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# The Saptagandaki Journal

(A Multidisciplinary Research Publication of Saptagandaki Multiple Campus)

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# The *Saptagandaki Journal*

## *Editorial* ....

We are delighted to present the 13<sup>th</sup> volume of "The Saptagandaki Journal", an official publication of Saptagandaki Multiple Campus, Bharatpur, Chitwan, Nepal. This volume includes a diverse collection of 11 research articles, reflecting the multidisciplinary approach of our practice and the dedication of our faculty members and scholars to pursue cutting-edge research in their fields. The articles in this volume cover a wide range of topics, including corporate finance, botany science, education pedagogy, social media, speech analysis, film analysis, and more. These articles provide valuable insights into the Nepalese context and contribute to the academic discourse in their respective fields.

In the article titled "Testing Pecking Order Prediction of Financing Choices in Listed Companies of Nepal", Kapil Deb Subedi examines the financing behavior of Nepalese firms and investigates the effect of various firm-specific factors on their financing decisions. The study reveals that financial risk, borrowing capacity, operating growth, internal profitability, and information efficiency significantly impact the financing choices of these companies.

Keshav Acharya's study, "Effect of Leaf Extracts of Lantana Camara L. on Germination and Growth of Some Crop Species" delves into the allelopathic effect of Lantana camara leaf extracts on the germination and growth of four crop plants. The results showed that the extract inhibited the germination and growth of all tested crops, with the lowest effect seen in *Triticum aestivum* and the highest effect in *Brassica campestris* and *Oryza sativa*. The study concluded that the allelochemicals in the extract have a negative impact on the growth of these crops.

In "Telling an Untold Story of Pedagogical Practices in Mathematics Education in Nepal: Envisioning an Empowering Pedagogy", Basanta Raj Lamichhane criticizes

the conventional pedagogical practices in mathematics education of Nepal and advocates for an empowering pedagogy that is inclusive and encourages critical thinking. This article contributes to the ongoing conversation about the need for inclusive and effective education in Nepal.

The article "Power of Reading: Reading as a Strategy for Learning English" by Padam Lal Bharati highlights the importance of reading as a tool for language acquisition and academic success. This article presents evidence that reading is an effective strategy for improving proficiency of English as a second or foreign language and encourages educators to incorporate more reading activities into their teaching practices.

Mohan Prasad Sapkota's article, "Behavioral Finance and Stock Investment Decisions" explores the role of behavioral finance in stock investment decisions. The study highlights that investors' decisions are often influenced by behavioral biases, such as overconfidence, herd mentality, and loss aversion.

Krishna Prasad Gyawali's article, "Role of Social Media in Commercial Vegetable Farming for Rural Development" investigates the role of social media in promoting commercial vegetable farming for rural development. The study concludes that social media can be an effective tool in promoting agricultural activities and enhancing rural livelihoods.

Tek Chhetri's article, "Identifying Patterns in a Documentary- *Convergence: Courage in a Crisis*" offers a film analysis of the movie "Convergence: Courage in a Crisis." The study highlights the movie's themes of resilience, collaboration, and the importance of effective communication in crisis situations.

Rashes Vaidya's article, "Distribution Nature of Trade Volume and Number of Trades at NEPSE Floor" examines the distribution nature of trade volume and the number of trades at Nepal Stock Exchange (NEPSE) floor. The study highlights that the distribution nature of trade volume and the number of trades at NEPSE is not normal.

Dhan Raj Chalise's article, "Does Financial Information Influence the Behavior of Stock Price? Evidences from Nepali Commercial Banks" investigates the impact of financial information on stock price behavior in Nepali commercial banks. The study

highlights that financial information has a significant impact on stock price behavior.

Sabina Shakya's article, "The Impact of Marriage on Career Development of Women: A Study of Newar Community of Kirtipur, Kathmandu" examines the impact of marriage on the career development of women in the Newar community of Kirtipur.

Finally, Tika Ram Kandel's study, "Advocacy for Religious Plurality in Vivekananda's Speech" highlights the importance of religious plurality and the role of Swami Vivekananda in advocating for it.

Thus, the 13<sup>th</sup> volume of "The Saptagandaki Journal" has been a remarkable collection of distinct articles that showcases the diverse research interests of the academic community at and outside the Saptagandaki Multiple Campus. We hope that these articles provide valuable insights and contribute to the academic discourse in their respective fields. We would like to extend our gratitude to all the authors for their contributions and the reviewers for their valuable feedback. We would like to express our gratitude to all the contributors for their efforts and commitment to producing quality research. We also thank the reviewers for their insightful comments and suggestions, which have helped us to improve the quality of the articles. We hope that this volume will stimulate further research and contribute to the academic discourse in Nepal and beyond.

## **Editorial Team**

### **The Saptagandaki Journal**



## Testing Pecking Order Prediction of Financing Choices in NEPSE Listed Non-Financial Companies of Nepal

Kapil Deb Subedi

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### Abstract

*In a financial market with information, agency and contract enforcement problem, partially informed firms have difficulty to access in capital markets and they face some restrictions to get adequate external capital at similar cost of their internal funds. Hence, these firms display the preferential order of financing choices, for example; first they invest internal funds, second debt capital and equity as last resort. However, such preferences of financing order commonly known as Pecking Order are not similar in all cases due to the nature of firms, their financial health, borrowing capacity, and functioning of capital markets. Under this backdrop, this study attempted to test this Pecking Order Hypothesis (POH) in financing decisions of Nepalese firms. Moreover, it tried to examine the effect of firm's borrowing capacity, informational efficiency, financial risk, operating growth, taxes and internal profitability on pecking order financing preferences of firms. It used quantitative approach of analysis to examine the financing behavior of 16 non-financial NEPSE listed companies. Descriptive and inferential statistics i.e. Pooled Ordinary Least Square (OLS) regression approach was used to test the hypothesis and data comprised unbalanced panel (n=262 observations) obtained from annual financial reports of sampled companies. The study results revealed that firm specific financial risk including borrowing capacity, operating growth, internal profitability and information efficiency have significant impact in firms' financing policies. Firms have preferences to use debts instead of equity when they face financing deficiency and these preferences are prominent when firms plummet in severe financing constraints. Hence, this study concluded that a firm's capacity to trade off its financial risk with some firm specific attributes outlined the most of*

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*the financing policies of Nepalese enterprises. These financial risks absorption capacity of the firms could be considerably improved if firms improved their profitability, sales growth, information efficiency and spare borrowing capacity; hence, these factors are imperative to design the optimal capital structure of firms and maximize their values.*

**Keywords:** *Optimal capital structure, asymmetric information, pecking order hypothesis, financing decisions, financing deficiency,*

## **Introduction**

In an ideal situation with no taxes, bankruptcy costs, agency costs, and asymmetric information; Modigliani and Miller (1958) proclaimed that a firm's capital structure has no impact on its financial value. Since, a firm's investment decisions are not affected by its financing decisions, internal and external capitals can be substituted without any additional cost. Modigliani and Miller (1958) further argued that the value of a company's operating assets will not be affected by whether its financing is contributed with a variety of securities or with equity alone. Additionally, they claim that the expected leverage effect viz; replacing costly equity with cheaper debt can increase a company's value, is an illusion since the cost of capital is determined by the company's assets rather than its financing sources.

However, financial markets are not as efficient as assumed in Modigliani and Miller (1958) prototype. Taxes (Kings, 1974), transaction cost (Coase, 1937, Williamson, 1981), bankruptcy costs (Alman, 1984), agency cost (Jenson & Mackling, 1976), information cost (Myers & Majluf, 1984), quota and credit rationing (Stieglitz, 1981), directed lending program (Banerjee & Duflo, 2014) etc. in financial markets are the frictions that restrict a firm's equal access to financing and these frictions impose additional cost on external capital tempting the firms to use more internal funds instead of debt and equity. Thus, in a world of taxes and bankruptcy cost, Modigliani and Miller (1958) propositions turn into the concept of a "static trade off" theory of capital structure (Myers, 1984). Thus, a firm's optimal capital structure is determined by the tradeoff of costs and benefits of debt financing, while taking into consideration of firm's assets and investment plan.

