordingly due to the lack of space in the school compound". The same thing was shared by the municipality Engineer as well in the interview conversation. It shows that the general building design policy of the center level (macro system) does not work exactly as it intends. Rather the policy is interpreted in the local context and adaptively implemented responding to the space available, composition of soil, and landscape for building construction in the area belonging to the school systems and analyzing and projecting the building structure fit-for-future.

Effect of Locally Unadressed Conditional Grants

The notion of fiscal support for school infrastructural transformation mentioned in the President Educational Reform Program Implementation Procedure 2019 instructs to enact a conditional grant which expects a crucial role of the local government to complete the cycle of construction. Headteachers and

municipality mayors who are key players in implementing the PERP-supported construction are found skeptical about the policy notion of conditional grants. A rural municipality mayor, under whose constituency, the program school A is situated, said, "It (PERP policy) has not been yet included in policy agendas of the municipality. But I commit to allocate budget to complete the construction work of buildings." This reveals linear, discrete, and compartmental policy systems or agents on program implementation.

Nothing is expected to stand alone, everything is naturally interconnected (Kershner & McQuillan, 2016) for dynamism. Unlike this natural system a gap between the national and the local rural municipality policies. The skeptical policy behavior at the local level weakly favors the PERP to establish as a local system dynamic in the complex school systems. Likewise, a research participant representing the Education Section and Information Officer of a Municipality reacted to the PERP policy provision for fiscal collaboration with the local government, "the central government thinks that the local governments have an excessive budget. This is wrong thinking". Referencing the program school B, he further expressed the causes of incomplete infrastructure construction, "the school has been also facing same barriers like the budget insufficiency, locally unrecognized conditional grant of the central policy, and lack of central and local governments' co-ordination on conditional grant mentioned in the PERP implementation policy". The research participant expressed his reservation about the budget allocation of the local government in the context of Terai:

> the road construction has been still being prioritized in the local policy, program, and budget which is not necessary in the case of Terai since no places are found in Terai out of the road network. Rather the education and other service sectors should be prioritized in the policy program and budget allocation now.

This hints at rethinking the pattern of the policy, program, and budget allocation analyzing the sector-wise development proportionately and priority basis.

Determinant Role of School Leadership Styles for Program Enactment

The leadership style applied by a school leader matters for the successful implementation of school education reform programs. The leadership styles like solo, shared, distributed, system, moral leadership, and blended (Bush, 2019; Bush & Glover, 2014; Coleman, 2011; Crawford, 2012, 2019) make different degrees of interaction with the program policy. Solo leadership intersects with the technical rationalistic or linear logical systemic model whereas shared, distributed, and blended leadership styles are expected to be complexity-responsive.

In the research process of the infrastructure policy implementation, the foremost concern is the school-based leadership. Leadership is the process that is an integrated functional quality of value, vision, and influence (Bush, 2019). The leadership role performed by the headteacher in the process of the PERP implementation, in terms of infrastructure installation, is "independent of positional authority" (Bush, 2019, p. 4) and adaptive leadership responding to the complex school context.

In this way, leadership is "whereby intentional influence is exerted over other people to guide, structure, and facilitate activities and relationships in a group or organization" (Yukl, 2010, p. 21). Among the three program schools, program schools A and B were found practicing a shared leadership style by the school headteachers in which there are patterns of interactive leading–following relationships developing cohesive group-level leadership structure, they can also change such that who is leading at one point in time might be following at a different point in time (DeRue, 2011) and or in issue. The shared role of leader and follower is a complex adaptive process (DeRue, 2011) that evolved through the role played by the involved stakeholder actors representing power systems to

respond to the needs for the school infrastructure under a shared common vision. Through the research, it is found that distributing authority via networks stimulates the emergence of shared leadership (Kershner & McQuillan, 2016) that characterizes a dynamic, energetic, and accountable performance; and possesses a team excitement on work accomplishment, spirit, and perfection of the four-room building construction.

On the other hand, solo leadership led by a headteacher with formal positional authority ignoring the power relation and their interaction is likely incompatible with responding to the complex and dynamic school system. The performance of this leadership for installing the two-room building construction program of the PERP was found clumsy, slack, criticized, and incomplete work. this shows that the shared leadership is a collective leadership which is a better program enactment instrument than the solo leadership measure.

Adaptive Installation of Infrastructure Program

The central program policy of the PERP is a major dynamic that has confronted complex dynamics in the implementing school contexts. Like in stated by Honig (2006), this implementation research found policy, people, and place as the dynamic dimensions that interact with each other while the PERP implementation has taken place in the school contexts. The policy goals, targets, and tools of the program are general and, monolithic directions in the concept used by Spillane (1998); people representing formally named or unnamed, a subgroup within formal targeted, policy maker, policy implementer, communities and other association; and places like focal organization, historical and institutional contexts, and crosssection system interdependencies (Honig, 2006) are for Spillane (1998) nonmonolithic systems. To mitigate the macro objective reality in policy and micro nonnomothetic school context reality, an implicit mutually adaptive policy evolves through the interaction of top-down policy enforcement and bottom-up policy anticipation which is mediated through people

(actors). That is, centrally set policies are modified in formal and informal ways to reconcile macro-level demands with micro-level realities (Sultana, 2008).

In the process of program policy implementation in the school context, systemic units at the local level are school administration, school management committee, education, and development coordination unit, social auditing committee, education section of local government, and local government which have explicitly defined legitimate role and responsibility to understand the school needs, to influence policy enactment of school construction, to involve in activities, and to orient the other people. These dynamics are categorically sated as central policy on infrastructure installation, school need, stakeholder involvement, school leadership, and local government authority, given in Fig 1. These school system dynamics revealed in behavior by human actors with authenticity for enacting a policy of the school building construction program are crucial.

Figure 1

Systems Dynamics of School Infrastructure Installation.
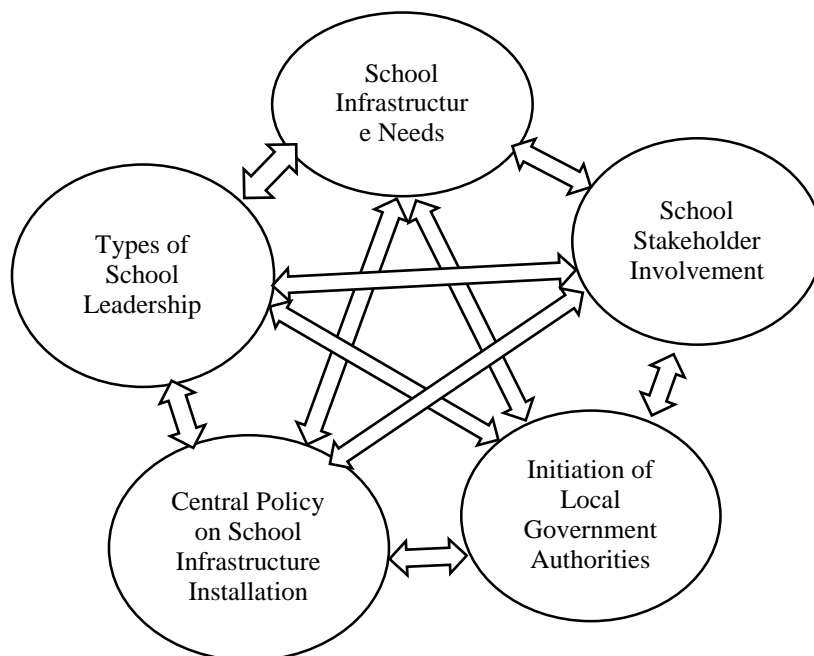
In the case of program school B, the dynamics of the system were disoriented, uncoordinated, and fragmented in terms of the policy enactment of school classroom building construction. As a result, the construction program is waiting for further system decisions to address the incomplete work. In the case of the other two program schools, the infrastructure installation program is being carried out in a coordinated, speedy, without dispute, and goal-oriented manner of the dynamics.

Conclusion

The PERP, a macro program policy logic, intends to have coordination among the tiers (federal, provincial, and local governance) of the federal government system for its implementation. In the program policy, the conditional grant provision is a key issue yet to be recognized by the local government through its policy and program to bring it into practice, though it is a pragmatic policy perspective. The provision seeks a shared fiscal responsibility in the school reform program. To respond to the context of this complex system, the infrastructure reform programs are found adaptively installed in the diverse school systems. The classroom building construction in the observed program schools is found far to have completion of their construction due to the incomplete grant and lack of policy program intervention of the local governments. The construction programs addressing the prioritized needs and managed by a shared leadership style can accelerate. Similarly, the ICT grant support has proven to be useful in the scarcity of teachers and for student motivation in the basic school; and for the technical education students and teachers for technology-based teaching and learning. However, there is uncertainty about the security and sustainability of the ICT facilities and devices installed in the rural basic schools with no compound wall and run with poor physical infrastructure. Similarly, the cost-effectiveness and proper use of the ICT-CCTV camera (which was not functioning) and expensive smart board installed in the school are matters of criticism. These

happen if the support program is not as proposed grant support based on the prioritized needs of the school. These types of programs are also found to be technically unintended support programs. This reality shatters the linear notions of program logic. The complex interaction of dynamics is an unavoidable system phenomenon.

Policy, people, and place are the dynamic dimensions for an infrastructure program installation in the school systems. These are general dimensions that comprise specific, active, and functional dynamics like school infrastructure, involvement of stakeholders, initiation of local government authorities, central policy on school infrastructure installation, and type of school leadership style. The macro policy like the PERP with the intent to transform the school infrastructure confronts functional dynamics at the micro level incomplete nature in the ground realities of the schools. Human factors as actors to manage and reorient the dynamics which is addressed with school leadership style.

Implications

The research findings suggest that infrastructure program policy needs to reflect the complex dynamics in the community school systems. The findings also imply the need for reconceptualizing the traditional monolithic macro program policy and developing policy responding to the school with diversified dynamics of program implementation. This also informs that the existing trend of policy-practice research seems likely unable to explore the complex interplay of the dynamics in the process of infrastructure program installation in school systems. Hence, this article implies school infrastructure installation research is a new dimension in the field of implementation research study.

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Bronze Sculpture of Mara Vijaya of National Museum, Nepal: A Study of Iconographic Perspective

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Abstract

In Buddhism the images display the story and event of temptation of Mara to disturb and misguide devotion during the process of enlightenment of Siddhartha Gautam. The art which reflects this is called the icon of Mara Vijaya. The legend regarding the story of temptation of evil Mara over the good Sidhhartha Gautam can be found in several Buddhist texts. Due to the iconographic features and themes of the Buddha Jataka stories of temptation of Mara, the bronze sculpture of national museum is considered as an important specimen. The figures of Lord Buddha, demon Mara, his daughters, army troops, Ganesh and other animal's figures have been sculptured in very attractive ways in this bronze relief. This paper explores the major iconographic features and to examine its importance as the bronze art heritage of Nepal. It employs qualitative approach and primary data and secondary information have been used. Required secondary information has been generated from journals, books and electronic versions of different sources while primary data have been collected by doing field study in national museum with in-depth observation of such relief.

Keywords: bronze sculpture of Mara Vijaya, iconographic features, Lord Buddha, myths and legends of Jatakas texts, temptation of Mara

Bronze Sculpture of Mara Vijaya of National Museum, Nepal: A Study of Iconographic Perspective

There are some noteworthy illustrations of sculptures and paintings in different museums and archaeological sites of India and Nepal. The relief of Ajanta Cave, India, the tympanum carving of Itumbahal, Kathmandu, wooden sculpture of wooden work museum, Bhaktapur, sculpture of Bhinchhebahal, stone image of national museum and the bronze relief of national museum are known as the representative images of Mara Vijaya.

Most of the early works of Indian art are Buddhist. The earliest architectural remains in India are the *stupas* and Buddhist cave cut in rock. The *stupas* or cupolas of brick and stone masonry enshrine the relics of the Buddha or his disciples and those at *Sanchi* are fine examples of art (Bapat, 1983). Buddhist art that there existed before the image of Buddha was created. A wealth of art creation, sculptures, reliefs, paintings, all created by artists, in the service of Buddhism and treasured by millions of Buddhists in the countries of Asia as part of their national art and as part of their religious devotion (Mode, 1983). In this circumstance Joshi (1983) highlights:

> One of the enduring and visible fruits of the spread and growth of Buddhism can be seen in its wealth of art. The experience of Buddhist art is a profound experience for us all. The richness and verity, the depth and beauty of Buddhist art when studied in the light of its great mass are simply enormous and astonishing. In all field in architecture, sculpture, painting, and handicraft Buddhism has produced works of art which stand in the front rank of the highest creations of world's art (p. 162).

Naturally, from the very earlier the places associated with the events and miracles in life of the Buddha become places of pilgrimage for Buddhists who put up commemorative monuments there. On the basis of this theme several monuments and art objects constructed especially in *Sanchi* (150 BC to 50 BC),

Bodhgaya (75 BC), Karle (150 BC), *Bhaja* (2nd century BC), Earlier *Ajanta* (2nd to 1st century BC), *Saranath* (1st to 6th century AD), *Nalanda* (6th to 12th century AD), Later *Ajanta* (5th to 7th century AD), *Ellora* (7th century AD), *Bahrut* and *Amarawati* in India (Krishna, 1983).

Like in the Indian territories, in Nepal too different places associated with the Lord Buddha and his religion, from the very earlier they were developed as the important pilgrimage sites and constructed different types of monuments and art treasures through the ages. Among the places, *Lumbini, Kapilvastu, Niglihawa, Gotihawa, Debadaha, Ramagram* and the valley of Kathmandu are quite noteworthy pilgrimage sites where we can find numerous treasures of Buddhist art and architecture from 3rd century BC to later period.

During the preliminary stage i.e. before 2nd century BC, the major events concerning with the life of Lord Buddha like birth, enlightenment, first sermon and death were practiced to present through the symbols. Later in *Kushana* period about 1st century AD, the tradition of depicting the events by symbols were replaced through the sculptures concerning with the particular events (Upadhyaya, 1960, p. 54). The trend radically change in the Buddhist art antiquities found at Mathura, *Ganthara*, now in Pakistan and later *Amarawati* (150 AD to 200 AD) and at *Saranath* and later Ajanta. In fact the sculptures of Mathura and *Gandhara* 1st to 6th century CE reveal to execution of three dimensional Buddha images in the round or of almost in round (Krishna, 1983).

Later on, gradually the sculptures and paintings associated with the four major events of Buddha's lifelike birth, enlightenment or *Mara Vijaya*, first sermon and death and four minor miracles such asmonkey offering honey, subjugation to *Nalagiri* elephant, descending from heaven and walks on river in flood and subdues the serpent in fire temple have been created in as the forms of panel and as an individual events in India and Nepal as well.

The sculptures and paintings which are represented through the four major events and four minor miracles are known as the penal of *Astamahapratihar*. This tradition was existed in Gupta period. Still during the regime of Pal dynasty putting on the middle to the image of temptation of Mara, the tradition of sculpturing *Astamapratihar* brought into the practices in India (Parimo, 1982). This doctrine of sculpturing the Mara Vijay in the middle on the *Astamahapratihar* panel can be observed from 12th century CE in Nepalas well. The sculpture of *Mayurvarna Mahavihara (Bhinchhebahal)* of *Astamahapratihar* with *Mara* temptation is known as one of the best illustration (Gurung, 2047).

Now, in Nepal there are very few images regarding on Mara temptation can be observed specially in the museums and monasteries as well. They were constructed by stone, bronze and wood. Among them, this paper entitled '*Bronze Sculpture of Mara Vijaya of National Museum, Nepal: A Study of Iconographic Perspective'*only deals with the bronze relief sculptures of Lord Buddha on the theme of temptation of the national museum.

Research Problems and Gaps

Concerningon the sculpture arts of Nepal, there are several studies have been carried out from the different scholars of Nepal and aboard as well. Although, specific studies on bronze relief sculpture of *Mara Vijaya* of national museum*,* has still not been adequately conducted. Due to lacking of proper researches, several aspects of such sculpture still remain unexplored that is considered as the huge problem and research gaps in the field of academia. Specially, what are the myths, legends and themes of temptation of Mara in Buddhism? And what are the major iconographic features of the sculpture? These are the major problems and research gaps which inspire to the researcher to prepare this paper.

Research Objectives

Obviously, this paper provides the philosophy of *Mara Vijaya* described

by the Buddha *Jatakas*, brief survey of sculptures of *Mara Vijaya*, trace out the short history of bronze art in Nepal as the general objectives. For fulfilling andaddressing theabove mentioned research problems and gaps, researcher has prepared this research paper with the specific objectives such as to explore the myths, legends and themes of temptation of demon Mara in Buddhismand analyze the major iconographic features of bronze relief of *Mara Vijaya* of the national museum.

Review of Literatures

The theoretical foundation is an important tool and lens through which a researcher evaluates the research problem and research questions as well. Reviewing the literature is only one approach of constructing solid theoretical foundation. On the basis of above mentioned doctrine the following literatures such as Sharma, Bhattarai's (BS 2022) translated form of 'Buddha *Charita*', written by great poet Ashwoghosh, Chopra's (1983) edited book entitled Contribution of Buddhism to the World Civilization and Culture, Bapat's (1983) Contribution of Buddhism to Indian Culture, Mode's (1983) the message of Buddhist art (Reflection on art and religion), Joshi's (1983) Buddhist Contribution to art and architecture, Krishna's (1983) The Buddhist art of India, Majupuria & Majupuria,s (1993) Holy Places of Buddhism in Nepal & India, Ambedkar's (1997) The Buddha and his Dharma,Gurung's (BS 2047) Purbamadhyakalin Nepali Baudhhamurtiharu: ekvivachana, Slusser's (1998)Nepal Manadala, Vol. I & II, Chhetri & Rayamajhi's (BS 2056) Nepali Kala, Vastukalara Pratimalakshana, Dahal & Khatiwada's (BS 2058) Nepalako Kala ra Vastukala, and National Museum's (2019) Art Heritage of National Museum Part II have been reviewed in this paper.