A set of theoretical propositions developed by Myers (1984) and Myers & Majluf (1984), on other hand, argued that due the cost advantage of internal finance, the value maximizing firms prefer to use internal funds over external financing.

For example; the financing hierarchy hypothesis proposes a plausible framework in which a firm prefers to use retained earnings, debt and equity consecutively due to the differentials in agency and information cost associated with these three types of capital. Such a financing hierarchy in preference of capital structure design is called as pecking order hypothesis and it is a widely accepted framework for understanding how firms choose their financing sources and the implications of these choices on their cost of capital and financial value.

There is no consistency in empirical results regarding the pecking order predictions in capital structure. In their extensive study of capital structure of industrialized countries, Rajan and Zingales (1995) found that pecking order is more pronounced in large firms as compared to small one since firm size had an inverse relationship with financial leverage. Studies including Akhtar and Oliver (2009) have found that firm size is positively correlated with financial leverage, while others, such as Ali (2011) has found that profitability has a positive effect on financial leverage. Moreover, Drobetz and Wanzenried (2006) and Antoniou et al. (2008), have found that profitability is inversely correlated with leverage due to a firm's preference for internal over external financing sources. These conflicting findings highlight the need to further evaluate the determinants of capital structure in order to better understand the relationship between capital structure and financing choices.

However, it is not clear to what extent the pecking order theory is relevant in the Nepalese context. While there have been several studies conducted in corporate capital structure including the conventional exogenous variables and their effect on firm's capital structure choice, the application of financing deficit variables to examine the pecking order theory and its relevance for understanding firms' financing decisions is lacking in Nepal particularly in case of NEPSE listed non-financial companies.

Such a lack of empirical evidence on the relevance of the pecking order theory in the Nepalese context represents a gap in our understanding of how Nepalese firms make financing decisions and the associated factors that influence these decisions. In order to address this gap, it is important to conduct a study on Nepalese firms to examine the applicability of pecking order theory and to identify any unique factors including firm size (Rajan & Zingales, 1995), tangibility (Titman & Wessels, 1988), profitability (Taggart, 1977; Marsh, 1982), growth (Lang, Ofek & Stultz, 1995), risk (Kim & Sorensen, 1986), and non-debt tax shield (Faccio & Lang, 2002) that may

influence a firm's financing choices in Nepal. This would provide valuable insights for researchers, policymakers, and practitioners seeking to understand the financing patterns of Nepalese firms and the factors that drive these patterns.

This study has been organized into five sections. Section one represents the background of the study, section two is the literature review and conceptual framework, section three proposes the research methodology, section four discusses the results and findings. The conclusions and implications are presented into section five. Finally, references are included at the end of the study.

## **Literature Review**

Firms that acquire more tangible assets is expected to employ more debt in their capital structure as compared to the firms with less proportion of tangible assets in their assets composition. Titman and Wessels (1988) use ratio of fixed assets to total asset as proxy to measure assets tangibility. According to Sayilgan et al. (2006) and Gaud et al. (2005), inventories can be included as part of a company's fixed assets because they represent physical goods that a company owns and holds for sale or production. These researchers argue that inventories should be considered as fixed assets because they can be used to secure borrowing. When a company borrows money, the lender may require collateral to secure the loan.

According to the Pecking Order Theory of capital structure proposed by Myers and Majluf (1984), firms in imperfect capital markets, characterized by asymmetric information or high transaction costs, typically prefer to raise capital in the following order: retained earnings, debt, and new equity. As a result, the ratio of earnings before interest, tax, and depreciation (EBITDA) to total assets has often been used as a proxy for profitability in studies such as those by Gaud et al. (2005), Rajan and Zingales (1995), Titman and Wessels (1998), and others.

Profitability is believed to impact a firm's debt capacity in two ways. First, an increase in profit leads to an increase in the value of interest deductibility, making it more attractive for the firm to take on debt. Second, an increase in profit reduces the probability of bankruptcy, making it less risky for the firm to take on debt. However, conventional leverage regressions have often found that the coefficient of profitability is negative, rather than positive, which Frank and Goyal (2009) attribute to the fact that an increase in profit may also lead to an increase in the firm's equity base (to the

extent that profits are not distributed as dividends), resulting in a mechanical decrease in leverage.

According to several empirical studies on capital structure, including those by Bradley et al. (1984), Jalilvand and Harris (1984), and Titman and Wessels (1988), the debt ratio of a firm is influenced by factors such as non-debt tax shields and product uniqueness. A comprehensive review of empirical research by Harris and Raviv (1991) found that leverage tends to increase with factors such as fixed costs, investment opportunities, non-debt tax shields, and firm size, and decrease with factors such as advertising costs, volatility, bankruptcy potential, profitability, and product uniqueness.

Non-debt tax shields refer to tax deductions that can reduce a company's tax liability without requiring the company to take on additional debt. Faccio and Lang (2002) found that firms with high levels of non-debt tax shields tend to have lower levels of debt relative to equity. Graham, Lemmon, and Wolf (2005) also found that firms with higher levels of non-debt tax shields tend to have higher valuations and lower cost of capital.

Titman and Wessels (1988) stated that firm size plays a key role in a firm's ability to access and choose between debt and equity financing. Larger firms tend to be more diversified and have a lower risk of failure, which can make them more attractive to lenders and investors. Jensen (1976) also argued that firm size has a positive impact on the supply of debt. As a result, firm size is often found to have a statistically significant and positive influence on capital structure, although the extent of this effect may vary depending on the size of the firm. In this study, firm size is measured using the natural log of total assets in millions of rupees, following the approach of Titman and Wessels (1988).

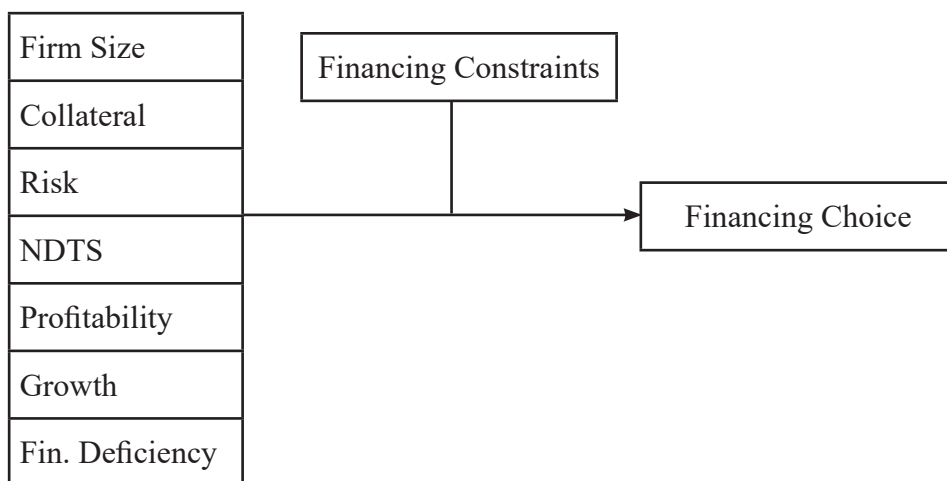
Financial deficit denotes the status of financial surplus or deficit of firms. In Shyam-Sundar & Myer (1999) the financing deficit is constructed from an aggregation of dividends, investment, change in working capital and internal cash flows. Hence, the negative value of financial deficit implies a financial surplus (i.e. the firm pays dividend and investment less than it internally generates cash). The positive value of financial deficit implies a financial deficit (i.e. the firm invests and pays dividend more than it internally generates cash). If the pecking order theory is correct, then the construction of the financing deficit variable is a justified aggregation as per Shyam-Sundar & Myer, (1999), Frank and Goyal (2003), Ogden & Wu, (2012) among others.

However, Shyam-Sundar & Myer (1999) found the debt financing does not dominate equity financing in magnitude. Net equity issues track the financing deficit quite closely, while net debt does not do so. It ruled out the pecking order in financing choice of US companies.

On the basis of literatures reviewed so far, the following conceptual model of financing decision can be proposed for this study. The idea of this framework is based upon the work of Shyam-Sudar & Myer, (1999), Frank and Goyal (2003), Ogden & Wu, (2012) among others.

**Figure 1**

*Conceptual Framework of the Study*



**Table 1**

*Exogenous variables: Proxies, expected sign and proposed priori conjectures.*

<b>Determinants of financing choice</b>	<b>Proxy Measures</b>	<b>Expected sign</b>	<b>Rationale for expected sign</b>
<b>Profitability</b>	EAT+ Interest to total assets	+/-	More profitable firms should show more leverage in trade-off model; when investment opportunities are controlled but in pecking order model, it should have less leverage of more profitable firms.
<b>Tangibility</b>	Fixed Assets+ inventory/Total Assets	+	More collateral allows firms to issue more debt and increase their leverage
<b>Growth</b>	Change in Sales from previous year to this year / Sale of this year	+	Higher growth in sales of firms demands more leverage to finance its operations and inventories.
<b>Risk</b>	Volatility of earnings, STD.DEV of EBITDA.	-	due to uncertainty of cashflow, higher volatility of earnings should lead to lower amount of leverage.
<b>Size</b>	Natural logarithm of sales	+	The larger firms should display more leverage than smaller since the expected costs of financial distress are likely to be lower for larger firms.
<b>Deficiency</b>	Financial deficiency or funds flow deficit	+	The more financial deficiency the firms have, the more leverage the firms demand
<b>Non-Debt Tax Shields (NDTS)</b>	Depreciation and Amortization Expenses divided by total assets	-	The firms with large non-debt tax shields in relative to their cashflows should hold less leverage since they substitute the interest tax shields.
<b>Dummy Variables</b>	Financing constraints, Industry sectors etc.	- +	Financing constraints, dividend payment status, liquidity and sectors are the moderating variables expected to change the hypothesized relationship between leverage and independent variables.

## Research Methodology

This study utilizes quantitative research approach and adopted descriptive and analytical research design to draw the conclusion of the study. The variables were analyzed using unbalanced panel data over the 1998 AD to 2019 AD of time period. Sample was taken from NEPSE listed non-financial sectors of companies. By the end of 31<sup>st</sup> December 2019, there were 65 companies listed in NEPSE excluding the companies from financial, banking and insurance sectors. Out of these, 16 companies were chosen purposively. The companies that published their financial reports regularly to SEBON and NEPSE and that have completed their annual general meetings duly

**Table 2**

*List of Sample company and period of study*

<b>Name of sample companies</b>	<b>No. of obs.</b>	<b>Period covered (AD)</b>
Arun Valley Hydro LTD	12	2008-2019
Bottlers Nepal (Terai) Ltd	19	2001-20019
Butwal power company ltd	20	2000-2019
Bottlers Nepal Ltd	22	1998-2019
Chilime Hydro Ltd	15	2004-2019
Himalayan Distillery Ltd	15	2004-2019
National Hydro Ltd	12	2003-2009, 2014-2019
Nepal Lube Oil ltd	19	1998-2009, 2012-2019
Nepal Telecom Ltd	16	2004-2019
Oriental Hotel Ltd	20	2000-2019
Soaltee Hotel Ltd	20	2000-2019
Salt Trading Ltd	20	1999-2018
Regency Hotel Ltd	17	2003-2019
Unilever Ltd	23	1998-2019
Sanima Mai hydro Ltd	5	2015-2019
Shivam Cement Ltd	6	2014-2019
<b>Total</b>	<b>262</b>	

were taken as sample for this study. Under the selected sample companies, out of which seven companies were from manufacturing sectors and could obtain 104 observations from these companies. Similarly, there were five hydro power companies and could obtained 64 observations from these companies. Out of hotel sectors, three companies were chosen as sample, they comprised 57 observations and 20 observations were obtained from trading company. Additionally, 16 observations were taken from Nepal Telecom Limited. Altogether 262 observations comprised the total data from 16 sample companies for the given study period. The sample was characterized by unbalanced pooled cross-sectional data properties. The table 2 shows the details of sample companies selected and observation/ data taken for analysis.

### Method of Analysis

This study analyzed the data at three levels. At first, descriptive statistics are presented. It has presented the statistics like mean, standard deviation, minimum and maximum values of each variables. Secondly, the correlation analyses of study variables are conducted. It is expected that the correlation shows the magnitude and direction of relationship among the study variables.

At third, econometric analysis is carried down. Various capital structure theories explain the relationship of firm's leverage decisions as outcome of its firm specific financial variables like profitability, tangibility, size, volatility, non-debt tax shields and growth. Therefore, the first approximation of determinants of capital structure choice can be presented in equation (1) as follows;

The first approximation of determinants of financing choice can be presented in following baseline regressions as mentioned in equation 1 and 2 respectively.

$$\text{Leverage} = f(\text{Tangibility, Profitability, Size, NDTs, Risk, Growth}) \dots\dots\dots(1)$$

In an econometric specification, the equation (1) can be written as follows:

$$L = \dots\dots\dots(2)$$

Where 'L' is the leverage ratio and it is explained by K independent factors X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>,... X<sub>k</sub> as mentioned in equation (2) and are the unidentified parameters. Based on equation (1) and (2), the following econometric models has been derived to analyze the factors of financing choice of Nepalese enterprises.

$$(LEV)_{it} = \beta_1(TANG)_{it} + \beta_2(PROF)_{it} + \beta_3(NDTS)_{it} + \beta_4(GROW)_{it} + \beta_5(RISK)_{it} + \beta_6(SIZE)_{it} + \dots\dots\dots(3)$$



The regression equations derived to test the models empirically for each of the dependent variables has therefore been specified as under:

$$(TD/TA)_{it} = +1(TANG)_{it} +_2(PROF)_{it} +_3(NDTS)_{it} +_4(GROW)_{it} +_5(RISK)_{it} +_6(SIZE)_{it} +_{it} \dots\dots\dots(4)$$

$$(LTD/TA)_{it} = +1(TANG)_{it} +_2(PROF)_{it} +_3(NDTS)_{it} +_4(GROW)_{it} +_5(RISK)_{it} +_6(SIZE)_{it} +_{it} \dots\dots\dots(5)$$

$$(STD/TA)_{it} = +1(TANG)_{it} +_2(PROF)_{it} +_3(NDTS)_{it} +_4(GROW)_{it} +_5(RISK)_{it} +_6(SIZE)_{it} +_{it} \dots\dots\dots(6)$$

Where,  $f_1, f_2, f_3, f_4, f_5 > 0$  and  $f_6 < 0$

In the given equations, TD/TA is the book value of total debt of firm scaled by its total assets. LTD/TA is the ratio of long-term debt to assets and STD/TA is the ratio of short-term debt to assets. The independent variables for the given specification are firm size (*Size*), firm's ratio of tangible assets plus inventory to total assets (*Tangibility*), profitability (*ROA*), Growth (*growth*), non-debt tax shield (*NDTS*) and risk measured as volatility of net profit (*Risk*).