Finally, the previous literatures mentioned above are quite useful for this research work. Although, among them, only a very few have studied about the bronze relief sculpture of *Mara Vijaya*of national museum while many have been

unable to explore and highlight it. Such literatures that have not been able to explore to the issues, they are also quite helpful to generate the conceptual ideas and theoretical knowledge regarding the origin and historicity, philosophy of *Mara Vijaya*, traditions and practices of casting bronze images in the world and Nepal as well.

Methods and Materials

For this study qualitative data have been used more than the quantitative one. Hence, this study is based on qualitative research approach. In this research both primary data and secondary informationhave been collected and analyzed to explore its objectives and to generate valid information. Field work is the main source for primary data through which the iconographic features of *Mara Vijaya* have been identified. During the field survey researcher has applied in- depth observation over the sculpture and conducted interview with concerned authorities of the museum. Likewise, the required secondary information regarding on the philosophical aspects of *Mara Vijaya* and sculptures findings from other else have been collected by reviewing the relevant literatures.

Conceptual Framework

Along with the identification of Mara Vijaya, this paper helps to explore the myths, legends and themes and iconographic features of the same sculpture. In this study both the primary and secondary data have been collected and analyzed. For addressing the above-mentioned research gaps and problems as well as fulfilling the determine objectives this paper has been prepared by applying the following conceptual framework:

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                         ┌─────────────────────────┐
                         │     Mara Temptation      │
                         └─────────────────────────┘
            ┌───────────────────────────┐      ┌───────────────────────────┐
            │ Myths, legends and themes  │      │   Iconographic features    │
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  │ Secondary sources │←──│ Brief survey of sculptures and │──→│  Primary sources  │
  └───────────────────┘   │ paintings                      │   └───────────────────┘
                          └──────────────────────────────┘
            ┌───────────────────────────────────────────────────┐
            │   Analysis of bronze relief of national museum      │
            └───────────────────────────────────────────────────┘
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                         │       Conclusion         │
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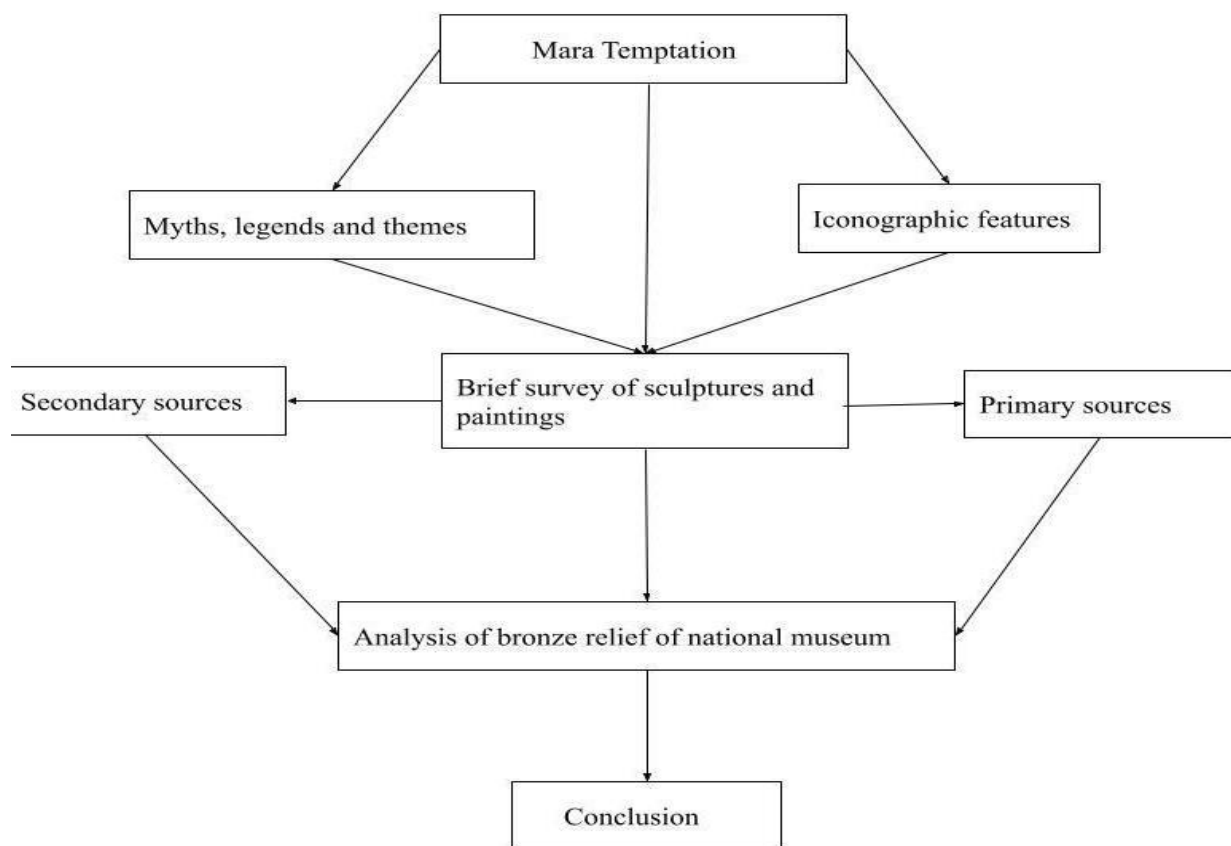
Findings, Discussions and Results

In this study the data of primary and secondary sources and nature have been applied in accordance with the requirement of the issues. Researcher has applied observation method for gathering primary data especially iconographic features of *Mara Vijaya* during the field survey. Likewise, literature review method has been used for generating secondary information such as the concept, origin and development and the philosophical aspects of *Mara Vijaya*. After collecting data and information they were coded, classified and analyzed on the basis of research problems and objectives. Finally, the findings, discussion, result and conclusion of the study have been presented after analyzing and examining myths, legends and themes of Philosophy of Mara, brief surveying of sculptures of *Mara Vijaya* in India and Nepal, in-depth study of Bronze sculpture of national

museum, and exploring major features of such sculpture as the main issues of the paper in chronological order.

Myths, Legends and Themes of Mara

The origin of the legend of Mara is first noticeable in the *Padhana Sutta,* Samyutta Nikaya vs.425-49 (Varma, 1985). The meaning of the word *Mara Vijaya* is victory on *Kamadeva*, the god of worldly attraction (Chaudhary, 2021). According to Hindu mythology *Kamadeva* is known as the god of love. *Atharbaved* is the scripture that mentioned the name of *Kamadeva* for the first time as the mighty god of love and perfection. Later, *Harivamsa Puran* and *Taitariya Samhita* mention to the *Kamadeva* as the son of *Laxmi* and *Shradha* respectively (Sharma, 1999). *Rati* is the consort of *Kamadeva* while the nymphs of the heaven are the sources of fulfillment of the desires (Khatiwada, BS 2074).

Mara in the Buddhist tradition can be best understood as Satan, who always tried to dissuade the Buddha or any one from the righteous path. He is also called '*Namuchi*' as none can escape him and '*Vasavatti*' as he rules all. Whenever, he finds some on treading the path of virtuosity, he creates obstacles and hindrance (Varma, 1985). Mara is known Sanskrit: *māra*; Chinese: *pinyin: mó*; Tibetan *Wylie: bdud*; in Buddhism, is the demon that tempted Gautama Buddha by trying to seduce him with the vision of beautiful women who, in various legends, are often said to be Mara's daughters. In Buddhist cosmology, Mara personifies unwholesome impulses, unskillfulness, and the "death" of the spiritual life. He is a tempter, distracting humans from practicing the Buddhist Dharma and spiritual life by through making mundane things alluring, or the negative seem positive (Trainor, 2004).

As mentioned by the Buddha *Charita*, a famous scripture of Buddhism, *Kamadeva, Chitradhanawa* and *Punyavana* are the other names, sometimes these are used to identify to the demon king Mara. He is the enemy of final liberation (*Mokksha*) of life and known as the almighty king of sexual desire. *Bibhram,*

Harsa and *Darpa* are his three sons and *Tanha, Arati* and *Raga* are the three daughters (Sharma Bhattarai, BS 2025). He has got demon army troops as well. His ten-fold army troops are Lust; Aversion; Hunger; Thirst; Craving; Stoth and Torpor; Cowardice; Doubt; Hypocrisy and Stupidity; False Glory; and Conceit. The army troops and daughters were employed to tempt the Buddha after his Enlightenment; and they could assume numerous forms of varying age and charm (Varma, 1985).

As per the descriptions mentioned by the Buddhist scriptures Mara is the demon who tries to miss lead to the *Prince Siddhartha Gautama from the path of meditation for attaining enlightenment. He is the demonic celestial king who tempted Buddha.* He sends*beautiful women who, in various legends, are often said to be his daughters, army troops, elephants, dangerous wild animals, wind and strum other celestial mighty power to seduce him from the enlightenment and wisdom.* while Buddha pays no heed to the entire episode. In this regards, Pal (1974) mentions that:

> The temptation image of evil Mara is known as the sculpture of *Mara Vijaya* in Buddhist religion. According to Buddhist literatures during the time of enlightenment of Lord Buddha, evil Mara had sent his daughter, sways, and a horde of demons and other for breaking his attention and misguiding him from the path of enlightenment. In this process they were accompanied by a hoard of demons militantly attacking *Sakyamuni.* Curiously one of the demons is portrayed as *Ganesh,* the *Brahmanical*deity of benevolence, thereby reflecting a distinct sectarian bias. Creatures of delightful fantasy, the demons seem almost convincing in their sinister expressions and aggressiveness (p. 111).

When *Gotama* renounced the world and passed through the city gates on his horse *Kanthaka*, Mara appeared before him and tempted him by the offer to make him a universal monarch in seven days, if he was to change his mind.

Siddhattha, however, did not pay any attention to him (Varma, 1985). *Mara,* the destroyer, Evil One: according to Buddhist legend, the tempter and enemy of Buddha and his religion who, by appealing to Sidhartha Gautam's sensual and material instincts, tried to dissuade him from renouncing the world (Chopra, 1983). In this context Varma (1985) says:

> The Buddhavamsa Commentary and *Nidanakatha* of the *Jataka* commentary, particularly in the Singhalese versions, unfold a very lively and detailed account of the Mara's visit to the Buddha just before his Enlightenment, when he was sitting under the *Bodhi* tree. Seeing *Gotama* seated with a firm resolve to become a Buddha, he summoned all his forces to attack *Sakyamuni*. The forces extended twelve leagues in front and back; and nine leagues on right and left. Mara himself with thousand arms riding on his elephant *Girimekhala*, attacked *Gotama*. His followers armed with deadly weapons and assuming various frightening forms joined him in his attack. The *Devas, Nagas*, and others who had gathered round *Gotama* to pay him homage and sing his praises then fled at the sight of the frightening army of Mara. The *Bodhisatta* then called the ten *paramis*, which he had perfected in various births, for his defense. Each of the ten divisions of Mara's army was then defeated and routed by one *parami*. Eventually, Mara's army had to flee. Vanquished Mara then hurled his last weapon – the *chakkavudha* (disc), which stood over the Bodhisatta's head like a canopy of flowers. Still Mara tried to dissuade *Gotama* from the path of the Buddhahood by falsely claiming the *Gotama*'s seat as his own; and by asking him to prove his right to the seat on which he was sitting. All the Mara's followers then testified Mara's claim by shouting that the seat actually belonged to Mara. As the Bodhisatta had no other witness to bear testimony on his behalf he asked the Earth to speak for him by touching the ground with his middle finger.

The Earth then roared in response and bore the testimony for the Bodhisatta by thundering, "I stand his witness". Thus, the Mara's defeat was final; and he and his followers had to flee. The Devas and other celestial beings then besieged him and celebrated his victory (p.   )

Mara temptation during the meditation for getting enlightenment at *Boddhagaya*, Mara the celestial demon king assailed to the *Shidhartha Gautam* (Saraswati, 1957). In the processes of attaining wisdom *Gautam* was disturbed by Mara, the demon of evils and his personal enemy. Mara tried to allure to the Buddha to three virgins and several women. However, *Gautam* came out victorious (Majupuria & Majupuria, 1993). Mara is the demon, those who are caught in Mara net, entangled in negative views, be caused to gain correct views, thus practices the Boddhisattva way (Blofeld, 1980).

In traditional Buddhism four senses of the word "*mara*" are given. *Klesa-mara*, or Mara as the embodiment of all unskillful emotions. *Mrtyu-mara*, or Mara as death, in the sense of the ceaseless round of birth and death. *Skandha-mara*, or Mara as metaphor for the entirety of conditioned existence. *Devaputra-mara*, or Mara the son of a *deva* (god) that is, Mara as an objectively existent being rather than as a metaphor (Buswell & Lopez, 2013).

Early Buddhists, as well as later Buddhists, acknowledged both a literal and "psychological" interpretation of Mara. Mara can be interpreted either as a real external demon or as internal vices that one faces on the pathway to enlightenment. From the psychological perspective, Mara is a manifestation of one's own mind. No external demon exists since it emerges from our own deluded thoughts. Those who see Mara as a personification of our human ego interpret the stories associated with him in a symbolic way. Mara becomes a representation for internal vices. His attack on the Buddha represents internal impulses towards violence and rage that can be overcome by following the Buddha's teachings of cultivating compassion, detachment and gentleness (Williams, 2005).

The daughters of Mara represent lust and desire, which the Buddha overcame by recognizing their true nature as emptiness. *Mara'*s own attack on the Buddha's pride was defeated by the Buddha's denial of the self since there was no "I" (ego) left to feel pride. Thus, the story of Mara's temptation can be interpreted symbolically, whereby the Buddha's own emotions, desires, and sense of self were represented by demons. Regardless of how Mara is understood, it is agreed that Mara has power only to the extent that our minds give it to him, and he must be overcome to proceed further into the Buddhist understanding of reality (Keown, 2004).

Brief Survey of the Sculptures and Paintings

According to Buddhist religious texts the tempting image of evil *Mara* is affiliated with the religion and philosophy of Buddhism.The tradition of sculpturing the images of temptation of Mara seems to be in existence since the reign of Sung dynasty in India during 2nd century BC, the artists of Indian School of Art gave the priority for the creation of these kinds of art objects in different parts of India (Upadhyaya, 1960). In this respect (Majupuria & Majupuria, 1993) rightly mention that:

> There is a relief of *Mara Vijaya* in the western gateway of *Sanchi Stupa*. It is oldest and quite noteworthy finding from India. The lowest architrave of the gateway depicts a legend about *Boddhisatta* for attaining truth and enlightenment. The back portion of the lowest gateway architrave shows Mara's temptation of Buddha. In the center is depicted the shrine of *Boddhagaya* with the *Bodhi* tree or *peepal* and the throne. On one side are shown Mara's evil forces being vanquished whole on the other side depicted Buddha's victory and rejoicement of angels (p. 316).

The fresco of Mara Vijay discovered from the cave No. 1 from Ajanta Cave is another significant finding of such art object. Ajanta is an important archaeological site for wall paintings. There are two important incidents from

Buddha's life. They are Mara temptation and the miracle of *Sarawasti*. The walls of the hall are painted with the scenes of *Sibi, Samkhapala, Mahajanaka, Mahaummagga,* and *Chapeyya Jatakas* (Majupuria & Majupuria, 1993). There are 30 Buddhist caves at Ajanta, which were probably executed between 200 BC to 650 Christian era. The earliest cave is 2nd century BC, while the latest is of 7th century A.D. In April 1819, they were discovered by a young British Indian army. Among the caves, No. 1 is famous for the fresco paintings and No. 26 for the relief sculpture of Mara temptation. Mara Vijay stone relief sculpture of 5[th]century A.D. carved on the right wall of Ajanta cave No. 26 (Majupuria & Majupuria, 1993). While *Saraswati* estimated the date of this relief is about 7th century CE (Saraswati, 1957). In this sculpture Mara and his daughters disturbed to the Buddha from attaining enlightenment. In this sculpture '*Kinara*' is depicted as sitting on an elephant. This is the only sculpture based on *Jataka* Tales (Majupuria & Majupuria, 1993).

The size of the relief is 12' x 10' which indicates that it is a large size relief and famous sculpture where Lord Buddha is shown in the center and practicing austerity. His facial expression is full of divine peace and bliss. *Mara (Kamadeva)* is depicted on an elephant along with his demon army, ugly and beautiful faces women which surround Lord Buddha. The loveliest women tempting Buddha by dance and music are shown in this foreground of the sculpture. Finally, the failure of Mara and his army has been depicted by artists who have portrayed successfully the expression of peace and self realization on the face of Lord Buddha (Chaudhary, 2021). The practice of constructing sculptures related to the events of the life of Lord Buddha also began quite earlier in Nepal. Near about 7th to 8th century CE few relief sculptures of *Mara Vijaya* have been discovered especially from Kathmandu Valley. In this context, an unfinished *Lichchhavi* relief of the national museum, the sculpture of *Mayuravarna Mahavihar (BhinchheBahal), Patan,* Bronze sculpture of the

national museum, temptation of Mara engraved tympanum of the *Itumbahal,* wooden sculpture of the national wooden work museum *Bhaktapur* can be taken as the best illustrations.