### Pecking Order Financing

According to Shyam-Sundar and Myers (1999), equity is only issued in situations where the firm can only issue junk bonds and the cost of financial distress is high. They propose that the investigation of financing decisions should begin with the pecking order model of Myers and Majluf (1984), which suggests that information asymmetry between managers and outside investors can result in substantial costs that can be reduced by avoiding external financing. Internal financing is therefore preferred over external financing, with debt being less costly than external equity and therefore preferred if external financing is necessary.

Shyam-Sunder and Myers (1999) developed a simple regression model to test the pecking order model. This model has been widely used to test the strict pecking order hypothesis, as long as safe debts can be issued and all components of the deficits are exogenous.

$$\Delta D_{it} = +_1 DEF_{it} +_{it} \dots\dots\dots (7)$$

Where;  $\Delta D_t$  is the amount of loan taken or repaid by firm 'i' in period 't'.  $DEF_{it}$  is the firm's financial defect as calculated in eq. (7) for firm i and period t. It is further expected that the coefficient  $a=0$  and  $B=1$ . In given equation (6) funds flow deficit

(DEF<sub>t</sub>) does not include equity issues or repurchase because in simple pecking order it is predicted that the firm will not issue or redeem equity as last option. Hence the funds flow deficit (DEF<sub>t</sub>) has been derived as following:

$$DEF_t = \{DIV_t + X_t + \Delta W_t - C_t\} \dots\dots\dots (8)$$

Where,

C<sub>t</sub> = Operating Cashflows after interest and tax payments

DIV<sub>t</sub> = Dividend paid at end of years

X<sub>t</sub> = Capital expenses for the year

ΔW<sub>t</sub> = Net increment in working capital for the year

D<sub>t</sub> = Long term debt outstanding (Ogden & Wu, 2012)

In the extant literature, other econometric equation is expanded with basic pecking order model by adding firm characteristics factors (in first difference form) that has been robust determinants of optimal leverage under trade of theory. Following Frank and Goyal (2003), the following specification for testing extended pecking order model has been proposed:

$$\Delta D_{it} = +_1\Delta TANG_{it} +_2\Delta PROF_{it} +_3\Delta SIZE_{it} +_4\Delta DEF_{it} + \dots\dots (9)$$

Where, ΔTANG, ΔPROF, ΔSIZE are changes in tangibility, profitability and size respectively. Due to limitation of data, Market to Book ratio of Assets could not be included as in original regression. As Frank and Goyal (2003) claim if pecking order is true, deficiency proxy should subsume the firm characteristics variables.

## Results and Discussions

### Descriptive Analysis

Table 3 provides a summary statistic of all variables used in this study. In the table, the variables are separated in three sections. The first section shows the statistics of dependent variables i.e. Long-term debt, short term debt and total debt ratios including change in long term debt over the accounting period. Statistics of control variables like profitability, size, non-debt tax shields, tangibility, and growth, risks, deficiency and log sales are presented in second section. Third section in each panel of table provides the statistics of moderating variables like liquidity, interest coverage, financing constraints and efficiency measures.

The mean values of the total debt ratio over the study period is 51.6%. and its variability as measured in standard deviation is 26.8%. The mean value of long-term debt ratio are 15.9% with standard deviation of 20.5%. The short-term debt constitutes 34.9% with 21.6% of variability. All of these ratios were obtained after winsorizing the data at cuts of 1% and 99% of observations to reduce the effects of outliers. The standard deviation, minimum values and maximum values of study variables are also presented in table for statistical inferences. 1<sup>st</sup> percentile value of long-term debt is nil. It means that one percent of Nepalese companies have not used long term debt over the study period.

Nepalese companies are moderately levered as noticed in their capital structure. Their indebtedness constitutes over 51% of their total assets. Additionally, short term debts have more weights than long term debts in total leverage, it could be attributed to the reason that firms either have not easy access to long term debt or even if they have access, there are restrictions in long term debt covenants that make them reluctant to obtain as much long-term funds as they require.

**Table 3**

*Summary Statistics of financial Variables*

Variable	Obs	Mean	Std.Dev.	Min	Max
Total Debt Ratio (TD/TA)	262	0.516	0.268	0.018	0.985
Long Term Debt (LTD/TA)	262	0.159	0.205	0.000	0.594
Short Term Debt (STD/TA)	262	0.349	0.216	0.004	0.973
Change in LTD ( $\Delta$ LTD/K)	244	0.033	0.379	-2.157	3.127
Collateral (TANG)	262	0.695	0.187	0.311	0.977
Size (LOG TA)	262	7.316	1.046	4.617	8.904
Profitability (ROA)	262	0.132	0.101	-0.052	0.386
Sales Growth (GROW)	261	0.152	0.661	-0.982	7.548
Non-Debt Tax Shields	262	0.035	0.023	0.001	0.139
Risk (VARNP)	244	0.015	2.223	-13.892	12.882
Liquidity (CR)	262	2.556	7.089	0.052	83.213
Utilization Efficiency (ATR)	262	0.807	0.765	0.019	4.822
Fin. Deficiency (DEFK)	244	0.159	1.331	-2.726	13.488
Discriminant score (ZFC)	245	0.000	1.127	-1.995	2.559

Moreover, the results indicate the usage of higher proportion of short-term debt in Nepalese companies. The higher short-term debt positions in developing countries may be justified by various past empirical studies. Rajan and Jingles (1994), Diamond (1993) and Demirguc–Kuniand and Maksimovic (1999) proclaimed that in developing countries companies depend more on short term debt. The reason could be attributed to greater information gap in market among borrowers and lenders for long term debt due to maturity risk.

Change in long term debt is the key dependent variable in capital structure study particularly for testing the pecking order model. Table 3 shows mean ratio of annual change in long term debt and its standard deviation respectively. It comprises average value of both borrowing and refunding transactions of Nepalese firms. During the period, it shows average long-term borrowing increased to 3.3%. It is higher than the study results found in Ogden and Wu (2012). In their study, they found average net debt issuance at 2.10% and average financing deficit at 4.73% respectively. The average financing deficit is 15.9% in this study and its standard deviation is 1.33 times of net fixed assets. Interestingly refunding exceeds the borrowing in first percentile of firms. But maximum value is 13.48%. It indicates the slower rate of change in long term composition of debt in Nepalese firms. Deficiency (DEFK) is a dynamic variable that measures the financial deficiency of firm in particular year. The positive value of DEFK variable denotes the financial deficiency and its negative value denotes the financial surplus. 54% of firms have negative value of this variable denoting their status of financial surplus.

### **Correlation of Leverage and other Fundamental Factors**

Table 4 presents the correlation among debt ratio with independent variables like size, collateral, profitability, risk, NDTs and sales growth. Long term debt is positively correlated with assets tangibility and sales growth but it is negatively associated with profitability, size, risk and non-debt tax shields variables. However, the long-term debt has statistically significant relation with profitability, tangibility and financial deficiency. NDTs and growth of sales is noticed negatively correlated with long-term debt but this relationship is weak and not significant. Long term debt and short-term debt of Nepalese firms have strong negative correlations. The reason behind such relation could be debt substitutions by Nepalese firms. Size and short-term debt is negatively correlated but contrary to negative correlation of long-

term debt, profitability and short-term debt is positively correlated. The correlation coefficient between total leverage and size is significant but not as per expectation. The correlation of leverage with profitability is found strongly significant but negative. Higher correlation is noticed between risk and profitability denoting the risky firms earns more profits and vice versa.

**Table 4**

*Correlation Coefficients matrix of Study Variables*

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Total Debt Ratio (TD/TA)	1.000										
(2) Long Term Debt (LTD/TA)	0.650*	1.000									
(3) Short Term Debt (STD/TA)	0.571*	-0.226*	1.000								
(4) Change in LTD ( $\Delta$ LTD)	0.180*	0.267*	-0.012	1.000							
(5) Profitability (ROA)	-0.215*	-0.355*	0.108	-0.094	1.000						
(6) Collateral (TANG)	0.031	0.366*	-0.381*	-0.102	-0.265*	1.000					
(7) Size (log TA)	-0.211*	-0.001	-0.280*	-0.041	0.102	0.303*	1.000				
(8) Sales Growth (GROW)	0.052	0.057	0.001	-0.059	0.061	0.032	0.033	1.000			
(9) Risk (Var. NP)	0.011	-0.043	0.046	-0.159*	0.167*	-0.062	-0.102	-0.043	1.000		
(10) Non-Debt Tax Shield	-0.145*	-0.092	-0.102	-0.170*	-0.026	0.374*	0.020	0.039	-0.010	1.000	
(11) Fin. Deficiency (DEFK)	0.033	0.201*	-0.148*	0.404*	-0.070	-0.158*	-0.016	-0.048	-0.033	-0.187*	1.000

\* indicates the correlation is significant at the 0.05 level (2-tailed).

As per the prior expectation, the correlation between NDTs and total leverage is negative and significant. It shows the firms substitutes the interest tax shields with non-debt tax shields. Interestingly, risk has positive relation with total debt but negative with long-term debt. It indicates the increase in long term debt increase the degree of financial leverage and makes more fluctuations in profitability and vice versa. Firm size has negative correlation with risk. The reason behind such relationship could be attributed to higher capacity of large firms to manage the fluctuations of profit. Interestingly, correlation between profitability and debt level is negatively associated.

It indicates higher the profitability will lower the debt level and lower will be the financial distress risk of companies.

According to Myers and Majluf (1984), information asymmetry between managers and outside investors can result in substantial costs that can be reduced by avoiding external financing. Therefore, internal financing is preferred over external financing, with the corporate financing preference hierarchy or pecking order putting internal financing at the top. If a firm does engage in external financing, it will prioritize debt over external equity, which is considered more costly. Shyam-Sunder and Myers (1999) have developed a regression model to test this pecking order. In this model, long term debt retirement or issue is explained by financing deficit of the firm. Employing pecking order equation (7) as suggested in (Shyam-Sundar & Myer, 1999), estimation results are obtained and they are presented in table 5.

### **Econometric Results**

Table 5 reports the regression results on firm financing choices based upon decomposition of debts into long-term and short-term maturity. Interestingly the regression results revealed further evidences on firm financing behaviors of Nepalese firms. Short term financing behavior of Nepalese firms is less influenced by information problem than long-term financing choice when compared to profitability coefficient. The long-term financing decision is negatively affected by firm's profitability. It indicates that the firms with larger profitability prefer less long-term debt as compared to the firms with smaller profitability ratio confirming the pecking order theory as advised by Myers (1984). The reasons could be attributed to asymmetric information and transaction cost that are pronounced more in long term financing than short term debts that tempt to managers to use past profitability or internal funds as major source of assets financing.

A positive relation between long-term debt and tangibility could also be due to the transaction cost or information problem in capital market. Larger collateral values reduce the information problem between lenders and borrowers hence tangibility coefficient estimate on long term debt is consistent with theory. A negative relation between assets tangibility and short-term financing may be due to the lender's reliance more on short term solvency or cashflows position of the firm rather than their dependency on collateral or liquidation value. Assets tangibility coefficients are

significant in both of the cases. This finding supports the recent empirical evidences on financing choices of Nepalese firm (Bhattarai, 2015).

According to prior expectations, non-debt tax shields (NDTS) are negatively correlated with a firm's leverage. However, the coefficient for NDTS is positive in short-term finance. The tradeoff theory suggests that firms with high levels of NDTS, which can be deducted from taxable income, are expected to have less debt than other firms and vice versa. The financing policies of Nepalese firms concerning NDTS differ between long-term and short-term debt. The coefficient for NDTS is less sensitive in short-term debt than in long-term debt ratios. This evidence is consistent with the tradeoff theory and the findings of earlier studies by DeAngelo & Masulis (1980), Ozkan (2001), and Bhattarai (2015).

**Table 5**

*Determinants of firm financing policy (Decomposition Analysis)*

Models	(1)	(2)	(3)	(4) <sup>+</sup>	(5) <sup>+</sup>	(6) <sup>+</sup>
	Ltd/TA	Std/TA	Td/TA	Ltd/TA	Std/TA	Td/TA
Profitability	-0.5498*** (0.1233)	0.02732 (0.1430)	-0.5626** (0.1758)	-0.5498*** (0.0928)	0.02732 (0.1635)	-0.5626*** (0.1625)
Collateral	0.4394*** (0.0718)	-0.3678*** (0.0832)	0.1612 (0.1023)	0.4394*** (0.0743)	-0.3678*** (0.0796)	0.1612 (0.1134)
Sales Growth	0.1557** (0.0586)	0.1594* (0.0679)	0.3398*** (0.0835)	0.1557** (0.0598)	0.1594* (0.0644)	0.3398*** (0.0801)
NDTS	-2.5970*** (0.5733)	0.1192 (0.6646)	-2.7265*** (0.8172)	-2.5970*** (0.5378)	0.1192 (0.7203)	-2.7265*** (0.8013)
Firm Size	-0.01898 (0.0115)	-0.03608** (0.0133)	-0.05737*** (0.0164)	-0.01898 (0.0114)	-0.03608* (0.0159)	-0.05737*** (0.0168)
Financial Risk	-0.008707 (0.0194)	-0.003518 (0.0225)	-0.01159 (0.0276)	-0.008707 (0.0239)	-0.003518 (0.0241)	-0.01159 (0.0292)
Constant	0.1329 (0.0825)	0.8425*** (0.0956)	0.9509*** (0.1175)	0.1329 (0.0804)	0.8425*** (0.0896)	0.9509*** (0.1035)
N	244	244	244	244	244	244
R <sup>2</sup>	0.2912	0.1801	0.1803	0.2912	0.1801	0.1803

*Standard errors in parentheses*

*+ results based on VCA(Robust) standard errors*

*\* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.0*

Non-debt tax shields (NDTS) as per priori expectation is negative with firm's leverage. However, NDTS coefficient is positive in short term finance. Tradeoff theory

suggest that the firms with high level of non-debt tax shields, which can be deducted from the taxable income, are expected to have less debt than other firms and vice versa. Financing policies of Nepalese firms as regards to non-debt tax shields is different upon long term and short-term debt. NDTS coefficient is less sensitive in short term debt than long term debt ratio. The evidence is consistent with tradeoff theory and early studies of DeAngelo & Masulis, (1980), Ozkan, (2001); Bhattarai (2015) etc.

The relationship between growth opportunities and leverage is positive and statistically significant in all models. The evidence suggests that sales growth requires more long-term and short-term debt financing to fund asset expansion and working capital needs. According to agency theory, equity-controlled firms tend to invest sub-optimally in order to expropriate wealth from bondholders, leading to higher agency costs in growing industries that have more flexibility in their investment choices. As a result, expected future growth should be positively related to long-term debt levels. These findings are consistent with the arguments made by Myers (1984), Jensen and Meckling (1976), Smith (1977), and Warner (1977), among others.

The use of more leverage by small firms may also provide insight into the possible risk factors underlying the "small firm effect" (Titman & Wessels, 1988). By borrowing more debt, small firms are more sensitive to economic downturns that have less of an effect on larger, less leveraged firms. The negative relationship between debt ratios and firm size may also reflect the information problems that small firms face when issuing equity. It can be argued that size serves as a proxy for the availability of information that outsiders have about the firm. From the pecking order perspective, less information asymmetry makes equity issuance more appealing to larger firms (Bashu & Rajeev, 2013). Thus, a negative relationship between size and leverage is expected. However, while the coefficient estimates for size attributes are small, they are all statistically significant in the equations.