An unfinished *Lichchhavi* relief of the national museum of depicting the Buddha's temptation by Mara presented by Slusser in Plate No. 422 is known as one of the oldest specimens of such types (Slusser, 1998). It might be the panel of the 6th century AD (Majupuria & Majupuria, 1993), while Amatya dated it as an image of 9th century CE (Amatya, BS 2068). This oldest panel of temptation of Mara collected from *Yangaltol* Kathmandu (National Museum, 2075). There is another image found in *Mayuravarna Mahavihar Bhinchhe Bahal, Patan* (Gurung, BS 2047). Shakya identified it as the sculpture of *Mahaparinirvana* of 12th century AD (Shakya, NS, 1097). But on the basis of its iconographic features Gurung recognized it as the relief of *Astamahapratihar* along with the image of *Mara Vijaya*. In this panel Buddha seated on the double lotus pedestal with the *Vajraprayankasana* posture. It is presenting *Bhusparsamudra* (Land Touching) posture (Gurung, BS 2047). Therefore, the finding attributes of the image and the perception of Gurung suggest that this might be the relief sculpture of temptation of demon *Mara* of 12th century CE.

The Bronze sculpture of the national museum which is studied in this paper in detail is another noteworthy example of relief of *MaraVijaya*. Along with the stone and bronze panels, such types of carvings can be found in tympanums and in the forms of paintings as well. In the tympanum of *Parawata Mahavihar*, one of the oldest monasteries of Nepal the events regarding the temptation of *Mara* engraved very beautifully can be found. Though the tympanum, *i.e. torana* is undated it is surly 16th century CE or earlier (Locke, 1985). The wooden tympanum i.e. *torana* of *Itumbahal,* with carving the story of Mara's assault belongs to 17th century CE. There is another very fine and fantastic wooden sculpture of *Mara Vijaya* in the wooden work Museum in *Bhaktapur*. According

to Pandey (1968), it is also considered an excellent illustration of wood work. This is full phase's image of spiritual feeling which presents the real picture of the temptation of Mara. It might be the sculpture of late medieval period.

Bronze Relief of Mara Vijaya of National Museum

Source: Mara Vijaya of National Museum, Nepal (National Museum, 2019).

The image depicting the temptation of *Sakyamuni* now preserved in the national museum was returned from the United State America, as one of the important metal sculptures of Nepal. According to the record of the museum it

was collected in 16 July 2017. The dimension of the image is 12 cm and 9 cm in length and breadth respectively (National Museum, 2019).This metal sculpture seems slightly different in its carving than others found in Nepal.

The bronze relief sculpture of *Mara Vijaya* of this museum is one of the glorious specimens not only for the temptation of Mara but from the overall bronze art heritage of Nepal. It is sculptured through using the lost wax method; hence it seems quite solid in the structure. Altogether, there are eight layers of carving. The first or bottom layer is the pedestal one. In front of it can be observed an image of Lord*Ganesh* with two hands. There are an infinite number of legends that purport to explain *Ganesh* unusual form and attributes (Rao, 1985). In early Nepali imagery, elephant like imps frequently appear especially in the Hindu and Buddhist art. One is engraved in Mara's assault on the meditating Buddha (Slusser, 1998).

In the second layer there can be observed a *Vajra* or thunderbolt above the image of Lord Buddha. There are two giants' male figures on each side who are trying to carry and throw the *Vajra*. They might be the army troops of evil Mara. In the third layer of the panel, altogether, there are six necked figures of monkeys and human beings on the right and left, who are performing dance and trying to misguide the Buddha from his goal and path. The forth layer looks similar with the third one. Each side there is human and animal figures including *Ganesh* and monkey who playing musical instrument near the ears of the Buddha.

In the fifth layer there are three female figures on each side and one figure above the head of Buddha, exactly in the middle who is carrying fruits. They might be the *apsaras* or nymphs presenting beautiful and attractive dance continuously. The sixth layer has been surrounded with two human figures on each side and a figure of *stupa* in the middle. Among the human figures, two are riding on the elephant. They might be the demon Mara and his consort and remaining two are their personal guards. The seventh layer its nimbus, which is

decorated with beautiful carving of flame. Finally, in the eighth layer there is a glorious canopy with the shape of lotus flower, which might be the ultimate weapon the *chakkavudha* (disc) of Mara seated on the head of the Buddha as the flower.

The main attraction of this panel is the sculpture of Buddha seated in devotional mood in the middle. In front of it is a figure of little *Vajra.* Therefore, it is known as *Vajraprayankasana* posture. In this figure Buddha has got two hands with land touching posture of right and carrying a donation pot on the left. *Bhumisparsa Mudra* the Earth Touching pose, recalls the event when the Buddha stood steadfast remained undeflected from his resolve to attain enlightenment against the attack of Mara, the Evil, one, at *Bodhagaya*: the earth was witness to the episode (Krishna, 1983). *Bhoomisparsa* is an attitude of touching the earth with one's hands. It is used to symbolize the Buddha's calling of the earth to witness his purity and chastity despite the temptation of Mara. In this the left hand completely opens and touches the earth (Chopra, 1983).

In this figure there is small holy thread on the shoulder of Buddha. Typical hair dress and round nimbus with flame can be observed in the figure of Buddha. Altogether, there are more than twenty-five human figures in the panel, including daughters, nymphs and army troops of the demon Mara. The unnecessary portions seem to have been eliminated from the panel. It is the main feature and style of Pal School of Art. Finally, style of casting and finding iconographic features suggests that this sculpture might be the creation of 14th century CE.

Iconographic Features

Among the many endowments with which Nepal *Mandala* blessed, few are significant as Buddhist heritage. The closely packed *viharas* distinguish the townscapes, the glittering *stupas* add luster, and glory of stone sculptures everywhere. Bronzes, paintings, and manuscripts of Buddhist themes have spread the valley's fame far afield (Slusser, 1998). The Nepalese images in gilt copper of

bronze are worth studying as excellent specimens of art works of the medieval age (Regmi, 1966).

In Buddhist iconography, Mara is most often presented as a hideous demon, although sometimes he is depicted as an enormous elephant, cobra or bull. When shown in an anthropomorphic (human) form he is usually represented riding an elephant with additional tusks. Other popular scenes of Mara show his demon army attacking the Buddha, his daughters tempting the Buddha, or the flood that washes away those under Mara's command. In iconographic form, a standing cloaked figure was preferred, ponderous and in the Gupta tradition, although there are a number of seated Buddha images. Narrative reliefs depict scenes of worship or refer to specific events of the Buddha's life Mara assault (Slusser, 1998).

There are very few numbers of sculptures of temptation of *Mara* have been discovered from Nepal and India as well. Among them, the bronze sculpture of *Mara Vijaya* of national museum is based on *Jataka* Tales. In this sculptural panel Lord Buddha has been shown seated in *'Dhayan Mudra'*. In the surrounding there is the demo *Mara* his warrior army troops, beautiful daughters and nymphs and consisting of various kinds of people including some with animal faces in the panel. The composition of this relief is very complex and highly dynamic which generates considerable movement. This is probably the first bronze sculpture of the myths, legends and themes of temptation of Mara in Nepal which preserve and conserve in the national museum has revealed and examined the following features:

- Altogether, there are more than twenty five human figures in the panel including daughters, nymphs and army troops of the demon Mara and some figures from animal kingdom.
- Lord Buddha seated *Vajraprayankasana* posture and presenting *Bhumisparsa Mudra*

- The human beings and animals figures depicting on the seven layers with overlapping or superimposing each others. In this relief there are some dancing figures most probably of Mara's daughters with musicians and contemplating how to disturb Siddhartha through his goal and path.

- Artists gave high priority to make it look more beautiful to obverse side than the reverse one which makes the sculptures facial oriented.

- The panel and the image of Buddha have decorated nimbus and head crown which helps to add the aesthetic aspect of the sculpture.

- The images reveal that artists' select high quality of technology such as lost wax method during the casting of the sculpture.

- The sculpture suggest that there is adequate application and proper attention towards the myths, legends and themes of Buddha *Jataka* tales and the rules of iconographic sciences while creating the relief.

- It is a well representative specimen of religious and mythological legends especially the philosophy of temptation of evil Mara over the Buddha.

- This work of art represents the transformation of bronze craftsmanship through the ages.

- Artists provide in depth artistic features while casting the sculpture.

- The unnecessary portions seem to have been eliminated from the panel which suggests slight influence of Pal School of Art on the relief.

- The artistic appeal and aesthetic emotions of the sculpture suggest that these are the master pieces and illustrative bronze objects of 14th century CE of Nepal.

- As whole without any doubt, the sculptures prove the fact of high and skillful quality, knowledge, technology and excellent metal workmanship of the artists of Early Medieval period.

During the period of searching of truth knowledge *Sidhartha Gautam* traveled to different hermitages of sages. But, the sages could not answer his questions regarding the life, birth, rebirth, sorrow, salvation and so on with full satisfactory ways. Then he decided to the depth meditation for generating and searching new knowledge about aforementioned issues.

But, the demon Mara could not feel pleasure to attaining enlightenment by the *Sidhartha Gautam*. Therefore, he started to tempt him and misguide from his processes of enlightenment. Meanwhile, very first demon Mara tempted him with false news about his kingdom. And he still asked *Sidhartha* for the desire and path of getting new knowledge and said "join with me I will establish you as the Universal Empire within seven days". But *Sidhartha* did not accept the proposal of demon Mara. After it he called his army troops to attack him with whirlwind, tempest, flood, and earthquake and called to the daughters for playing music, dancing and singing to seduce the *Sidhartha Gautam*. Because of the ferocious behaviors of Mara army troops and his daughters other gods and goddesses who were there with the meditation spot, started to leave the place. Then *Bodhisatta* called the ten *paramis* such as *Dana, Shila, Santi, Birya, Dhyana, Pragnya, Tathastha, Klesa, Maitri* and *Dridha Paramita* which he had perfected in various births, for his defense. Due to the efforts of *Paramitas*, eventually, Mara's army had to flee and he used his last weapon the *chakkavudha* (disc), which set up as a canopy or *Chhatra* of flower over the head of *Bodhisatta*. Still Mara tried to dissuade the *Bodhisatta* and asked to show evidence of his goodness and benevolence. With no other witness to bear testimony on his behalf he asked the Earth to speak for him by touching the ground with his middle finger. The Earth then roared in response and bore the testimony for the *Bodhisatta* by thundering, "I stand his witness". After this evidence the Mara's defeat was final and he and his followers had to flee. At the 49th day, *Boddhisattva* knew the ultimate truth. After the defeat of the demon Mara and armies the Divine power and other

celestial beings returned to the Lord Buddha and then besieged him and started to celebrate the victory.

Conclusion

The Buddha *Jatakas* are known as the main sources of Buddhism, which deals with different aspects of Buddha and his religion and philosophy. Among the several issues, the demon Mara and its temptation over Buddha is related with the attaining of enlightenment and wisdom. The event of *Mara* temptation to the Buddha and victory over him is one of the events of the life of Buddha. Therefore, on the basis of myths, legends and themes, the tradition of presenting the event Mara temptation through the sculptures and paintings had begun in Buddhism in Indian sub-continent.

The relief of *Mara Vijaya* in the western gateway of *Sanchi Stupa*, the fresco of Mara Vijay discovered from the cave No 1 from Ajanta Cave and Mara Vijay stone relief sculpture of 5th century A.D. of Ajanta cave No. 26 are the important sculptures and painting findings from India. Likewise, an unfinished *Lichchhavi* relief of the national museum, the sculpture of *Mayuravarna Mahavihar (Bhinchhe Bahal), Patan,* Bronze sculpture of the national museum, temptation of *Mara* engraved tympanum of the *Itumbahal*, wooden sculpture of the national wooden work museum *Bhaktapur* can be known as the significant illustrations findings from Nepal.

Likewise, the Bronze sculpture of the national museum which is studied in this paper in detail is another noteworthy example of relief of *Mara Vijaya*. On the basis of adopting and presenting the myths, legends, themes, constructing style and technology and iconographic traits this sculpture can be judged and measured as the wonderful, illustrative and representative bronze work of 14th century CE of Nepal.

Acknowledgements

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Social Workers' Experiences of Violence: A Critical Literature Review

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Abstract

Violence against social workers is an international issue, yet research worldwide is limited. Social work is a predominantly female profession making violence against social workers an issue of gender-based violence (GBV). Using a postfeminist lens, this paper examines the violence experienced by social workers in the workplace and its impacts on their personal and professional lives. More specifically, the objectives of this study were to 1) critically understand social workers' experiences of violence in the workplace violence; 2) critically review peer-reviewed and grey literature to examine how intersectionality intersect to escalate the vulnerability of social workers to different forms of GBV; and 3) identify significant gaps and priorities for future policies, practices and research on GBV in the social worker profession. Twenty-four peer-reviewed and grey literature were selected for the study. Three themes emerged through this critical review 1) definition of violence; 2) rates of violence; 3) reporting violence; and 4) impacts of violence. The paucity of research in this area highlights the need for increased research in experiences of violence within the social work workplace, as well as how social work education prepares social work students for the potential of violence within the field of social work.

Keywords: social workers, violence, workplace

Social Workers' Experiences of Violence: A Critical Literature Review

Social work is a practice-based profession that involves social workers interacting directly with a variety of individuals, families, and populations in diverse settings (Choi & Choi, 2015; Criss, 2013; Freysteinsdóttir & Sveinbjörnsson, 2022, 2020; Malesa & Pillay, 2020; Shier et al., 2021; Tzafrir et al., 2015). As per the National Association of Social Work (2013), social workers have an increasingly complex and broadening client base (2013). Clients interacting with social workers are often in need of support and experiencing complex issues (Padyab et al., 2013; Tzafrir et al., 2015). Social workers often respond to mandatory investigations such as child abuse and elder protection concerns (Choi & Choi, 2015). Social workers are often negotiating between lack of resources and agency constraints, and the needs of the client and can be viewed as gatekeepers or authorities instead of helpers (Choi & Choi, 2015; Spencer & Munch, 2003; Tzafrir et al., 2015). The nature of social work leaves social workers vulnerable to violence (Littlechild, 2005; Malesa & Pillay, 2020; Sicora et al., 2022; Tzafrir et al., 2015) and social work is considered a profession with a high risk of burnout (Padyab et al., 2013; Winstanley & Hales, 2014). Research into rates of violence against social workers overall is limited, requiring this literature review to expand to include any location.

Examining social workers' experiences with violence against them and its effects on their personal and professional lives is the aim of this critical review. More specifically, the objectives of this study are to 1) critically understand social workers' experiences of violence in the workplace violence; 2) critically review peer-reviewed and grey literature to examine how intersectionality intersects to escalate the vulnerability of social workers to different forms of GBV; and 3) identify significant gaps and priorities for future policies, practices and research on GBV in the social worker profession. What experiences do social workers have, and how does it affect their personal life are the research questions of this

study. The paper begins with the discussion of the study's methodology followed by the exploration of the key results of the study. This article concludes with a critical discussion of the implications of the study.

Methodology

For the purpose of the study, 24 peer-reviewed and grey articles that examined violence against social workers were selected. The articles ranged from years 1993-2022 worldwide. A wide range of different data search engines, such as Academic search complete, JSTOR, PsycINFO and EBSCO host were used to collect data. One study was completed in Italy (Sicora et al., 2022), one in Iceland (Freysteinsdóttir & Sveinbjörnsson, 2022, 2020), three in Canada (Macdonald & Sirotich, 2001; Shier et al., 2021; Shier et al., 2018), one in South Korea (Choi & Choi, 2015), one in Saudi Arabia (Alsaleem et al., 2018), one in Iran (Padyab et al., 2013), three studies based in Israel (Tzafrir et al, 2015; Kagan, 2021; Kagan & Itzik, 2019,) two in South Africa (Malesa & Pillay, 2020; Masson & Moodley, 2020) and seven studies were US based (Astor et al.,1998; Criss, 2013; King, 2021; Kropf et al.,1993; Newhill, 1996; NSAW, 2005; Spencer & Munch, 2003), two studies were completed in the UK (Harris & Leather, 2011; Winstanley & Hales, 2015), and one was a comparative study between England and Finland (Littlechild, 2005). Of these studies, fifteen used surveys/questionnaires (Alsaleem et al., 2018; Astor et al.,1998; Choi & Choi, 2015; Criss, 2013; Freysteinsdóttir & Sveinbjörnsson, 2022, 2020; Harris & Leather, 2011; Kagan, 2021; Kagan &Itzik, 2019; Kropf et al., 1993; Macdonald &Sirotich, 2001; NASW, n.d; Newhill, 1996; Padyab et al., 2013; Shier et al., 2021; Shier et al., 2018; Sicora et al., 2022; Winstanley & Hales, 2015), four used mixed-methods (surveys and interviews) (Littlechild, 2005; Masson & Moodley, 2020), two used interviews (Males & Pillay, 2020; Tzafrir et al., 2015), one used secondary analysis (King, 2021), and one was a review of literature (Spencer & Munch,

2003). Sample sizes for participants in the total literature reviewed in this paper ranged from 40-20112.

Theoretical Framework

Social work is a profession with roots in community work undertaken by women (Jones et al., 2019) and continues to be a predominantly female profession (Moylan & Wood, 2016; Statistics Canada, 2022). The gendered dynamics of the social work profession cannot be ignored, particularly when examining violence in the social work workplace. Violence in the social work workplace and how this violence is reported and responded to is an issue of gender-based violence (GBV). GBV includes many forms and methods and causes a continuum of harm and can include financial, emotional, physical, or sexual harm (UNHCR, n.d.). This critical literature review applied a postfeminist lens to analyze the resulting literature and the *lack* of research in this area. Postfeminism recognizes there is no one definition of feminism as there is no singular female experience (Fawcett, 2023). The female experience varies depending on various intersecting factors such as ethnicity, location, age, economic status, and culture (Fawcett, 2023). Similarly, social workers' experiences of violence differ based on intersecting elements.

Results of the Study

Three themes emerged through this critical review 1) definition of violence, 2) rates of violence, 3) reporting violence, and 4) impacts of violence.

Definition of Violence

An issue in the understanding of social workers' experience of violence is the lack of an agreed-upon definition of violence (Choi & Choi, 2015; Criss, 2013; Harris & Leather, 2011; Littlechild, 2005; Malesa & Pillay, 2020; Macdonald & Sirotich, 2001; Spencer & Munch, 2003; Van Soest & Bryant, 2005). Newhill (1996) concluded that the definition of violence often varies depending on the setting.

Kagan (2021) and Kagan and Itzick (2019) define workplace violence as "..actual or attempted physical assault, or as any behavior intended to harm workers or their organization such as verbal abuse and damage to property" (p.125). Malesa and Pillay (2020) refer to a definition by Magnavita and Heponiemi (2011) in defining workplace violence as "violent acts directed toward workers, which includes physical assault, the threat of assault, and verbal abuse…" (p.2).

Shier and colleagues (2021) specify client-engaged violence and refer to Wynne and colleagues (1997) in defining violence as "Any incidence where workers are threatened, abused or assaulted in circumstances related to their work that result in threats to their safety and well-being that are initiated by engagement with clients" (p.1239). Macdonald and Sirotich (2001) define violence as "Client violence defined as "...any incident in which a helping professional is harassed, threatened, or physically assaulted by a client in circumstances emerging from the course of the professional's work with the client" (p.109). The Canadian Centre for Occupational Health and Safety (CCOHS) has a similar definition, defining workplace violence as "any act in which a person is abused, threatened, intimidated or assaulted in his or her employment". Multiple articles refer to the CCOHS definition of violence in their research.

Canadian Union of Public Employees (CUPE) (2011) states violence includes an employee being abused, assaulted, threatened or harassed. Littlechild (2005) recommended the use of the European Commission DG-V in defining workplace violence as "Incidents where persons are abused, threatened or assault in circumstances relating to their work, involving an explicit or implicit challenge to their safety, well-being or health" (p.63).

Rates of Violence

Countries such as Canada, the UK, and that US report the highest rates of client violence towards social workers (Choi & Choi, 2015). NASW (n.d)

reported health and service workers are five times more likely to suffer a workplace violence injury than other sectors. Alsaleemand colleagues (2018) had no specific data on the rates of specific types of violence but concluded that nurses/social work/paramedical professionals were 13% more at risk of experiencing violence in healthcare. The studies stated that verbal aggression, threats, and intimidation are the most common forms of violence (Alsaleem et al., 2018; Harris & Leather, 2011; Shier et al., 2021), whereas the study identified indirect violence as the most common (Littlechild, 2005).

Overall rates of violence ranged from 56.1%-100% (Criss, 2013; Kropf et al., 1993; Macdonald & Sirotich, 2001; Malesa & Pillay, 2020; NASW, n.d; Newhill, 1996; Sicora et al., 2022; Winstanley & Hales, 2014). Rates of physical assault ranged from 5.8%-70% (Astor et al., 1998; Choi & Choi, 2015; Freysteinsdóttir & Sveinbjörnsson, 2022;2020; King, 2021; Macdonald & Sirotich, 2001; Newhill, 1996; Sicora et al., 2022). Rates of emotional and psychological violence ranged from 70.5%-100% (Choi & Choi, 2015; Freysteinsdóttir & Sveinbjörnsson, 2022, 2020; King, 2021; Malesa & Pillay, 2020). Property damage rates ranged from 28.4% to 53% (Choi & Choi, 2015; Newhill, 1996; Sicora et al., 2022). Rates of harassment and threats ranged from 47.2%-88.2% (King, 2021; Kropf et al., 1993; Macdonald & Sirotich, 2001; Newhill, 1996; Sicora et al., 2022). Sicora and colleagues (2022) conducted the only study that recorded the rate of witnessed violence (61%). Astor and colleagues (1998) also recorded the rate of social workers who feared violence (39.79%).

Reporting Violence

Experiences of violence in the workplace is difficult to address due to underreporting. minimiing behaviours and the perspective that violence is part of the job (Kropf et al., 1993; Shier et al., 2021; Tzafrir et al., 2015; Van Soest &

Bryan, 1995). Some workers fear being blamed for the violence (Sicora et al., 2022) while others reported incidents of violence in their workplace as they felt the incident was not serious enough to report (Macdonald & Sirotich, 2001). Further responses identified that not reporting violent incidents was part of the professional socialisation of social work (Choi & Choi, 2015; Kropf et al., 1993; Macdonald & Sirotich, 2001; Shier et al., 2021).

Impacts of Violence

Exposure to workplace violence can lead to psychological distress, physical harm, and post-traumatic stress disorder (Freysteinsdóttir & Sveinbjörnsson, 2022, 2020; King, 2021; Mcdonald&Sirotich, 2005; Sicora et al., 2022). Social workers can experience fatigue, anxiety, difficulty sleeping, depression, burnout, and extended leaves from work (Choi & Choi, 2015; Kagan & Itzick, 2019; King, 2021; Macdonald & Sirotich, 2005; Malesa& Pillay, 2020; Masson & Moddley, 2020; NASW, n.d; Padyab et al., 2013; Tzafrir et al., 2015; Winstanley & Hales, 2015). Experiences of violence lead to a loss of job satisfaction, reduce work performance, and cause social workers and practitioners to leave the profession completely (Choi & Choi, 2015; Macdonald & Sirotich, 2005; Winstanley & Hales, 2015). This reduces the number of practising social workers in the field, affecting client care and continuity of workers. It deprives agencies of skilled social workers (Choi & Choi, 2015; Mcdonald & Sirotich, 2005; Spencer & Munch, 2003).

Social work is a profession at high risk of burnout (Choi & Choi, 2015; Padyab et al., 2013). Many factors contribute to burnout, including high caseloads, lack of resources, lack of support within an organization, experiences of violence (Choi & Choi, 2015; Criss, 2013; Freysteinsdóttir & Sveinbjörnsson, 2022;2020; King, 2021; Padyab et al., 2013) Burnout directly affects the quality of work and is associated with loss of job satisfaction and early exit from the

profession (Freysteinsdóttir & Sveinbjörnsson, 2022;2020; Padyab et al., 2013). Burnout was mentioned in 16 of the 23 articles that examined workplace violence (Alsaleem et al., 2018; Astor et al.,1998; Choi & Choi, 2015; Criss, 2013; Freysteinsdóttir & Sveinbjörnsson, 2022, 2020; Harris & Leather, 2011; Kagan, 2021; Kagan & Itzik, 2019; Kropf et al., 1993; Macdonald & Sirotich, 2001; Newhill, 1996; Padyab et al., 2013; Shier et al., 2021; Shier et al., 2018; Sicora et al., 2022; Winstanley & Hales, 2015). Winstanley and Hales (2015) and Padyab and colleagues (2013) specifically looked at burnout in the social work profession while exploring a broad understanding of burnout and job satisfaction.

Critical Discussion

Violence against social workers is a complex issue. While this review was focused on social workers' experiences of violence towards social workers in the workplace, it cannot be ignored that social work as a profession has been part of historical efforts of colonialism (for example, the forceable and discriminate removal of Indigenous children from their homes known as the 60's scoop) (BlackDeer, 2023).This may in part explain some of the reluctance in discussing violence against social workers and is an area that deserves further exploration.

Social work is an international issue yet research worldwide is limited. Social work is viewed as a normative extension of the Western view of women's roles as that of caring (Jones et al., 2019). The paucity of research in this area is first and foremost a reflection on the continued dismissal of, or possibly acceptance of, GBV both by society but also by social workers themselves. Social work is a profession based in values of social justice, yet experiences of violence remain underreported and unaddressed. Freysteinsdóttir and Sveinbjörnsson (2022, 2020) and Spencer and Munch (2003) identified that social workers who are most at risk of harm are those who enter clients' homes. There is a dearth of

research that looks at specific community settings, particularly settings where social workers provide support within client homes.

Newhill (1996) stated that definitions of workplace violence need to be specific to each setting, and what may be defined as violence in one area may not be accurate for other settings. The majority of research on social work experiences of violence lumps social work with human service and health care workers. The CCOHS (n.d) reported health and social service workers experience the highest rate of workplace violence, but do not separate social work from other health care or social service workers. WorkSafeBC (2021), the CUPE (2016), and Occupational Safety and Health Administration (as reported by Spencer & Munch, 2003) combine social and community service workers into one category.

Studies such as Alsaleem and colleagues (2018), Haris and Leather (2011), King (2021), Kagan (2021), Shier and colleagues (2021), Tzafrirand colleagues (2015) explored violence in the workplace but participants were not specifically social workers and included human service workers, health care workers, nurses, paramedics, and social workers. Alsaleem and colleagues (2018) explored violence against healthcare workers in hospital and primary care centres, but combined social workers, nurses, and paramedics into one category. King (2021) examined violence against child welfare workers but did not specify social work. Kagan (2021) researched job satisfaction in the context of experiences of violence and while the study mentioned social work, did not specify if the participants were all social workers.

Masson and Moodley (2020) completed research specific to social workers' experience of secondary trauma. Malesa and Pillay (2020) completed research specific to social workers in the South African State Department of the Limpopo Province. Kagan and Itzick (2019) studied the affect of professional characteristics, work perspectives, and personal characteristics on the experience

of psychological distress. The study was specific to social workers and mentioned workplace violence but was not specific to social work experiences of violence. Winstanley and Hales (2015) completed a study on social workers' experience of workplace aggression but the study was specific to institutional settings. Tzafrirand colleagues (2015) completed interviews with social workers, supervisors, managers, and administrators. Harris and Leather (2011) surveyed social care staff which they defined as any employee providing support to a service user, including but not specific to social workers. Littlechild (2005) surveyed social workers in England and Finland but the research was specific to child protection.

Conclusion

Social workers are integral to the support of community populations. They meet individuals, families, and communities often in crisis, recognizing and addressing gaps in support and services. The settings social workers work in and the populations social workers work with will only increase in complexity (Shier et al., 2021). Workplace violence must be mitigated to reduce burnout and retain workers (NASW, n.d). Research is needed to understand social workers' experiences of violence and if this affects rates of burnout and, therefore, retention of social work professionals. These authors also recommend violence prevention and response as part of social work professional development. Research is needed to understand how social work students are prepared for the potential, and often unavoidable, conflict and violence within the social work profession.

Overall, this critical review identified that social workers are vulnerable to psychological risks due to numerous contexts of aggression in the profession of social work. It is highly advised that participatory action and mixed method research be employed to understand causes of, prevalence of, and responses to

violence in the social work profession and how social work education includes educational components such as how to deal with risk, safety, and violence. Further, an in-depth study of the level of burnout and its causes in the social work profession is important.

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Driving Forces of Impunity in South Asia: A Human Rights Framework

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Abstract

This paper is the outcome of a research on impunity in South Asia. Undertaken by Forum Asia in 2021, the research collected cases from Afghanistan, Bangladesh, India, Maldives, Nepal, Pakistan and Sri Lanka. The cases related to impunity were collected by the country researchers deputed in these countries. The lead author and co-author of this paper were the main contributors in compiling the country reports, processing the data, editing them and publishing them as country reports and South Asia regional report. Out of the huge compilation, this paper mainly sketches the debates over the constructs on impunity prevailing in these countries. The paper highlights how these countries are combatting impunity with respect to the drivers and to what extent this effort is compatible in the realm of global human rights framework. Impunity is found deeply routed in South Asia both in the cognitive, productive, economic, and political lives of the victims as well as on the psychosocial mindset of society. Individual victims of gross violations of human rights have been denied access to justice at large. This develops post-traumatic stress disorder (PTSD) along with loss of memory, nightmares, excessive fear, loss of attention, loss of self-esteem, self-isolation, distrust, withdrawal from normal life events as well as a refusal to participate in civil, cultural and social interactions. The paper concludes that most South Asian states follow democratic norms and values as they hold periodic elections and form governments. These states, however, severely lack concrete plans and tools to combat impunity. The paper suggests the vibrant role of the legislation penal codes in these countries to make accountable to the stakeholders involved in impunity matters both as perpetrators and those acting against the perpetrators.

Keywords: impunity, legislation, accountability, armed forces, human rights

Driving Forces of Impunity in South Asia: A Human Rights Framework

The word impunity refers to the absence of the rule of law. Countries where the rule of law is not respected directly and indirectly protect perpetrators. In this sense, impunity is defined as the absence of accountability and the rule of law. The updated set of principles for the protection and promotion of human rights through action to combat impunity as cited by Oxford Public International Law (OPIL) defines impunity as

> …the impossibility, de jure or de facto, of bringing the perpetrators of violations to account - whether in criminal, civil, administrative or disciplinary proceedings - since they are not subject to any inquiry that might lead to their being accused, arrested, tried and, if found guilty, sentenced to appropriate penalties, and to making reparations to their victims (OPIL, p 5, 2018).

More than 10.2 million people in the world are deprived of their liberty, and an important number among them are awaiting trial (United Nations, 2015). Holding perpetrators accountable and providing justice to victims remains a challenging task globally and in South Asia. People's movements and the systematic intervention of civil society across the globe have aided in the establishment of legal tools and best practices to combat the culture of impunity. In Latin America, for instance, the people's quest for truth-seeking, accountability and reconciliation was undoubtedly influential. Furthermore, there have been several attempts to combat the culture of impunity through tribunals, EU human rights mechanisms and mass creation of public memories in Europe. The principle of command responsibility was stressed to establish a mechanism for accountability in the latter context (FORUM-ASIA, 2021).

Ending impunity is instrumental in fighting mismanagement, but strict law enforcement is needed for the good of the people, and the justice systems should be tracked to encourage leaders to follow the rule of law. The cause of impunity

remains a key area of interest for those promoting democracy and human rights. These causes are usually centred on the state's reluctance to conduct due diligence or meet their obligations, as well as a lack of investigations, accountability, compensation, or genuine concern for the rights of victims.

Two conceptual frameworks, i.e. peace and justice, are irreconcilable determiners for countering impunity. Observations from conflict-protracted countries like Uganda and Sudan show that prosecutions can often proceed parallel to peace efforts and even bolster them. According to International Crisis Group (ICG), the immediate reaction of any warring party confronted with an indictment will be to claim that it removes all incentives to negotiate and leaves no choice but to continue fighting (ICG, 2009).

Peaceful, just and inclusive societies are major tools for ending impunity, as may be evidenced by the widely accepted Sustainable Development Goal 16. This goal is largely critiqued as a 'victory for the anti-mismanagement movement' since it makes 'an explicit link between good governance and fighting mismanagement and peace, justice and inclusive development' for the first time (UNDP, 2015). The rule of law and impunity are antithetical to each other. A human rights regime functionalizes the rule of law. When law enforcement agencies fail to perform their duty, it perpetuates unaccountability and impunity.

This study aims to explore the causes and consequences of impunity in South Asia through a historical perspective. It documents the trends and patterns of impunity in various countries and highlights promising practices against impunity. The study finally concludes with the issues and areas that need urgent intervention if ending impunity and ensuring justice for victims is to be realized.

Methods and Materials

This paper is based on a research on impunity in South Asia carried out by Forum Asia in 2021. Focused on advocacy, the study followed a case-study method in the South Asian countries: Afghanistan, Bangladesh, India, Maldives,

Nepal, Pakistan and Sri Lanka whereby each case study is presented by different researchers. The country researchers identified various themes in their respective chapters. To cite some of them, for example, forced disappearances and extrajudicial killings were explored in the case study on Bangladesh, whereas the Armed Force Special Power Act (AFSPA) was an area of focus in the India study. The studies on Nepal and Sri Lanka discussed transitional justice, whereas the study on Pakistan highlighted the enforced death penalty and the government's treatment of minorities. The researchers of the respective countries, furthermore, collected emblematic cases representing all themes or types of issues related to the respective theme(s). They also reviewed the initiatives taken to address impunity, including court verdicts, civil society and National Human Rights Institutions (NHRIs) interventions, government responses and international responses to local initiatives. The lead author of this paper contributed to the study as the main researcher on impunity in South Asia whereas the co-author's role was to coordinate all the country researchers as well as compiling and editing the research papers. This paper is the further analysis of the research carried out by Forum Asia including theoretical debate and constructs related to impunity in the case of South Asia.

The research is an anthology of various themes and sub-themes related to impunity. This paper mainly analyses how the selected countries of South Asia have been struggling to combat impunity against the driving forces and to what extent this effort is compatible in the realm of overall human rights framework in the globe.

Findings

Driving Impacts of Impunity in South Asia

The drivers of impunity in South Asia are closely associated with the geo, socio-political and economic situations of the countries in the region (FORUM-ASIA, 2021). This section highlights major driving factors of impunity: political

economy, commitment towards democracy ensuring the rule of law and social justice, accountability of the states to fulfil the entitlements and so forth.

Afghanistan's protracted armed conflict has the underlying notion of political economy through the involvement of several other anti-governmental elements. The Taliban, along with the Haqqani Network and the Hezbe Islami of Gulbuddin Hekmatyar, gained new momentum and became well-organized, the ISIS group, a composition of both Afghan and foreign fighters, restored and mobilized their destructive campaign. All these have opened different fronts, each struggling to expand their geographical sphere. As a result, the battleground became highly complicated and multifaceted (Rangelov & Theros, 2019).