In firm's debt decisions, it was found the negative effect of internal profitability on both long-term ( $\beta = -0.5498$ ) and total debt ratio ( $\beta = -0.5626$ ). Moreover, the firms with lower internal profitability relied more on debt finance for their investment until the collateral or debt capacity supports it, otherwise debt distressed firms highly depended on retained earnings for their investible funds.

Furthermore, the growth firms used more debts (short-term and long-term) to finance their growth opportunities ( $\beta = 0.155, 0.159$  and  $0.339$ ) in LTD, STD and TD



respectively. Interestingly, the growth had positive coefficients and profit had negative coefficient explaining the partial effect of these two control variables implying that if firms are unable to finance their growth activities only with internal profit, then they depend on debt finance. Firm size was negatively related with total debt ( $\beta = -0.057$ ) and short-term debt ( $\beta = -0.036$ ) but it was insignificant in long-term debt model. The risk coefficients ( $\beta = 0.153, 0.1614$  and  $0.3352$ ) for LTD, STD and TD were found positive when firms are in financing constraints regime but in overall, effect of risk or income volatility on debt level were negative showing their tendency to substitute the operating risk with less financial risk causing to lower debt ratios.

Additionally, Nepalese firm's debt decisions responded to their non-debt tax shields as well. The NDTs coefficients ( $\beta = 2.59, 0.$  and  $2.72$ ) were found negative in long term and short-term debt models implying that the firms that enjoy higher non-debt tax shields preferred less long-term and total debt. However, the effect of NDTs is not found significant in short term debt model. The results reported in table 5 (models 4, 5, and 6) using robust standard errors were not significantly different from the results reported in table 3.8 (models 1, 2, and 3). These robust standard errors, also known as *White, Huber, or Eicker standard errors, or heteroskedasticity-robust standard errors*, are unbiased estimators that are asymptotically distributed regardless of whether heteroskedasticity is present. These results do provide support for the effect of debt ratios on profitability, size, collateral, growth, and non-debt tax shields. However, the result for the risk factor is inconclusive and warrants further study to determine if the proxies used in the model adequately capture the relevant aspects of the attributes suggested by theories.

### **Pecking Order Models**

The result of basic OLS model for pecking order has been reported in model (1) and (2) of table 6. The dependent variable is the net change in LTD in model (1) and change in total debt level in model (2). The financial deficit (DEF/K) coefficients are dominant in model (1) but it is negative and insignificant in model (2). In long term debt model, the deficit coefficient is 0.099 and it is highly significant. It is in the right order of direction but significantly less than the simple pecking order prediction of 1. R squared value is 10.05%. This model under its simplicity does a great job of explaining the debt issue behavior of firms. The financial deficit is the important explanatory

variable in determining the long-term debt issue or retirement decisions of the firm. This coefficient is negative and stronger in case of total debt issuance; however, the R squared value dropped to 0.73 % as reported in model 2. Similar to expectation the constant intercept in both of the models are near to zero supporting the pecking order hypothesis of financing decisions. These results support the findings of (Shyam-Sundar & Myer, 1999) and (Ogden & Wu, 2012) . It confirmed that the debt finance is the dominant source of external funding.

**Table 6**

*Results of Pecking Order choices in financing*

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	$\Delta$ LTD	$\Delta$ TD	$\Delta$ LTD	$\Delta$ TD	$\Delta$ LTD	$\Delta$ TD
DEF/K	0.099*** (0.022)	-0.155 (0.153)	0.088*** (0.022)	-0.246 (0.158)	0.066* (0.031)	-0.018 (0.203)
Profitability			-0.073 (0.046)	-0.802* (0.333)	-0.073 (0.046)	-0.804* (0.331)
Collateral			-0.075** (0.027)	-0.441** (0.161)	-0.076** (0.027)	-0.434** (0.161)
Size			0.004 (0.005)	-0.020 (0.032)	0.004 (0.005)	-0.020 (0.031)
Def. Dummy					-0.014 (0.012)	0.148 (0.067)
N	244	243	244	243	244	243
R <sup>2</sup>	10.05 %	7.3%	13.08%	6.76%	13.51%	8.09%

Standard errors in parentheses \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

In model 3 and 4, pecking order model is extended to other firm specific attributes following the approach of (Ogden & Wu, 2012). The basic variables added to financial deficits are firm size, tangibility and profitability. Moreover, the effect of financial deficit Vs surplus on financing decision has been examined in model 5 and 6. Market to book value of assets ratio, cash reserves and industry median market leverage are the other variables used in estimating the extended pecking order model in Ogden& Wu (2012) but these three variables were ignored in our estimation due to

unavailability of market data. Results of extended pecking order model are displayed in column 3 and 4 in table 6 in which the independent variables include DEF/K and interactive variables involving some of the firm characteristics variables that were found significant in earlier leverage estimation in financing decisions model. Tangibility, profitability and firm size were the variables that were found significant in earlier conventional leverage equations. As reported in model 3 the interactive variable viz; collateral was found statistically significant but sign changed to negative. Similarly, in all of the models, the tangibility variable is found significant but the coefficient is not in predicted sign. Higher the tangibility, lower the debt issuance is noticed in these models which contradicts with conventional leverage results.

Moreover, the addition of firm specific variables doesn't change the stability of financial deficit coefficient. It suggested that the basic pecking order estimation is the best explanatory model of firm financing decision. In model 5 and 6, financial deficit dummy is added. The coefficient of financial deficit dummy is negative in long term debt and total model as per our priori expectations but it is not significant in model 5. In model 6, the dummy coefficient is negative and significant. These results suggest the negative effect of financial deficiency (surplus) on debt decisions.

### **Firm Financial Constraints**

Table 7 reports the regression results of split sample. FC panel constitutes the firm year observations that have been predicted as financially constrained group through discriminant score under discriminant analysis and NFC panel constitutes the sample of firms assumed to be not-financially constrained under discriminant analysis results. Interestingly the split sample results are different to each other. It has been found that the pecking order hypothesis is pronounced more in FC panel of firms. The financial deficit coefficients for long term debt is positive and significant as per the prior expectation. These coefficients are 0.3928 for explaining the change in long term debt and total debt. However, these coefficients are less than 1 as suggested in (Shyam-Sundar & Myer, 1999). However, in total debt model, the financial deficiency coefficients are not as per positive sign and statistically significant. The mean coefficients of size, profitability, and tangibility variables in long term model of FC panel are statistically different from zero. However, it shows the size has negative effect on long term debt decisions but profitability and tangibility have positive effect.

**Table 7***Firm Financial constraints and Pecking Order hypothesis*

Variables	FC Panel		NFC Panel	
	$\Delta$ LTD	$\Delta$ TD	$\Delta$ LTD	$\Delta$ TD
DEF/K	0.3928*** (3.30)	-0.4233 (-0.98)	0.0922** (0.35)	-0.1605 (-0.95)
Size	-0.0829** (-4.23)	0.0812 (1.47)	0.0023 (0.25)	-0.0638* (-1.75)
Profitability	1.492*** (3.46)	-0.4465 (-0.44)	-0.1568** (-2.05)	-0.8135* (-0.1.88)
Tangibility	0.7302** (5.54)	-0.8493** (-2.67)	0.0776 (1.38)	-0.2872 (-1.54)
Constant	0.2950* (2.00)	-0.1156 (0.25)	0.026 (0.30)	0.8174* (2.55)
<i>Adj.R</i> <sup>2</sup>	41.69%	10.52%	9.10%	9.11%
<i>N</i>	76	76	168	168

*t* statistics in parentheses\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

These results are in line of pecking order model because (Shyam-Sundar & Myer, 1999) argued if pecking order model is true DEF/K should subsume the firm characteristics variables. Contrastingly NFC firm's debt issue or retirement decisions are less affected by DEF/K variable. In these models, intercepts are greater than zero and significant in LTD model. In FC and NFC panel of firms, size variables have positive impact on debt decisions particularly in LTD and TD model respectively. The coefficients of profitability and tangibility variables are inconsistent and but statistically significant in some models. These results contradict with the finding of (Ogden & Wu, 2012) (Titman & Wessels, 1988) and (Shyam-Sundar & Myer, 1999) among others.