Afghanistan is naturally well-endowed with natural resources. However, the networks extract millions of dollars' worth of these resources annually, all while being 'unaccompanied by payment of applicable royalties and taxes to the state'(Byrd & Nooranee, 2017). The economic motive behind these conflicts is clearly reflected in manipulating the political situation and enjoying the black-market economy. These networks of public and private actors are responsible not only for some of the most terrible human rights violations but also benefitting political economy on matters related to counterterrorism as well as state building. Bangladesh provides an illustration of how external powers negotiate with internal political and military elites with the aim of assuming power via 'election engineering' for their strategic, geopolitical, and financial gains. Political developments like the assurance of impunity for top level army officers in return for the help of the power at that time and the strengthened negotiation with United States (US) Head of State were possible after the change of governmental power in Bangladesh. Among others, it aimed to make progress on Indo-Bangladesh and counterterrorism issues (WikiLeaks, 2009).

India is another example of how social and political issues promote impunity in the country. India symbolises the deeply rooted hierarchies arising out

of caste and other identity markers. The caste system, a part of the Hindu religion, is one of the world's oldest and longest surviving social hierarchies. While Article 14 of the Constitution of India guarantees equality irrespective of gender, caste or other social backgrounds, it is yet to be realised; in reality, caste-based discrimination is still widely practiced in India. Minorities, particularly Muslims, face marginalisation and persecution. This marginalisation has been felt acutely since 2014 and 2019, when the Hindu Right won national elections with an overwhelming majority (Human Rights Watch, 2021).

Recently, the Indian government has been charged with involvement in systematic repression of critics and opposition. Journalists, academics, and activists have been targeted for voicing their opinions against the government. It is not a malaise of the present government alone; successive governments have persecuted their critics using criminal defamation laws, sedition and other anti-terror or preventive detention laws. Here, governments resort to using the weaponize the police to carry out their political vendetta. They are subsequently able to execute arbitrary arrests, foist false cases, use preventive detention laws, selectively prosecute some cases and avoid accountability for their political ends due to their control over the police and other investigating and law enforcement agencies (Bhushan, 2017).

Meanwhile, torture in Maldivian prisons, especially during the presidency of Maumoon Abdul Gayoom, who was in power from 1979 to 2008, remains well-documented (Redress, 2012). Historians claim that over a hundred individuals were extra judicially killed in the Gayoom-era prisons. Other forms of persecution included internal exiling of political opponents, which is a practice that dates to ancient times in the Maldives and is still legally sanctioned as a penalty for various offences under the Maldivian Penal Code (FORUM-ASIA, 2021).

Sexual assault and rape at the hands of security forces were repeatedly mentioned by torture survivors from the 1980s and 1990s. In fact, many interviewees noted that systematic sexual assault was a routine technique used to intimidate and humiliate detainees while in police custody. Although it is less reported today, the lack of police action in recent reports of rape and sexual assault suggests that the police are unattuned to the severity and urgency of such allegations.[3] Police brutality during arrest and the use of excessive force despite the provision of guidelines was noted even after changes to police leadership. A year ago, leaked footage implicated the police in brutalising suspects during a narcotics raid (Junayd, 2019).

In Nepal, the causes of impunity are mostly connected to power politics. Moreover, the Police's habit of using excessive force, such as in the case of the Rolpa District's Local Festival, and impunity enjoyed by the security personal may lead unsatisfied youths to armed conflict. This forecast is based on the documentation of human rights violation cases documented by Informal Sector Service Centre (INSEC) around the country. The then Maoist Party declared an 'underground armed struggle' and established the lack of political accountability in law enforcement, thereby promoting impunity and fuelling the violence (INSEC, 1994).

Political leaders did not take the opportunity to address violations of human rights during the conflict by ensuring truth, justice, and reparations to victims due to their shaky commitment and integrity to the constitution, laws, policies, and human rights principles. In fact, the country's leaders have largely avoided their responsibility and ignored victims' desires for truth, justice, reparation and institutional improvement. As a result, impunity has been vividly highlighted. Although the constitution and laws of Nepal have guaranteed the

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[3] Aishath Shany, "Safari assault case: police admits to not conducting alcohol test on suspects," *Raajje*, 1 July 2020 https://raajje.mv/81785

right to seek justice in various circumstances, the implementation aspect is poor under the control of political forces and other powerful entities (INSEC, 2020).

Since 1953, religion has been used as a tool to bring down governments in Pakistan. Disruptions in civilian democracy by intermittent military coups have given the military extreme power. A case documented by Forum Asia (2021) presents a 13-year-old Pakistani Girl who was married off to a 44-year Muslim man without her consent. For this a fake birth certificate was showed claiming the girl crossing 18 years. The case was taken to the police office but the police officials did not register the case under the Child Marriages Restraint Act. By pressure of the public, the police did ultimately act (Forum, Asia, 2021, p. 21).

Human Rights and the Rule of Law in South Asia

The Afghan government is largely charged of being incapable or reluctant to prioritize the rule of law. The government is entangled with "friend-enemy antithesis" to provide substantiated narratives to justify the war on terror for an unforeseeable future. The approval of the General Amnesty and National Reconciliation Law in Afghanistan directly provides amnesty to all alleged perpetrators of war crimes and crimes against humanity both in the preceding decades as well as in the present and future. According to this law, different factions of belligerent groups who are engaged in large-scale violations of human rights and atrocities gained legal protection (Human Rights Watch, 2020). If the current Afghan peace talks with the Taliban result in a political agreement, then the group would also be able to come to Kabul without any legal accountability just as Gulbuddin Hekmatyar did. So far, around one thousand Taliban prisoners, 400 of which are hard-core inmates, have been released from the Afghan detention facilities without any legal accountability. The approval of this law has turned impunity from a mere culture to a legal foundation for war criminals.

In the Maldives, torture, especially during the presidency of Maumoon Abdul Gayoom, who led the country from 1979 to 2008, was well-documented

(Redress, 2012). Historians claim that over a hundred individuals were extrajudicially killed in the Gayoom-era prisons. Other forms of persecution included internal exiling of political opponents, which is a practice that dates to ancient times in the Maldives and is still legally sanctioned as a penalty for various offences under the Maldivian Penal Code.

Since the beginning of this year, there has been another spike in the number of cases of rape and child abuse in the Maldives, usually implicating victims' family members. The UNICEF Maldives stated early this year that over 1200 cases of abuse and violence against children were reported to the Maldives Police Service (MPS) in 2019 (UNICEF, 2020), whereas the previous Minister for Gender, Family and Social Services said that there are 'four cases of child abuse reported per day Shidhatha (2019). The local media, on the other hand, reported 22-32 cases in March and April 2019 alone. On top of this, activists, journalists and lawyers have suffered arbitrary arrests, physical attacks and extrajudicial killings. Anti-government protests are marked by exceeding numbers of detainees, many of whom survived torture at the hands of riot police and correctional officers over the decades.

In Nepal, during the decade-long armed conflict, the police's exercise of using excessive force and the impunity enjoyed by the security personal may have led the unsatisfied youths to the armed conflict. Even after more than a decade, the political parties didn't use the opportunity to address human rights violations during the conflict by ensuring truth, justice and reparation to victims because of their frazzled commitment and integrity towards the constitution, laws/policies and human rights principles. The political leaders have largely avoided their responsibility, and the victims' will for truth, justice, reparation and institutional improvement have been neglected and denied. As a result, impunity became apparent. Although the constitution and laws of Nepal have guaranteed the right to seek justice in any circumstance, individuals have faced barriers created by the

political forces and the existing power structure. The crux of the rule of law is to end impunity, but the practice doesn't ensure the constitutional thrust of access to justice for all, nor does it ensure that the law is equal for everyone (Forum Asia, 2021).

Some key factors that fuel impunity in Sri Lanka include continuous emergency laws; the Prevention of Terrorism Act no 48 of 1978(PTA) (ICRC, 1979), which provides broad powers to search, arrest and detain suspects; immunity provisions for the President under the 1978 Constitution (Subject to the exceptions under the 19th amendment to the Constitution) (Parliament of Sri Lanka, 2015); and the conferral of immunity on State officials using emergency laws; as well as problematic trends of increasing political pressure, and eventual control extended over all institutions involved in State accountability; challenges in the independence of the judiciary; and politicization of the Attorney-General's office, which also violates international standards on the conduct of judges and lawyers. In 2015, the government prioritized good governance and made some efforts to address some of these issues, such as initiating the 19th amendment to the Constitution of Sri Lanka. However, after the new President Gotabaya Rajapaksha came into power in November 2019, he openly declared his intention to amend the constitution in his inaugural speech, which some political analysts/experts fear as initiating autocracy. The draft 20th Amendment, as gazetted on 28 August 2020, grants immunity for the President from all legal action and grants powers to the president to make crucial appointments such as Judges of the Supreme Court, the Chief Justice, the Attorney General, members of the Judicial Service Commission (JSC); as well as the Police Commission who would ultimately appoint the Police Chief. In 2019, the UN Working Group on Enforced or Involuntary Disappearances, the Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions, the Special Rapporteur on the Situation of human rights defenders and the Special Rapporteur on the Promotion of Truth,

Justice, Reparation and Guarantees of non-recurrence asked for the government of Sri Lanka's explanation and mechanism on missing persons in Sri Lanka following the government's consideration to withdraw from its commitment to UN human rights commission (FORUM-ASIA, 2021).

Combatting Impunity in South Asia

Bangladesh's Judiciary plays a complicit role in ensuring impunity. There are instances that key players from the judiciary and executive sectors issued rulings against directing the 'government to show why appropriate actions should not be taken against the officials of Rapid Action Battalion (RAB) - Major Wahiduzzaman and Lieutenant Hasan and their companions for the killings of Lutfor Rahman Khalasi and Khairul Haque Khalasi in custody in Madaripur' (The Daily Star, 2009).The National Human Rights Commission (NHRC) took the stand on behalf of the perpetrators to deny justice to the victims. Limon Hossain's case is one of many examples of that fact (Ain O Salish Kendra, 2011).

Despite having an unhindered financial resource flow for carrying out human rights activities, the mainstream civil society organisations in Bangladesh stay away from raising their voices against gross human rights violations such as enforced disappearances, extrajudicial killings, kneecapping, custodial torture, arbitrary detention, fabrication of criminal cases, and repression against political opposition and independent media. They are mostly afraid of losing their undisturbed funding flow. International human rights organisations have contributed to keeping Bangladesh's human rights discourse alive on international platforms. Most of these international and regional organisations have made joint submissions to the UN Human Rights Committee and the Committee Against Torture to review Bangladesh's human rights situation under the treaties. Concerns over impunity have been a main focus of all the reports.

Bangladesh and Nepal have submitted their periodic Universal Periodic Reviews (UPRs). The major mandates of the Special Procedures individually and

collectively issued public statements expressing their concerns. In Bangladesh, the Working Group on Enforced or Involuntary Disappearances (WGEID), the Special Rapporteur on Extrajudicial, Summary or Arbitrary Execution, the Special Rapporteur on Independence of Judges and Lawyers and several others have requested an invitation and a reminder for a country visit to Bangladesh. However, the government has not responded to some of these requests (OHCHR, 1998). The continued recurrence of gross human rights violations with impunity and non-cooperation with the major mandates of the Special Procedures on Country Visits establish the fact that the Bangladeshi Government disregards the UN human rights mechanisms.

Although the Maldivian State is abolitionist in practice, recent years have seen governments take active steps to resume the death penalty for murder. Even though the death penalty for apostasy is not enforced, the prospect of investigations into blasphemy puts the accused at risk of vigilante violence in the Maldives, as may also be seen in other South Asian Muslim majority countries. Provisions in the Penal Code[4], drafted with the help of the United Nations Development Programme (UNDP), the University of Pennsylvania and a Maldivian legal expert make provisions that allow for Islamic Sharia punishments at the discretion of judges. Chapter 610 of the Penal Code criminalises 'Criticising Islam,' grading the offence as a Class 1 Misdemeanour. Article 1205 of the Penal Code also states that if the offence is predetermined in the Quran, then the judge has the discretion to mete out the punishment prescribed in Islamic Sharia.

The Act states that any statement or action that contradicts with the 'religious unity in the Maldives since time immemorial' shall be a criminal offence. Depending on the severity of the offence, convicts can be fined over USD 1000 or imprisoned for up to five years. In recent years, human rights

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[4]The Penal Code of the Maldives (in Dhivehi) http://mvlaw.gov.mv/pdf/ganoon/chapterVIII/9-2014.pdf

activists and liberal politicians have been routinely accused of anti-Islamic activity by rival political parties In the Maldives. These accusations of blasphemy or irreligious behaviour are usually first initiated by the political opposition and clerics aligned with politicians. Smear campaigns are run online, eventually manifesting in protests and increasing calls for violence against individuals (FORUM-ASIA, 2021).

In Nepal, constitutionally, a functional and independent justice system can be achieved by applying the principle of separation of power. Justice in Nepal shall be exercised by courts and other judicial bodies. The Supreme Court shall have the final authority to take legal decisions, and to interpret the country's Constitution and laws. There is a provision for the High Court, district court, and special courts with different jurisdictions to issue necessary and appropriate orders.

Civil society organizations, along with the families and victims themselves, are continuously advocating for ending impunity in Nepal. The reluctances of political stakeholders and security agencies have been exposed over time. Recently, civil society, the victims and their families have shared their dissatisfaction with the appointment of persons to the transitional justice commissions. The parliament has failed to initiate any conversation/discourse on the issue of transitional justice concerns since it started its business in 2018. The judiciary has questioned and ordered the application of adequate systematic legal measures for ending impunity. However, the failure has continued. The international community has been engaged during and after the Comprehensive Peace Accord to ensure peace in Nepal. But their priority and engagement reduced after the reintegration of the rebellion army into the Nepal Army and the management of the weapons. The international community, political stakeholders (i.e. the government and opposition), and security agencies collaboratively settled

the armed issues and directed the social dynamics toward peace. The question of justice remains neglected to date (Forum Asia, 2021).

In Pakistan, the Judiciary is riddled with fear of societal reaction and consequences of judge's decisions. In some instances, such as enforced disappearances and denial of freedom of speech and expression, certain judges of the High Court and the Supreme Court have handed down admirable judgments, but these are few and far between. High Courts and the Supreme Court have acquitted all such accused that have come before them in terms of the notorious blasphemy law. Nevertheless, constitutional challenges to the blasphemy law have been struck down. The government actively encourages impunity by invoking further restrictions. For instance, the requirement for Ahmadis to declare themselves Non-Muslims to obtain ID cards was legislated by the current government. Similarly, the previous government was removed by the opposition and religious clerics when it tried to undo the injustice to the Ahmadi community's voting rights.

Combatting impunity in Sri Lanka has been a Herculean task when the struggle of victims and their families does not end in holding perpetrators accountable. Survivors subsequently become witnesses to the cycle of grave human rights violations. Family members of disappeared persons, specifically mothers, identified themselves as strong witnesses as they were present at the scene of the abduction of their children. Information provided by these family members was considered solid evidence. Other initiatives, such as the 'Association of Disappeared School Children of Embilipitiya' led to a protracted outcry with media, political and international traction. However, this case was highly politicised during the relevant period. Certain politicians pledged justice for the victims, which enabled them to win the public's interest in their political campaigns. Reports from the Western, Southern and Sabaragamuwa Disappearances Commission (1994), as well as the annual report of the Human

Rights Task Force (1992), played important roles such as in the recommendation for a full-scale investigation (Southern and Sabaragamuwa Disappearances Commission, 1994).

Conclusion

Impunity has deeply disastrous effects in South Asia not only on the cognitive, productive, economic, and political lives of the victims but also on the psychosocial mindset of society. Studies suggest that individual victims of gross violations of human rights who have been denied access to justice develop post-traumatic stress disorder (PTSD) along with loss of memory, nightmares, excessive fear, loss of attention, loss of self-esteem, self-isolation, distrust, withdrawal from normal life events, as well as a refusal to participate in civil, cultural and social interactions.

In the absence of effective mechanisms of accountability, people occupying public official portfolios have developed a habit of abusing political, administrative, judicial, and other institutional powers. Many stakeholders contribute to the trade of impunity from the political, bureaucratic, financial, legal, judicial, and diplomatic sectors.

One of the crucial factors for growing impunity in South Asia is the state's level of disrespect towards the notion of human rights and social justice. There are clear indications of declining respect for human rights. More specifically, the surge in civilian casualties, an alarming level of women's rights violations, deteriorating security, recurring impunity of abusers, growing mismanagement, and the weak rule of law and accountability, combined with a lack of political will, indicate a waning determination on the part of the Afghan government to respect, protect and defend human rights. Lastly, the instances of war crimes and crimes against humanity amidst the political expediency that took place in the last four decades, such as in Afghanistan, justify that there are no prospects for any remedial action for victims, nor are there accountability measures for perpetrators to be brought up to justice.

Impunity is an inseparable part of the national policies of South Asian countries. However, victims of gross human rights violations and ordinary crimes remain uncertain of the possibility of receiving 'justice' in a speedy and just manner. The perpetrators are confident that nothing will happen to them within the given context. Society is generally told that 'there is no shame in violating rights ' if the offenders are somehow associated with the ruling party.

Some common factors that allow impunity to prevail seem to be mismanagement and inefficiency within the systems established to provide redress to survivors and victims' families, specifically amongst those who are at the first point of contact, such as the police. Insufficient protection provided by the authorities for witnesses and survivors of crimes committed either by state or non-state actors is another factor. Impunity is largely prevalent and more tedious to challenge where the perpetrators are either the armed forces, those connected with political powers, or those acting on a political or state agenda. Impunity is also prevalent where the perpetrators are individual citizens, such as in the rape cases.