### Conclusions and Implications

Firms financing decisions were partially explained by their internal profitability, risk, size, and collateral. Risk and profitability negatively impact the debt level while tangibility had positive impact. Agency and information problems might be the reasons

behind such debt behavior of firms. Further, it can be concluded that the financing constraints have differential impact on firm's financing decisions. The financially constrained firms are more prone to apply pecking order in their debt issue decisions but similar is not the case for not-financially constrained firms. This study finding does not confirm the application of pecking order in Nepalese enterprises but it disclosed that the debt is the dominant source of external financing in financially constrained firms. The financial deficiency coefficients of FC panel are substantially higher than NFC panel suggesting the possibility of pecking order more pronounced in financially constrained firms.

The major theoretical implication of this study supports the line of enquiry-based on agency theory, information theory, credit rationing and bankruptcy theory rooted to Akerlof (1970), Myers & Majluf (1984), Stiglitz & Weiss (1981) Bernanke & Gertler (1989) and Gertler (1992) among others. It suggested to address the frictions like information, agency, bankruptcy, and transaction costs in capital markets that create a wedge between cost of internal and external finance. The practical implication of this study suggests; the firm specific financial factors like strong internal cashflows, and collateral or networth of the firms could alleviate different forms of market imperfections and encourage easy access to financing of the firms. Most importantly, the measures of corporate governance help to reduce the agency and information problems and increase investment. Next, a firm's capacity to trade off its financial risk with some firm specific attributes shapes most of the financing policies of Nepalese enterprises. These financial risks bearing capacity of the firms can be significantly improved with their profitability, sales growth, NDTs and collateral; hence, these factors are imperative to design the optimal capital structure and maximize their values.

### References

- Akhtar, S., & Oliver, B. (2009). Determinants of capital structure for Japanese multinational and domestic corporations. *International Review of Finance*, 9(1–2), 1–26.
- Ali, L. (2011). The determinants of leverage of the listed-textile companies in India. *European Journal of Business and Management*, 3(12), 54–59.
- Alman, J. (1984). The bankruptcy cost of financial distress. *Journal of Financial Economics*, 13(3), 343-374.

- Almeida, H., & Campello, M. (2010). Financing frictions and the substitution between internal and external funds. *Journal of Financial and Quantitative Analysis*, 45(3), 589–622.
- Alti, A. (2006). How persistent is the impact of market timing on capital structure? *The Journal of Finance*, 61(4), 1681–1710.
- Antoniou, A., Guney, Y., & Paudyal, K. (2002). *The determinants of corporate capital structure: Evidence from European countries*. Durham: Department of Economics and Finance, University of Durham.
- Antoniou, A., Guney, Y., & Paudyal, K. (2008). The determinants of capital structure: Capital market-oriented versus bank-oriented institutions. *Journal of Financial and Quantitative Analysis*, 43(01), 59–92.
- Baker, M., & Wurgler, J. (2002). Market timing and capital structure. *The Journal of Finance*, 57(1), 1–32.
- Baker, M., Greenwood, R., & Wurgler, J. (2003). The maturity of debt issues and predictable variation in bond returns. *Journal of Financial Economics*, 70(2), 261–291.
- Banerjee, A., & Duflo, E. (2014). The role of directed lending in credit market development: Evidence from a field experiment in India. *American Economic Review*, 104 (7), 2107-2131.
- Barnea, A., Haugen, R. A., & Senbet, L. W. (1981). Market imperfections, agency problems, and capital structure: A review. *Financial Management*, 7–22.
- Barry, C. B., Mann, S. C., Mihov, V. T., & Rodriguez, M. (2008). Corporate debt issuance and the historical level of interest rates. *Financial Management*, 37(3), 413–430.
- Baxter, N. D. (1967). Leverage, risk of ruin and the cost of capital. *The Journal of Finance*, 22(3), 395–403.
- Bayrakdaroglu, A., Ege, I., & Yazici, N. (2013). A panel data
- Beattie, V., Goodacre, A., & Thomson, S. J. (2006). ‘Corporate financing decisions: UK survey evidence. *Journal of Business Finance & Accounting*, 33(9–10), 1402–1434.
- Beck, T., Demirgüç-Kunt, A. S. L. I., & Maksimovic, V. (2005). Financial and legal constraints to growth: Does firm size matter? *The Journal of Finance*, 60(1), 137–177.
- Beck, T., Demirgüç-Kunt, A., & Maksimovic, V. (2004). *Financial and legal institutions and firm size*. Mimeo: World Bank.

- Booth, L., Aivazian, V., Demiguc-Kunt, A., & Maksimovic, V. (2001). Capital structures in developing countries. *Journal of Finance*, 56(1), 87–130.
- Boyle, G. W., & Eckhold, K. R. (1997). Capital structure choice and financial market liberalization: evidence from New Zealand. *Applied Financial Economics*, 7(4), 427–437.
- Bradley, M., Jarrell, G. A., & Kim, E. (1984). On the existence of an optimal capital structure: Theory and evidence. *The Journal of Finance*, 39(3), 857–878.
- Brennan, M. J., & Schwartz, E. S. (1984). Optimal financial policy and firm valuation. *The Journal of Finance*, 39(3), 593– 607.
- Brounen, D., de Jong, A., & Koedijk, K. (2006). Capital structure policies in Europe: Survey evidence. *Journal of Banking & Finance*, 30(5), 1409–1442.
- Byoun, S. (2008). How and when do firms adjust their capital structures toward targets? *The Journal of Finance*, 63(6), 3069–3096.
- Byoun, S., & Rhim, J. C. (2005). Tests of the pecking order theory and the tradeoff theory of optimal capital structure. *Global Business and Finance Review*, 10(2), 1.
- Camara, O. (2012). Capital structure adjustment speed and macroeconomic conditions: US MNCs and DCs. *International Research Journal of Finance and Economics*, 84(1), 106–120.
- Cheng, S. R., & Shiu, C. Y. (2007). Investor protection and capital structure: International evidence. *Journal of Multinational Financial Management*, 17(1), 30–44. <https://doi.org/10.1016/j.mulfin.2006.03.002>
- Frank, M. Z., & Goyal, V. K. (2009). Capital structure decisions: Which factors are reliably important? *Financial Management*, 38(1), 1-37.
- Gaud, P., Gnanarajah, S., & Scholtens, B. (2005). The determinants of capital structure choice: A survey of European SMEs. *Small Business Economics*, 25(1), 49-63.
- Harris, M., & Raviv, A. (1991). The theory of capital structure. *Journal of Finance*, 46(1), 297-355.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Kim, W., & Sorenson, R. (1986). Agency problems and the theory of the firm: Some evidence. *Journal of Law, Economics, & Organization*, 2(1), 225-245.
- Lang, L. H., Ofek, E., & Stulz, R. M. (1995). Leverage, investment, and firm growth. *Journal of Financial Economics*, 38(1), 3-28.