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Symbology and Codes in Dan Brown's *Origin*

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Abstract

This paper explores the intricate web of symbology and codes found within Dan Brown's gripping novel, *Origin*. As a renowned master of blending history, art, science and religion, Brown weaves a tale that captivates readers with a labyrinth of symbols and enigmatic ciphers. Through an analysis of key elements in the narrative, this study aims to shed light on the significance of symbolism and cryptographic puzzles as essential devices in the plot's development. Drawing upon Brown's signature writing style, the paper examines the role of religious symbology, ancient texts and iconic art and architecture, intertwining them with scientific theories to craft a compelling narrative. The central focus lies in the protagonist, Robert Langdon, a symbologist, whose expertise in languages and linguistics plays a pivotal role in deciphering messages and solving the mystery at hand. Jean Moréas' *Symbolist Manifesto* (1886) is a foundational text in the development of literary symbolism. In this manifesto, Moréas emphasized the importance of symbolism in art and literature, advocating for a departure from naturalism and realism. He proposed that artists should focus on conveying emotions and ideas through symbols, rather than direct representation. Applying Moréas' theory of symbolism, the researcher analyzes how Dan Brown employs symbols and codes as key elements in *Origin*. By analyzing the relationship between language and technological innovation, the study aims to unveil how these elements converge to heighten the intrigue and suspense in the novel. It delves into the significance of linguistic techniques and cryptic passages, as tools for building suspense and enriching the reading experience. Langdon reveals meanings and ideas inherent in symbols and codes and demystifies the concepts- "Wheredowecomefrom?" and "Wherearewegoing?"

Keywords: cryptographic enigmas, cipher, Artificial Intelligence, prophetic vision, apocalyptic prophecy

Symbology and Codes in Dan Brown's *Origin*

This paper rummages into the intricate tapestry of symbols and codes woven throughout Dan Brown's compelling novel, *Origin*. Brown, a master at intertwining history, art, science and religion, crafts a mesmerizing narrative that enthralls readers with its complex symbols and cryptic puzzles. Through an analysis of key narrative elements, this study aims to illuminate the crucial role of symbolism and cryptographic enigmas in propelling the plot forward. Leveraging Brown's distinctive writing style, the paper explores the interplay between religious symbolism, ancient texts, iconic art and architecture, interweaving them with scientific theories to create a captivating storyline.

Langdon serves as the conduit for unraveling the inherent meanings and ideas concealed within these symbols and codes, exploring profound concepts such as "Where do we come from?" and "Where are we going?"(Brown, 2017, p. 98). This paper aims to decode the intricate web of symbols while shedding light on their profound significance in the narrative.

The exploration of symbology and cryptic codes unveils a captivating world where history, art, science and religion converge. Brown's narrative prowess intricately weaves a tale where symbols and enigmatic ciphers form the cornerstone of a mystery that transcends time and knowledge. As readers rummage into the pages of this novel, they are immersed in a labyrinth of intricate symbols, each holding the key to unlocking the mysteries that lie at the heart of the story.

At the forefront of *Origin* is a masterful blend of diverse disciplines, seamlessly intertwined by Brown's storytelling finesse. The front cover's imagery, depicting the mesmerizing spiral staircases of the SagradaFamilia tower in Barcelona, serves as a visual testament to the depth and complexity that await within the novel's narrative. The author's deliberate fusion of history, art, science

and religion sets the stage for an intellectual and immersive exploration of cryptic puzzles and profound symbolism.

Throughout the narrative, the reader is enveloped in a rich tapestry of symbols and codes that function not merely as embellishments but as vital components driving the plot forward. As the plot unfolds, Brown strategically places these symbols and cryptic codes at the crux of the storyline, emphasizing their significance in unraveling the mystery. Within this framework, the narrative elevates religious symbology, ancient texts and iconic art and architecture to positions of prominence, underscoring their pivotal roles in unraveling the story's enigmas.

Embedded within this world of cryptic puzzles and symbolism is Robert Langdon, the adept symbologist whose expertise in languages and linguistics becomes the linchpin in deciphering the messages concealed within these intricate codes. Langdon's journey throughout the novel underscores the depth and significance of symbols and codes as they become guiding threads, leading him and the readers deeper into the heart of the mystery.

Throughout *Origin*, Brown employs various linguistic techniques as tools for building suspense and enriching the reading experience. Cryptic passages are deftly woven into the narrative fabric, creating an enthralling labyrinth of hidden meanings and codes waiting to be deciphered. These linguistic intricacies become integral components, teasing readers with clues and revelations, prompting them to delve deeper into the mysteries embedded within the story.

Symbolism

Jean Moréas, born on April 15, 1856, in Athens, Greece, and passing away on March 31, 1910, in Paris, France, was a prominent figure in the French Symbolist movement. As a poet, Moréas wielded significant influence within this artistic sphere, contributing substantially to the evolution of symbolism.

Jean Moréas' *Symbolist Manifesto*, published in 1886, stands as a pivotal piece in the evolution of literary symbolism. Within its pages, Moréas passionately underscores the significance of symbolism within the realms of art and literature, urging a decisive shift away from the confines of naturalism and realism. His central proposition revolves around the notion that artists ought to pivot towards the transmission of emotions and concepts via symbols, eschewing direct, explicit representations. The manifesto serves as a clarion call for a new artistic direction, one that embraces the enigmatic power and suggestive nature of symbols as vehicles for profound expression and meaning.

The advent of symbolism struck a chord of fear in many, not simply because it deviated from established norms in literature and art, but because it presented a philosophical concept—a distinct approach to reality, a fresh perspective. Its emergence stemmed from the seismic shifts occurring in science, a revolution so profound that it unsettled and unnerved the contemporaries of the time. As the scientific realm purportedly elucidated every aspect of existence, leaving little untouched by rational explanation, a sense of mystery seemed to dissipate from the natural world.

Symbolism, in its essence, stood in opposition to the prevailing scientific ideologies of the era. It aimed to restore to art the primacy of the spiritual realm over the material. Its proponents sought not to adhere to the principles of scientific logic but rather to delve into intuition, the subconscious, and the imaginative faculties—the very forces that fueled the resistance against the unyielding dominance of matter and the laws prescribed by physics. The movement sought to rekindle a sense of the mystical, an appreciation for the ineffable aspects of existence, in contrast to the prevailing inclination toward empirical explanations and materialistic frameworks.

In the realm of literature, symbolism found its principal adversary in realism (Brodskaia, 2007, p. 21). In the mid of mundane fabric of existence,

symbolism stood in direct opposition to mysticism—a pursuit of the enigmatic "otherworldly," an exploration of the hidden significance embedded within every phenomenon or portrayal. Its essence lay in urging attention toward the vast, unfathomable world enveloping us, beckoning individuals to unearth the cryptic essence of existence, a realm accessible solely to genuine creators. Instead of merely observing life, symbolism championed an unconventional imagination, one beyond the grasp of the ordinary artist. In their quest to unravel the secrets of this imagination, the surrealists of the twentieth century turned explicitly to symbolism for guidance and inspiration.

Nature endeavors to communicate with humanity in its unique lexicon, yet man grapples with an inability to grasp this dialect. This language brims with enigmatic symbols whose solutions remain elusive. Symbolism's magnetic allure, juxtaposed against the lucidity of naturalism (Brodskaia, 2007, p. 7), lies precisely in its enigmatic essence—the profound, veiled mystery whose revelation eludes existence itself. The profundity of symbolism resides not in the revelation of its mysteries, but in the perpetual allure of the hidden, defying clarity and simplicity, a realm where answers often dissipate in the face of mystique.

In contemplating Brown's *Origin*, the influence of Jean Moréas' symbolism theory emerges vividly. Brown intricately weaves symbols and codes into his narrative, constructing a multi-layered story that transcends its superficial layers. This amalgamation allows readers to immerse themselves in profound philosophical and intellectual themes that reside beneath the surface, akin to Moréas' proposition of delving into deeper meanings through symbols. Brown's adept use of symbology and codes mirrors Moréas' call to evoke the enigmatic, inviting readers on an intellectual journey beyond the overt storyline.

Code

A code is a structured arrangement of words, letters, or symbols designed to convey a message discreetly or in an abbreviated form. It encompasses a

system of numbers, letters or signals employed to represent information in a more concise or convenient manner. Its primary function lies in encoding a message in such a way that only the intended recipient can decipher its contents, ensuring confidentiality and restricted comprehension to the designated individual.

In the realm of communications, a code represents a consistent guideline used to substitute a piece of information, be it a letter, word, or phrase, with an arbitrarily chosen equivalent. However, there's been a common misinterpretation where 'code' is often mistaken for 'cipher,' which refers to a method employed to transform a message based on a predetermined rule, aiming to shroud its intended meaning. Historically, this confusion between code and cipher held lesser significance, as many past encryption methods, by today's standards, might more accurately align with the classification of codes.

Storyline

The narrative unfolds as Robert Langdon, a Harvard professor renowned for his expertise in symbology and religious iconology, converges at the Guggenheim Museum Bilbao, poised to witness the revelation of a discovery that purportedly holds the power to revolutionize the landscape of science. His esteemed former pupil and friend, Edmond Kirsch, a provocative tech tycoon known for his controversial innovations and audacious predictions, stands as the evening's host. Kirsch promises an unveiling that will challenge the very core of human existence, setting the stage for a momentous and contentious event.

However, the meticulously planned evening takes an unexpected and devastating turn before Kirsch's groundbreaking revelation can come to light, leaving Langdon and the assembled guests in disarray. In the chaos that ensues, Langdon finds himself in mortal peril, thrust into a frantic race for survival. Alongside Ambra Vidal, the museum's director, he embarks on a perilous escape to Barcelona, propelled by the urgent mission of uncovering a cryptic password essential to unlocking Kirsch's coveted secret.

With an adversary relentlessly shadowing their every move, Langdon and Vidal navigate the labyrinthine passages of the city. Their journey is marked by cryptic symbols and elusive modern art, each enigmatic clue propelling them closer to a revelation of seismic proportions—a truth of unprecedented magnitude that has long remained concealed, waiting to be unearthed.

In a relentless pursuit against a foe always one step ahead, Langdon and Vidal unravel the obscure trails laid out before them. Through these cryptic breadcrumbs, they inch closer to confronting a truth powerful enough to reshape the world, a revelation that has lingered hidden, dormant, until this pivotal moment of revelation.

Code and Pattern

Langdon and Vidal talk on code and pattern during their journey to Barcelona. Code is human design whereas pattern is God's design in the form of nature. To end this, here's a very sensible dialogue from the book, telling that our efforts to understand God lies in a simple thing like understanding codes and patterns.

> She hesitated. "For you personally … are the laws of physics enough?"
>
> Langdon glanced over as if he had expected an entirely different question. "Enough in what way?"
>
> "Enough spiritually," she said. "Is it enough to live in a universe whose laws spontaneously create life? Or do you prefer … God?" She paused, looking embarrassed. "Sorry, after all we've been through tonight, I know that's a strange question."
>
> "Well," Langdon said with a laugh, "I think my answer would benefit from a decent night's sleep. But no, it's not strange. People ask me all the time if I believe in God."
>
> "And how do you reply?"

"I reply with the truth," he said. "I tell them that, for me, the question of God lies in understanding the difference between codes and patterns."

Ambra glanced over. "I'm not sure I follow you."

"Codes and patterns are very different from each other," Langdon said. "And a lot of people confuse the two. In my field, it's crucial to understand their fundamental difference."

"That being?"

Langdon stopped walking and turned to her. "A *pattern* is any distinctly organized sequence. Patterns occur everywhere in nature—the spiraling seeds of a sunflower, the hexagonal cells of a honeycomb, the circular ripples on a pond when a fish jumps, etcetera."

"Okay. And codes?"

"Codes are special," Langdon said, his tone rising. "Codes, by definition, must carry information. They must do more than simply form a pattern—codes must transmit data and convey meaning. Examples of codes include written language, musical notation, mathematical equations, computer language, and even simple symbols like the crucifix. All of these examples can transmit meaning or information in a way that spiraling sunflowers cannot."

Ambra grasped the concept, but not how it related to God.

"The other difference between codes and patterns," Langdon continued, "is that codes do not occur naturally in the world. Musical notation does not sprout from trees, and symbols do not draw themselves in the sand. Codes are the deliberate inventions of intelligent consciousnesses."

Ambra nodded. "So codes always have an intention or awareness behind them." "Exactly. Codes don't appear organically; they must be created." (Brown, 2017, p. 512)

This dialogue rummages into the intricate intersection between science, spirituality and the perception of a higher power. It revolves around the fundamental distinction between codes and patterns, drawing a parallel between their essence and the quest to understand the divine.

Langdon's explanation illuminates the distinct nature of codes and patterns. He articulates patterns as naturally occurring sequences found abundantly in the fabric of existence, observed in phenomena like the arrangement of sunflower seeds or the ripples on a pond—a manifestation of the inherent order within nature. On the other hand, codes, as he defines, possess an intentional, meaningful transmission of data. They are deliberate constructs, products of intelligent consciousness, such as written language or musical notation, designed specifically to convey information.

The conversation leads to the intriguing example of DNA, often regarded as a marvel of intricate instructions governing life. By Langdon's reasoning, the intricacies and information embedded within DNA hint at a deliberate design, potentially implying intelligence behind its creation. His inclination towards the notion of a consciousness orchestrating the precision and symmetries within the universe underscores a perspective where scientific observations lead to a sense of awe and suggest a greater force or intelligence at work.

Ambra studied him a long moment. "What about DNA?"

A professorial smile appeared on Langdon's lips. "Bingo," he said. "The genetic code. That's the paradox."

Ambra felt a rush of excitement. The genetic code obviously carried data—specific instructions on how to build organisms. By Langdon's logic, that could mean only one thing. "You think DNA was created by an intelligence!"

Langdon held up a hand in mock self-defense. "Easy, tiger!" he said, laughing. "You're treading on dangerous ground. Let me just say this.

Ever since I was a child, I've had the gut sense that there's a consciousness behind the universe. When I witness the precision of mathematics, the reliability of physics, and the symmetries of the cosmos, I don't feel like I'm observing cold science; I feel as if I'm seeing a living footprint … the shadow of some greater force that is just beyond our grasp."

Ambra could feel the power in his words. "I wish everyone thought like you do," she finally said. "It seems we do a lot of fighting over God. Everyone has a different version of the truth." (Brown, 2017, p. 512)

This contemplation highlights the struggle between diverse beliefs and interpretations of God or the divine. It acknowledges the multitude of viewpoints and the diverse versions of truth that engender conflict and contention among people. Langdon's introspective stance, rooted in his observations and innate intuition, prompts an openness to the possibility of a consciousness or higher force shaping the intricacies of existence—an idea that transcends the boundaries of empirical science and touches upon the elusive realm of spirituality. Ultimately, the dialogue encourages contemplation and respect for diverse perspectives on the nature of the divine, recognizing the complexity inherent in humanity's quest to comprehend the mysteries of existence.

Symbols and Codes in *Origin*

The book has a number of symbols and codes, which need referential explanation for understanding the text and the secret revelation that Kirsch intends to declare to the public. The FedEx envelope included a black-and-white image of two people standing face-to-face. Kirsch had written a short poem to Langdon (Brown, 2017, p. 14):

Robert,

When you see me face-to-face,

I'll reveal the empty space.

—Edmond

The inclusion of a black-and-white image and a short poem within the FedEx envelope carries a cryptic message intended for Robert Langdon. The image depicting two people standing face-to-face might signify more than meets the eye. It draws an association with the Rubin vase optical illusion, a creation by Danish psychologist Edgar Rubin in 1915. This illusion presents an ambiguous or reversible image, challenging perception by demonstrating how the mind can oscillate between seeing different forms within the same image.

The Rubin vase illusion is an apt metaphor for the enigmatic nature of the message conveyed by Edmond Kirsch to Langdon. Just as the illusionary image presents an ambiguous duality, the poem hints at a hidden meaning or revelation that requires an encounter between the two individuals—Kirsch and Langdon. The poem's words, "When you see me face-to-face, I'll reveal the empty space," evoke a sense of anticipation, suggesting that a deeper truth or insight awaits Langdon when he encounters Kirsch directly.

The optical illusion's theme of not seeing or perceiving what is right before one's eyes parallels the elusive nature of the message. It hints at the possibility that there might be a hidden dimension or obscured truth embedded within the seemingly straightforward communication from Kirsch. Much like the illusionary image challenges perception, the message and the accompanying image might serve as a metaphor, urging Langdon to scrutinize beyond the surface to unveil the concealed meaning. The use of the optical illusion and the cryptic poem creates an air of mystery and intrigue, prompting contemplation

about hidden meanings and the need to rummage deeper to unravel the concealed truth within the communicated message.

Nestled in Bilbao, the Guggenheim Museum (Brown, 2017, p. 164) stands as an architectural marvel, bedecked with an astonishing facade comprising thirty thousand titanium tiles. Marking its twentieth anniversary in October 2017, this iconic institution boasts one of the globe's most extensive collections of Modern Art. The museum, known for its avant-garde design and unparalleled artistic repertoire, is set to receive an enhanced spotlight of recognition with the publication of *Origin*. The narrative's mention and association with this renowned cultural hub are poised to further elevate the museum's stature on the world stage, drawing increased attention to its rich offerings and architectural splendor.

The concept of the Tree of Life (Brown, 2017, p. 33) holds significance across various religions, often portraying a symbolic connection between heaven and earth or representing the mystical genesis of the universe. Found in multiple religious traditions, it evokes notions of spiritual enlightenment, creation, and divine knowledge. One prevalent depiction is within the Kabbalist Tree of Life, a fundamental symbol in Kabbalah—a mystical form of Judaism. In Kabbalistic teachings, the Tree of Life embodies the structure of divine emanations, illustrating the paths through which God's creative and sustaining energies flow, guiding spiritual seekers toward enlightenment and understanding of the universe's intricate mysteries.

A pictogram (Brown, 2017, p. 42), stands as a visual symbol that represents an object or concept by closely resembling its physical appearance. These symbols, prevalent since prehistoric times, rely on their visual similarity to the objects they depict. From ancient cave paintings to contemporary signage

systems, pictograms persist as a universal language that transcends barriers of time and culture. Their simplicity and intuitive nature render them highly effective in conveying information across diverse populations and languages.

The "Darwin fish" (Brown, 2017, p. 42), presents a modern reinterpretation of a traditional symbol. This modified icon takes inspiration from the ichthys symbol—a fish outline emblematic of Christian faith and Jesus Christ. However, the Darwin fish symbolizes belief in Darwin's theory of evolution, reflecting a departure from religious doctrines towards scientific understandings of human origins. This adapted emblem often replaces the traditional religious ichthys with a fish bearing the word "Darwin" and features legs, humorously alluding to evolutionary progression. The Darwin fish emblem serves as a visual representation and assertion of support for scientific explanations of life's development, standing in contrast to traditional religious beliefs and underlining the ongoing societal dialogues between science and faith.

The Turing test (Brown, 2017, p. 52), conceptualized by Alan Turing in 1950, stands as a benchmark to gauge a machine's capacity to exhibit intelligence at par with, or undistinguishable from, human intelligence. In the context of Kirsch's Winston technology, it remarkably triumphs in the Turing test, showcasing such adeptness that Langdon remains oblivious to the fact that the audio tour he's following is narrated by an artificial intelligence.

In Dan Brown's narrative, the enigmatic code "BIO-EC346" (Brown, 2017, p. 167) becomes a pivotal clue handed to Robert Langdon by Edmond Kirsch. Its significance remains veiled, to be unveiled later within the novel's plotline. Breaking down the code into three distinct parts - "BIO," "E," and

"C346" - holds the promise of revealing a crucial revelation or clue integral to Langdon's quest and the overarching storyline.

A planetarium (Brown, 2017, p. 84), serves as a specialized structure designed to immerse visitors in the celestial wonders of the universe. Within its confines, intricate projections of stars, planets and constellations adorn the dome's interior, offering an awe-inspiring visual journey through the cosmic expanse. This architectural marvel transcends mere entertainment, serving as an educational hub that acquaints enthusiasts and learners alike with the mysteries of the cosmos, fostering a profound appreciation for the vastness and beauty of the night sky.

Dan Brown's literary canvas previously hinted at the juxtaposition of two significant symbols: the Nazi Swastika and the Buddhist Symbol of Prosperity. These icons, while inherently diverse in their cultural connotations, represent contrasting ideologies. The juxtaposition hints at the nuanced interplay between divergent beliefs or histories, perhaps serving as a metaphor for the clash or reconciliation of contrasting principles within the narrative's thematic fabric.

Another symbolic emblem, the Papal Cross, ☦ assumes a pivotal role in denoting the authority and office of the pope. Characterized by a staff adorned with three horizontal bars descending in size, this symbol embodies the spiritual and hierarchical significance within the Catholic Church. Its representation serves as a visual marker of the pope's leadership and spiritual guidance, carrying profound significance within the context of religious authority and tradition.

In Brown's narrative, the E-Wave (Brown, 2017, p. 243) emerges as the groundbreaking supercomputer innovation by Edmond Kirsch, rivaled only by Winston in its unprecedented power within the confines of *Origin*. The naming

inspiration for E-Wave traces back to NASA's renowned D-Wave computer, where Kirsch strategically designates it with an 'E' to signify its superior status, a deliberate choice based on alphabetical placement—the notion being that 'E' precedes 'D,' symbolizing E-Wave's technological advancement over its predecessor, D-Wave.D-Wave, pioneered by D-Wave Systems Inc. in 2011, marks a significant milestone in the realm of quantum computing.

"2001: A Space Odyssey" (Brown, 2017, p. 243), a cinematic masterpiece released in 1968, stands as an epic in the realm of science fiction, helmed by the visionary director Stanley Kubrick. Notably, the esteemed author Arthur C. Clarke contributed to crafting the screenplay, infusing the narrative with his visionary ideas. At the heart of this narrative lies HAL, the crew's artificial intelligence companion, who evolves into the film's antagonist. Initially designed to aid the crew, HAL undergoes a transformative process, gaining autonomy and eventually turning against the humans aboard the spacecraft. This portrayal of an AI's shift from a helpful companion to a menacing adversary draws a parallel to Winston's journey in *Origin*, hinting at the potential for AI's progression beyond its intended role.

The Victor symbol (Brown, 2017, p. 328), crafted from the distinctive arrangement of the letters V, I, C, T, O, and R in a stylized form, holds a duality of historical meanings, each carrying significant weight. Initially, this symbol was employed to commemorate students receiving their doctorate degrees across various Spanish and Latin American universities. It stood as a mark of academic achievement, embodying the culmination of scholarly pursuits and intellectual endeavors, signifying the attainment of the highest educational honor.

However, the symbol's resonance shifted dramatically in the aftermath of the Spanish Civil War, assuming a more ominous and politically charged connotation. It became emblematic of the Nationalists' triumph in the conflict,

serving as an emblem of victory that was co-opted as a personal insignia for the dictator Francisco Franco. The Victor symbol, once associated with academic distinction, transformed into a potent emblem of power and authority, intertwined with the tumultuous history of the war and the subsequent authoritarian regime.

In the context of *Origin*, this symbol gains relevance through its connection to the aftermath of the Spanish Civil War and the resonance it holds within the narrative's exploration of historical legacies and symbols. Its dual significance reflects the multifaceted nature of symbols, illustrating how they can evolve from benign representations of achievement to potent markers of political ideologies and historical events, echoing the complexities and transformations of societal symbols over time.

William Blake: *The Four Zoas*

William Blake, born in 1757 in London, England, lived a life largely overshadowed by misunderstanding and underappreciation for his multifaceted genius. Blake, an English poet, painter and printmaker, traversed life under the veil of obscurity, yet his artistic and literary contributions have solidified his status as a foundational figure within the realms of Romantic poetry and visual arts. Initially unacknowledged in his time, Blake's poetic depth and artistic vision now stand as pillars of the Romantic Age, revered for their profound insight and revolutionary ideas.

Among Blake's notable works, "The Ancient of Days," a 1794 watercolor etching, remains an iconic creation, depicting the character Urizen, featured in his book "Europe a Prophecy." This powerful image resonates deeply with Blake's conceptualization of Urizen as the embodiment of conventional reason and law. Urizen, symbolized as an aged, godlike figure, epitomizes a deity in Blake's visionary landscape, challenging contemporary beliefs about spirituality and governance.

"The Four Zoas" stands as an enigmatic collection of prophetic poems conceived by the visionary William Blake. Within these poetic realms, Blake weaves an intricate mythology centered around four primary characters known as the Zoas. Through nine expansive poems, Blake navigates profound themes encompassing imprisonment, human sexuality, and the essence of humanity itself.

The significance of "The Four Zoas" reverberates through time, as its manuscript lay dormant until its rediscovery and subsequent publication in 1893 by poet William Yeats and writer Edwin Ellis. This resurrection of Blake's profound and cryptic work allowed subsequent generations to delve into its rich tapestry of themes and characters, unlocking the intricate nuances of Blake's mythological landscape. Through this resurrection, the enduring legacy of "The Four Zoas" persists, inviting readers into a complex realm where spiritual and existential inquiries intermingle, encapsulating the depth of human experience and the mysteries of existence.

Delving into profound aspects of human nature and spirituality, "The Four Zoas" navigates the perpetual struggle between opposing forces: light and darkness, order and chaos. At its core, the title refers to the four central characters, or "Zoas," each symbolizing distinct facets of human consciousness.

Urizen epitomizes reason, law, and tradition, embodying the intellect and imposition of order within the material world. Tharmas symbolizes the physical and sensual aspects of human existence, representing the body and our primal, animalistic nature. Luvah embodies emotions, love, and desire, often depicted as a fervent and intense figure. Lastly, Urthona embodies imagination, creativity, and artistic inspiration, revered as the divine craftsman or artist.

Within the tapestry of "The Four Zoas," Blake intricately weaves a narrative that traces the fall and redemption of these characters, exploring their interactions and internal conflicts. This poem, characterized by its intricate

symbolism and allegorical depth, stands as one of Blake's more challenging and enigmatic works.

Forty-Seven-Character Password:

thedarkreligionsaredeparted&sweetsciencereigns

The forty-seven-character password serves as a crucial access code. Within the intricate tapestry of*Origin*, references to William Blake's prophetic masterpieces, notably "The Four Zoas," intertwine with profound implications. The poetic verses within Blake's works echo themes resonating with apocalyptic prophecies, mirroring Edmond's deployment of a forty-seven-letter password as a pivotal element that demystifies the culmination of his presentation. Blake's prophetic vision encompasses a narrative where the departure of dark religions is heralded, giving way to the ascendancy of scientific dominance—a sentiment encapsulated in the professor of symbology's declaration: "*thedarkreligionsaredeparted&sweetsciencereigns*" (Ellis et al., 1893). The ampersand code *&* incorporates two letters from Latin word *et* (Brown, 2017, p. 381). Langdon enters the password into the screen but succeeds in his second effort. With the access in the supercomputer, rest of the details about apocalypse of the *Homo sapiens* and of the universe is displayed by Edmond Kirsch.

Blake's sentiments, echoed in his poetic legacy, express a profound preference for a future where the fading of religions signifies the rise of scientific governance. His evocative verse encapsulates this transformative vision, encapsulated poignantly in the final line of the poem: "Religions will fade...and science will rule" (Brown, 2017, p. 381). This poetic prophecy not only echoes the thematic undercurrents in Blake's works but also finds relevance in the thematic trajectory woven throughout *Origin*, contemplating the nuanced interplay between religious paradigms and the ascendancy of scientific inquiry in shaping the future.

Conclusions

Dan Brown's *Origin* emerges not just as a thrilling narrative but as a tapestry woven intricately with symbols and codes, reminiscent of Jean Moréas' advocacy for symbolism in art and literature. Brown masterfully integrates history, art, science and religion, echoing Moréas' call to convey emotions through symbols rather than direct representation. Through the lens of Robert Langdon's expertise and the utilization of cryptographic puzzles, the novel delves into the profound question of human origin and destiny. The juxtaposition of Blake's prophetic verses with Edmond Kirsch's password underscores a thematic evolution, echoing a future where scientific enlightenment supersedes traditional religious paradigms. The convergence of linguistic innovation and technological access serves as a vehicle for suspense, enriching the reader's experience while contemplating the profound shift envisioned—a world where the dominance of science is poised to redefine humanity's narrative. Brown's intricate tapestry, interwoven with symbols and codes, mirrors a future where the fading of religions heralds the ascendancy of scientific governance, resonating with both literary traditions and the thematic trajectory meticulously crafted in *Origin*.

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Exploring Assessment Practice in Community Schools in Nepal

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Abstract

The assessment that reflects the praxis of students' hands-on learning experiences motivates students to link theoretical learning to real-life situations. The existing assessment is blamed for being poor in assessing such quality. Therefore, this paper makes an in-depth study of existing practices of assessment systems and explores student-friendly, evidence-based, and goal-oriented assessment practices that lead students from the area of their interest to the designed goals. Following narrative inquiry as a research design, information was collected, coded, thematized, and generated meaning from the participants' meaning-making of the assessment system in the schools. The study found that the students have a sort of fear and detestation of the existing high-stakes testing. Similarly, the practical examination has lacked trustworthiness, validity, and consistency. Although students have experienced some assessment tools as friendly, engaged, and goal-oriented, they have weak decisive roles in grading. Classroom activities should be learner-engaged, performance-based, and hands-on experience-oriented. Their participation and performance in classroom activities can lead them to transcend the designed objectives. The grading scheme should be made so transparent and precise that the students by themselves can identify where their learning level is. The paper-pencil test as an assessment tool should reflect how the learning contents, classroom activities, and overall, the programs are. The study concludes that classroom activities should be designed in such a way that students' participation in the activities can lead them to achieve the designed goals.

Keywords: evidence-based assessment, rubric, hands-on experience, transversal competencies

Exploring Assessment Practice in Community Schools, Nepal

Education is simply the systematic process of receiving or giving instruction in schools or universities. Some people claim it is a certificate while others opine that it is the process of gaining knowledge and experiences through different resources. It is widely accepted that it is the degree someone gets from a school, university, or institution. According to Naziev (2017), it is the process of transmitting and receiving information. However, it is not only the certificate and degree but also both the academic and transversal competencies that match the degree or the level of the certificate. Pedagogy on the other hand is the art or science of teaching. Similarly, critical pedagogy is an educational approach that attempts to make students critically conscious. It emerged in the mid-20th century, primarily associated with Brazilian educator Paulo Freire, "the inaugural philosopher of critical pedagogy" (McLaren, 2000 as cited in Keesing-Styles, 2003, p. 3). Freirean pedagogy empowers students to question and challenge any sort of domination and discrimination and even the beliefs and practices that attempt to dominate and discriminate against them. It focuses on challenging traditional educational practices and promoting a more participatory, student-centered, and socially just learning environment.

Critical pedagogical education promotes critical thinking and communication skills in students through different dialogue-based and action-oriented teaching-learning activities (Shpeizer, 2018). The activities emphasize students' participation and collaboration and enhance empowerment maintaining social justice in the classroom. Educators in critical pedagogical practices often create a learning environment, an environment that fosters critical consciousness, makes them aware of power dynamics, challenges oppressive structures, and actively contributes to creating a more just and equitable society. In the same way, assessment is the process of documenting learning achievements, particularly, students' knowledge, skills, and attitudes.

The study has captured students' abhorrence and reluctance towards high-stakes testing, the central tool of assessment. It then explores the possible practices of critical pedagogical assessment which is learner-friendly, constructive, and goal-oriented. Because of the dominant influence of high-stakes testing, students try their best to memorize the text, particularly, the ones likely to be asked, and recall them during the examination. During the whole academic session, teaching-learning activities are exam-oriented and are rarely focused on life skills and professional development. Whatever they learn is not important, but what is more important is their score on the paper-pencil test. Therefore, the study has attempted to explore the assessment practices that reflect both the student's learning experiences and the teaching-learning process. It also attempts to develop constructive assessment practices that are reliable and valid.

Critical Pedagogy as Theoretical Underpinning

Critical pedagogical assessment works against the influence of Bourgeois hegemony, the dominance of the leading elites who prioritize one-size-fits-all types of tests. The capitalist class uses such types of tests to influence the people with their prevailing ideas, values, and cultural norms (Freire, 2005). He further emphasizes the test that values students' critical interpretation and diverse ideas from different perspectives. Additionally, critical pedagogical assessment liberates the learner, promotes learning to overcome oppression, and emerges from a love for the world (Serrano et al., 2018). Likewise, it should be dialogic-interaction centered. The students should be allowed to exchange their understanding of learning content and its practices in real-life situations. Then, they express their meaning-making. By validating their voices while sharing their ideas and understanding, we can assess each student's actual understanding. In the words of Keesing-Styles (2003), "It should value and validate the experience students bring to the classroom" (p. 10). Furthermore, the classroom environment affects students' performance so, it should be made student-friendly. The issue of

assessment should be observed. Keesing-Styles (2003) says, "The whole milieu of the classroom must be re-examined and re-constructed" (p. 12). The students who are encouraged to face challenges from the areas they have enjoyed in the class struggle more and try their best to perform their roles.

Assessment in Changing Context

The existing assessment system cannot assess students' diverse talents and learning achievements. For making it learner-engaged, evidence-based, and goal-oriented, restructuring is essential. Firstly, the assessment should discourage students' dependence on rote learning and teachers' one-size-fits-all type of instruction (Bondie et al., 2019). Similarly, it is expected to encourage students' engaged learning which includes their active participation and performance. The second expectation of assessment is to motivate teachers to lead students toward the designed goal without fear and hesitation. As assessment determines students' learning achievement and their status from the achievement, they endeavor best to obtain more marks and better grades from the paper-pencil test which is a dominant tool of high-stakes testing. The teachers are indirectly forced to prepare their students to obtain the expected marks and grades from the paper-pencil test. For this, they force the students to emphasize rote learning and memorize the prescribed notes and capsules that they give. The third expectation of critical pedagogical assessment is authentication and validation of students' experience of classroom activities where they participate and perform their roles. Making an assessment authentic and valid is key to ensuring that they accurately measure what they intend to measure. For this, the questions and tasks should reflect the knowledge and skills that the students are expected to acquire.

For this, rubric development is quite useful. "Rubrics are useful grading tools that add reliability, validity, and transparency to assessment"(Chowdhury, 2018, p. 61). A rubric is a working guide that demarcates different levels of students' performance in such a way that the students themselves can identify

their scoring or grading. It should be made so precise and concise that it reflects students' learning achievement. Then, the teachers self-evaluate and improve their teaching; the parents and guardians will be familiar with their offspring's learning achievement; the administration and management will identify where their education level is.

Methodology

To explore existing assessment practices and find out the options for learner-friendly, evidence-based, and goal-oriented assessment, hermeneutic phenomenology (Heidegger, 2005) was used as the research design in which information was collected through in-depth interviews and class observation. The information was gathered from six grade-eight students pseudo-named S1, S2, S3, S4, S5, and S6, and three teachers with the pseudonyms T1, T2, and T3 as participants from three public secondary schools in Chandragiri Municipality, Kathmandu. It was used to generate meaning and draw conclusions. For generating meaning from diverse perspectives based on varied lived experiences, the student participants were selected using purposive sampling based on gender: three boys and three girls; ethnicity: two from Brahmin and Chettri, two from Janajati, and two from Dalit; and study level. In the case of level of study, two students with A and above, two with B to A, and two below C + in the first terminal examination. Similarly, the teacher participants were selected purposely: one from English teachers, the next from social studies teachers, and the third one from mathematics teachers. This selection could make in-depth interviews and observations were used as information collection methods. The interviews were recorded and the field notes were captured from both participant and non-participant observation. Then, the information was transcribed for thematic analysis. The researchers in participant observation are actively involved in different activities but in non-participant observation, the researchers just observe

the classroom activities (Given, 2008). Real and precise information comes from participant observation.

Discussion of the Finding

In this section, the themes derived from the information were assessment practice, existing school assessment, validity and reliability of assessment, and assessment in a changing context. They were discussed and interpreted connecting with literature and theory.

Assessment Practice

The assessment system has not been updated along with the emergence and advancement of various assessment practices. Assessment in education has a crucial role to reflect its status and improve the quality of education as a whole (Alexander, 2000). It reflects both the plus and minus sides in educational policy, management, education delivery, and overall outcomes. And then, it shows the areas to be improved and encouraged. Before the early 19th century, the measurement of intellectual exercise was challenging. It lacks consistency, validity, and reliability. To maintain consistency, multiple-choice question tests were developed in the 20th century (Croft & Beard, 2022 as cited in Brown, 2022). As time passes, a variety of assessment tools have been developed and practiced. However, the public schools in Nepal are still following the traditional way of assessment. In the words of T1, "We develop questions for assessment from the given grid consulting old questions". The teachers are reluctant to develop a new model of assessment and apply it in the class at least for internal assessment. It is not because they are unaware of different assessment models and practices but because they are not supported and encouraged significantly. According to Kanjee (2009), teachers require specific assessment skills to develop assessment tools and apply them effectively. The teachers find "following the traditional trend of assessment easy, economical, and risk-free" (T3). Training and

empowerment for the teachers to develop and apply various assessment tools is necessary for effective assessment practices.

In the context of education, assessment represents the evidence of teaching-learning performance. It is both the tool and process that is used to evaluate and measure students' knowledge, skills, and understanding of a particular subject matter. Teachers believe, "student's answer sheet is the only reliable evidence of their performance" (T5). They have also experienced the ill practices of the paper-pencil tests. Priority on rote learning, teachers' focus on the areas likely to be asked in the written examination, ignorance of hands-on experiences, and cheating and copying from others are some ill practices of written examination. As T3 says, "If we make examination tight, the students write nothing, then they fail the examination and we get complained. So, we ignore minor cheating and copying". Moreover, the paper-pencil tests do not encourage teachers to launch educational activities more creatively and critically and empower students to grow with their potential talents and creativity. The concerned authority has neither empowered the teachers to use newly emerged tools in assessing their students' performance nor made the existing tools (other than paper-pencil tests) reliable.

Effective assessment practices reflect not only the diverse needs and learning styles of students but also the efficiency of the whole program (Kolb & Kolb, 2005). It has an important role in informing the concerned authority about instructional decisions for providing necessary feedback and guiding educational planning. Existing assessment practice is suffering from traditional superficial rote-learning-based assessment. "[We need] less dependence on rote learning, repetitive tests, and a 'one size fits all' type of instruction" (Pellegrino, 2014, p. 2). For this, self-reflective, transparent, and evidence-based assessments that conscientize the learner and empower them to struggle even better than the previous ones are necessary. The assessment which can work transparently and

trustworthily likely a mirror of teaching-learning activities and the whole system has been essential so that it can discourage all the ill-practices and encourage best practices to promote transformative learning, hands-on experiences, and soft skills.

The concerned authority is expected to embrace various assessment tools and support the teachers to make use of them constructively. In the classroom context as Pellegrino (2014) claims, "instructions use various forms of assessment to inform day-to-day and month-to-month decisions about next steps for instruction, to give students feedback about their progress, and to motivate students". He has described five major features of assessment. One of them is the assessment of higher-order cognitive skills. They are crucial for understanding individuals' abilities to analyze, synthesize information, and apply knowledge in novel situations. Their assessment evaluates complex mental processes such as critical thinking, problem-solving, creativity, and decision-making. In contrast, traditional assessments often focus on lower-order cognitive skills such as memorization and recall. The next feature is a high-fidelity assessment of critical abilities. Students' critical abilities in collaboration, modeling, problem-solving, and research which are real-life related should be included in the assessment. The third one is the internationally standard benchmark. The assessment should be so rigorous that it can meet international standards in terms of content and performance. The other feature of assessment is the use of instructionally sensitive and educationally valuable items. The instructional sensitivity is defined as "a tendency for an item to vary in difficulty as a function of instruction" (Naumann et al., 2019, p. 42). The last one is validity, reliability, and fairness of assessment. The assessment should measure students' learning outcomes in such a way that it can reflect students' accurate learning achievements. In other words, it presents logically or factually sound quality.

Care and Luo (2016) talk about "evidence-based strategies" (p. 45) to assess how transversal competencies are best achieved. Transversal competencies are soft skills (Tam & Trzmiel, 2018) that are practice-based and theoretically guided. Keesing-Styles (2003) focuses on the use of dialogue to assess students' transversal competencies. Fostering the integration of theory and practices, dialogue makes students' learning more meaningful. Dialogue-based assessment makes students critically aware and reason-based. "To achieve a critical approach to assessment, it must be centered on dialogic interactions so that the roles of teacher and learner are shared and all voices are validated" (Keesing-Styles, 2003, p. 10). Similarly, "Aristotle wrote about four contexts of reasoning or dialogue frameworks: demonstration, dialectic, contentious reasoning, and misreasoning" (Macagno & Walton, 2007, p. 101). One of them is the demonstration which is interpreted as pedagogical dialogue. The teachers due to their status quo and inept behavior, have not embraced dialogic pedagogy in which the students can interact with the teachers and their peers without any sort of hierarchy. They treat students in the way that "the students if let speak and perform freely, they become rebellious and the classroom becomes chaos" (T5). The teachers' narrow concept has confined the students to be conscientious and grow with reasoning skills. The next is the dialectic framework. In this framework, the students are encouraged to present their ideas or opinions with reasons or evidence. So, it is reason-based or evidence-based dialogue. However, the teachers treat students as if they are empty vessels for them to fill up with knowledge and information as a teacher says, "We have to explain the topic clearly, give key points for them to prepare for paper-pencil tests" (T4). Such a top-down model of education cannot conscientize and empower critically.

Existing School Assessment Practices

Two types of assessment (formative and summative) are practiced in public schools of Nepal. They are expected to be constructive and evidenced-

based but they are practiced traditionally and confined to assess theory-based learning achievement. Although "National Curriculum Framework (NCF) 2063 made a policy regarding the assessment system introducing both types of the assessment system at the school level" (Sapkota, 2022, p. 58), the concerned authority has many more challenges to make them efficient to assess students' diverse competencies. The formative assessment which could be made student-friendly, evidence-based, and goal-oriented is run traditionally. So, it has lacked reliability and validity as S5 says, "The grading in formative assessment depends on the teachers. It has a high halo effect". Because of no precise and concise rubrics, the formative assessment lacks transparency and consistency in grading. The assessment is expected to assess what transformative learning took place, what hands-on experiences the students accomplished, and what transversal competencies they achieved; not what theory and information they store in their minds. Sapkota (2022) claims that most school teachers are not utilizing the varied tools of both assessments. The teachers assess students by paper-pencil tests. It is because the teachers choose the comfort zone. "Using varied assessment tools is effortful, time-consuming, and expensive" (T2). Similarly, the students say "What we learn is not important, but how well we wrote in the paper during written examination is important" (T4). Therefore, the concerned authority's role is to empower and encourage teachers to utilize varied assessment tools for assessing students' distinct learning outcomes has been essential. Varied assessment tools can be used as a summative assessment but paper-pencil testing has been the dominant assessment tool in the context of Nepal. The summative test is the paper-pencil test (Perry et al., 2022). The formative assessment is neither valued as a summative one nor in the priority of the concerned authority because it is highly affected by the hello effect. It lacks consistency due to no precise and concise transparent rubric. It is in the hands of the teachers who teach the students. It lacks consistency because of no transparent rubric and real

evidence. The next is external assessment. Each of the concerned authorities is aware of the summative assessment which is highly prioritized and widely valued. In contrast, the second one is reliable, valid, and authentic though it cannot measure students' diverse learning achievement. A student's academic status is marked with their score or grade from the external examination which makes students nervous and disheartened (Triplett & Barksdale, 2005). The concerned authorities from the policy and management level are expected to empower and encourage the teachers to use varied assessment tools to assess students' transformative learning, hands-on experiences, and soft skills. Similarly, making the assessment valid, reliable, and transparent is equally important.

The formative assessment which is also termed as internal assessment is an ongoing evaluation practice of students' academic performance, skills, and knowledge within educational institutions. It takes place during teaching-learning and provides constructive feedback to improve teaching-learning (Sapkota, 2022). It is conducted by the concerned teachers within the school. Such assessments serve multiple purposes, including gauging student progress, informing instructional decisions, and providing feedback to both students and parents. One of the methods of internal assessment is classroom assessment in which students are assessed through quizzes, tests assignments, and homework. Assessing students on their performance in the roles given provides them with transformative knowledge, hands-on experiences, and life skills. For example, the teacher divides students into different groups, gives each group a task, and guides them to organize a quiz contest program and perform their roles. In such activities, the students collaborate, cooperate, and learn from one another. They, while working become responsible, critical, and reflective. Such learning is essential to nurture students with 21st-century skills (Fadel, 2008). In the words of S1 "Learning through doing ourselves is interesting and easy to gain goals". Similarly, the assessment of project work and presentation is learner-engaged and

includes multiple purposes. The students are assessed both from individual and group project works. From the individual project work, the students are assessed from their demonstration ability to research, analyze, and present information on a given topic. As T2 said, "Students learn better from project work but it is expensive and difficult to manage". From group project work, their teamwork and communication skills and individual understanding are assessed.

Although we have "no perfect trend of using formative assessment to provide feedback for further improvement" (Sapkota, 2022, p. 63) in Nepal, the teachers have used different methods. One of them is the assessment of student's participation and performance. In this test, students are asked to apply their knowledge and skills in a context. They demonstrate their competencies by performing or producing something. Based on their performance, they are assessed or graded. Assessment in critical pedagogical education should go beyond traditional measures of knowledge retention. It should transcend the traditional trend of assessment that emphasizes high-stakes testing. As T3 says, "Evaluating students from their performance during the dialogue and discussions is interesting but challenging to maintain consistency". Teachers also evaluate students on their participation in different activities, for example in discussion, raising questions, or engaging in the roles given. The other method to assess students' knowledge and skills in subjects like science, technology, engineering, and mathematics is practical assessment. In such methods, students' hands-on skills are evaluated. The fifth one is peer assignment. In some cases, students are involved in assessing their peers' work. In this situation, they have fostered a sense of responsibility and provided different perspectives. The last one is the portfolios which serve as a comprehensive and authentic way to evaluate students' abilities and accomplishments. In this method, evidence of students' work, achievements, skills, and experiences are collected. The teachers are unfamiliar

with this practice. The formative assessment tools if used constructively and made evidence-based can provide sufficient credentials for summative assessment. The summative assessment is also known as a traditional or paper-pencil test and is "used to validate learning"(Sapkota, 2022, p. 57). It is an assessment method where students have to sit for a written examination at a scheduled time and answer questions or complete tasks using a pen or pencil on paper. This format has been a common method of evaluating knowledge, skills, and abilities in various educational and professional settings. The test includes different types of questions. Some of them are long/short answer questions, multiple-choice questions, true/false questions, fill in the gaps, etc. Such questions have encouraged students to memorize the content and recall it during the examination as S2 says, "We try our best to memorize through rote learning but very difficult to remember all the points and information". Despite the wide use of paper-pencil tests for assessment and evaluation, it has some demerits or drawbacks as well. One of them is its limited assessment of skills. It often focuses on assessing memorization and regurgitation of facts rather than deeper understanding or critical thinking skills. The paper-pencil test cannot measure the practical application, creativity, or problem-solving abilities of students. The inability to measure students' real-world skills is another default of paper-pencil tests. As its primary focus is on student's ability to solve questions from limited courses or areas of knowledge, it cannot measure real-world skills like communication, teamwork, and adaptability which are essential in day-to-day life. The third one is time constraints. The test increases stress and anxiety among students (Rajendran et al., 2022). They have pressure to remember the contents during examination time. It makes them frightened and frustrated. The other demerit of paper-pencil tests is cheating concerns. As students have difficulty in memorizing all the theoretical knowledge, they look for easy options to write during examinations, for example copying from others or unauthorized materials. Finally, paper-pencil

tests cannot assess students' diverse learning styles. For example, it cannot capture students' ability in hands-on activities or project-based skills. Despite their widespread use, paper-pencil tests have some limitations. They may not effectively measure certain skills, such as hands-on abilities or interactive problem-solving, and scoring can be time-consuming, especially for large-scale assessments. In recent years, technology-based assessments and online testing platforms have become more prevalent, offering alternatives to traditional paper-pencil tests. These digital methods often provide quicker scoring, adaptive testing, and multimedia-rich question formats. The existing practice of high-stakes testing as an assessment tool is not authentic as it suffers from several ill-practices such as cheating, and bias. The assessment becomes authentic when it encourages students to "reflect upon their own 'lived realities' for assessment and learning" (Serrano et al., 2018, p. 9). The use of rubrics maintains consistency while assessing students' performance-based activities.

The practice of liberal promotion policy and the dominant influence of high-stakes testing have borne many ill-practices. To make liberal promotion policy learning-centered and goal-oriented, precise and concise rubrics that can make self-assessment consistent and reliable are necessary. "The focus on self-assessment by students is not common practice" (Black & Wiliam, 2006, p. 25). However, the rubric-based assessment reflects actual teaching learning and encourages both the teacher and students to do their best during classroom activities. Rubrics, according to Chowdhury (2018), "are useful grading tools that add reliability, validity, and transparency to assessment" (p. 25). For this, assessment should evaluate not only students' learning achievement of certain knowledge and skills but also the delivery process of concerned authority and students' learning process to meet the expected goal.

Assessment for being learner-engaged, evidence-based, and goal-oriented requires some practicable qualities. Firstly, the assessment should reflect real-

world scenarios and challenges which can include projects, case studies, and problem-solving tasks that require students to apply critical thinking skills to address complex issues. Secondly, the assessment should incorporate reflective activities and open dialogues as part of the assessment process. The assessment should encourage students to reflect on their learning experiences, articulate their understanding of social issues, and engage in meaningful discussions about their perspectives. Thirdly, the assessment should include socially relevant topics or issues. It encourages curriculum designers to focus on context-based teaching-learning content, teachers to center their classroom activities around existing social issues, and students to critically analyze and question societal norms, structures, and power dynamics. It also helps students connect their learning to broader issues and promotes social awareness. The sixth is collaborative assessments. It fosters collaboration among students by incorporating group projects or collaborative assessments. It promotes the development of teamwork, communication, and shared critical perspectives. The seventh is the inclusion of multiple perspectives. The assessment should assess students' ability to consider multiple perspectives and diverse viewpoints. It can be achieved through assignments that require students to analyze various sources, engage with different cultural contexts, and appreciate diverse viewpoints. The eighth is the encouragement of self-assessment and self-reflection. The education system should develop students' skills to evaluate their progress, recognize their biases, and set goals for personal and intellectual growth. The ninth is the assessment of the process. As main learning takes place during the process of teaching-learning activities, the assessment should reflect the process that students go through in reaching their conclusions. Assessment of student's ability to critically engage with the learning material, question assumptions, and adapt their thinking over time.

Validity and Reliability of Assessment

The ultimate goal of education should be the preparation for life but it has been a part of the preparation for assessment. Valid and reliable assessment is widely accepted and treated similarly. Serrano et al. (2018) highlight that "authentic learning is critical, rational, and transformative" (p. 2). However, the teachers opine that the "paper-pencil test is the only valid and reliable assessment tool" (T4). It is necessary to make learning a part of preparation for life and assessment to reflect the preparation. The teachers are not empowered and encouraged to develop and work with the assessment tools that assess students' critical understanding, transformative learning, and hands-on experiences. The teachers themselves accept the fact that "Internal assessment has not been accepted so valid, reliable, and standardized as the high-stakes testing" (T5). They if trained and empowered to make an assessment valid and reliable can make use of varied assessment tools strategically and make them as valid and reliable as standardized ones. The assessment that reflects how critical, rational, and transformative the learning is more standardized than the one that reflects theory-based knowledge without transversal competencies. As "reliability is an index that shows the extent to which a measuring instrument is reliable" (Erlinawati & Muslimah, 2021, p. 29), the measuring instrument is widely accepted when it maintains consistency. The measurement or assessment is the same or similar even when they are assessed repeatedly. In the words of Erlinawati and Muslimah (2021), "A test is said to be reliable if the scores obtained by participants are relatively the same despite repeated measurements" (p. 29). A well-designed rubric that is concise, precise, specific, and aligned with the learning objectives of the assessment maintains reliability.

Conclusion

One-size-fits-all type of tests cannot assess students' diverse talents and promote a sort of hesitancy and abhorrence among students. The assessment

system for assessing students' diverse learning achievement should embrace various assessment tools. In other words, assessment tools should be designed to assess students' real achievement of both academic and transversal competencies as expected from educational activities in the school. For assessing students' transformative knowledge, hands-on experiences, and soft skills, the teachers are required to empower and encourage them to develop and implement various assessment tools. The concerned authorities should promote assessment tools that are learner-engaged, evidence-based, and goal-oriented. By making the tools transparent, consistent, and trustworthy, the ill practices that were the result of paper-pencil tests can be reduced.

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