- Marsh, P. (1982). The choice between equity and debt: An empirical study. *Journal of Finance*, 37(1), 121-144.
- Modigliani F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment *American Economic Review*, 48(3), 261-297.
- Morellec, E., Nikolov, B., & Schürhoff, N. (2012). Corporate governance and capital structure dynamics. *The Journal of Finance*, 67(3), 803–848.
- Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, 5(2), 147–175.
- Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance*, 39(3), 574–592.
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187–221.
- Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *Journal of Finance*, 50(5), 1421-1460.
- Sayilgan, G., Kutun, A. M., & Soytaş, U. (2006). The determinants of capital structure: Evidence from Turkish SMEs. *Small Business Economics*, 27(1), 65-74.
- Sheikh, N. A., & Wang, Z. (2011). Determinants of capital structure: An empirical study of firms in manufacturing industry of Pakistan. *Managerial Finance*, 37(2), 117–133.
- Singh, K., & Hodder, J. E. (2000). Multinational capital structure and financial flexibility. *Journal of International Money and Finance*, 19(6), 853–884.
- Stieglitz, J. (1981). Credit rationing in markets with imperfect information. *American Economic Review*, 71(3), 393-410.
- Taggart, R. A. (1977). The determinants of capital structure: An empirical analysis. *Journal of Financial Economics*, 5(4), 287-298.
- Tang, C. H. H., & Jang, S. S. (2007). Revisit to the determinants of capital structure: A comparison between lodging firms and software firms. *International Journal of Hospitality Management*, 26(1), 175–187.
- Tarek, I. E. (2007). Determinants of corporate capital structure: evidence from an emerging economy. *International Journal of Commerce and Management*, 17(1/2), 25–43.
- Thies, C. F., & Klock, M. S. (1992). Determinants of capital structure. *Review of Financial Economics*, 1(2), 40–52.
- Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. *The Journal of Finance*, 43(1), 1–19.





## Effect of Leaf Extracts of *Lantana Camara* L. on Germination and Growth of Some Crops Species

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### Abstract

*Allelopathy is a biotic interaction between plants where one plant inhibits the germination and growth of other plants by releasing certain allelochemicals. In this research we evaluated the allelopathic effect of aqueous leaf extract of Lantana camara on the germination and growth of four crop plants. The experiment was conducted in sterilized petri dishes in Botany lab of Saptagandaki Multiple Campus, Bharatpur, Chitwan, Nepal. The effect of different concentrations of extracts was studied and compared with the control. The results revealed that the germination and seedling growth of all species were significantly inhibited at different concentrations as compared to the control. The lowest germination percentage and seedling growth was found in Brassica campestris and Oryza sativa plant respectively and effect was least in Triticum aestivum plant at 10% concentration. The germination percentages, seedling growth and, biomass in all species were observed to reduce, with the increasing concentration of aqueous extracts. The study concluded that Lantana camara leaf extract allelochemicals have adverse effects on germination, seedling growth and dry matter accumulation of all tested crops.*

**Keywords:** Allelochemicals, *Lantana camara*, allelopathic, germination rate, aqueous extract.

### Introduction

Biological invasion is one of the key drivers hindering agriculture production, causing biodiversity loss, and negatively impacting ecosystem services (Rai & Singh 2020). Agricultural lands are one of the heavily invaded areas by an alien (invasive) weeds and its abundant growth has been reported on the croplands (Khatri *et al.*, 2022). Invasive plants species produce large numbers of offspring, with greater chances of spreading widely (Ratnayake, 2015) and liberate allelochemicals into the soil reduce

crop germination and growth (Hoque *et al.*, 2003). Invasive species are considered as rich source of allelochemicals and are released into the rhizosphere of the plants by rainfall leachates, decomposition of plant residues, root exudation, and volatilization from living plants parts (Rich, 1984; Bonanomi *et al.*, 2006). Allelochemicals have various effects including declining rate of germination, reducing the growth of root and shoot of seedling, injury to root tips, reduction the chlorophyll content and, increase in crop sterility (Bhadoria, 2011). The allelopathic action of stimulatory and inhibitory is dependent on the concentration (Hill *et al.*, 2006). Higher concentration of allelochemicals have been observed to have inhibitory effect (Singh, 2019) while lower concentrations exert stimulatory allelopathic impact on seed germination and growth of plant (Sahoo *et al.*, 2010).

*Lantana camara* is a fast growing woody shrub of verbenaceae family and is native to tropical and subtropical America (Zalucki *et al.*, 2007). It was introduced in Nepal accidentally and spread over large areas of land that has a significant impact on agriculture production (Shrestha, 2016) Several allelochemicals such as phenolic compounds, sesquiterpenes, triterpenes, flavonoid; Lantadene A and Lantadene B were isolated from leaves (Kong *et al.*, 2006) and able to inhibit germination, seedling establishment, and plant growth of agricultural crops (Kato & Kurniadie, 2021). These allelochemicals released from *Lantana camara* may provide the species with a competitive advantage against the native plants and may also suppress the rejuvenation process of native plant species and contribute to establish their habitats as invasive plant species (Kato & Kurniadie, 2021). Allelochemicals has suppressed the growth of plant species grown next to it which is a serious problem in agricultural land and no remedy is yet found. Allelopathic activities of *Lantana camara* on variety of species, have so far been done, however such work is not sufficient yet. This research aims to explore the response of allelochemical on seed germination and seedling growth of common cultivated crop species.

## Materials and Methods

This study was done in the Department of Science Laboratory of Saptagandaki Multiple Campus, Tribhuvan University, Bharatpur, Chitwan, Nepal. Bharatpur has tropical monsoon climate with humidity all through the year. The area is located in the south-central lowland area of Nepal in the coordinates of 27°34'N to 27°45'N and

84° 19'E to 84° 29'E with altitudinal variation of 181 to 271 m. The temperature rises up to 34°C in the summer (May) and decreases to 7°C in the winter (January) with 1,993 mm average annual rain fall (<https://www.weather-atlas.com/en/nepal/bharatpur-climate>). The typical vegetation is broadleaf forest with predominantly Sal (*Shorea robusta*) tree covering about 70% of the National Park.

### **Seed Collection and Sterilization**

Healthy uniform seeds of *Oryza sativa* L. (Rice), *Triticum aestivum* L. (Wheat), *Brassica campestris* L. (Mustard), *Lens culinaris* Medik. (Musuro) were used as test plants for initial screening of species to check allelopathic effect. Before germination test the seeds were surface sterilized with 5% alcohol for 20 min, then rinsed with the distilled water for several times to remove excess alcohol. The seeds varieties for experiments were verified by Agro Ecology Lab of the AFU (Agriculture and Forestry University), Rampur, Chitwan, Nepal.

### **Study Species Characters**

*Lantana camara* L. (Verbenaceae) is a woody shrub native to Central and South America and is regarded as one of the ten worst invasive species in the world (Richardson & Rejmanek 2011). It was introduced as an ornamental shrub berry plant in India, from where it escaped and became invasive in India and Nepal. The plant is profusely branched and grows up to 2–4 meters high in open un-shaded sunny environments, and as a liana up to 15 m when light intensity is low (Lowe *et al.*, 2000). It is shade-tolerant with long petioles, oblong blades, hairy, and serrate leaves. Flowers are tiny, multicolored, and densely clustered in flat-topped clusters and produce 10,000–12,000 fruits and are very commonly distributed across the forests and agricultural land of Nepal.

### **Collection of Plant Material**

Fresh *Lantana camara* leaves in vegetative stage were collected in March, 2022 from the edge of agricultural field around the Bharatpur Metropolitan city -7 Prembasti, Chitwan (GPS Location: latitude 27. 3857°N and longitude 84. 2445° E.). The leaves were washed thoroughly with tap water to remove dust particles and allowed to air dried at room temperature in the shade for 60 hours. The dried leaves were then sealed in a Zipper bag to keep them air tight. The air dried leaves were ground into a

fine powder with the help of grinder and then was stored in air tight plastic bag at room temperature before used for experiments.

### **Preparation of Aqueous Extract**

Fifty grams of air-dried grounded leaves of *Lantana camara* were soaked in 500 ml of distilled water (considered as 100% concentration) and kept airtight and left for 24 hrs. in the existing dark room temperature (average during the day, 25°C) for extraction. The aqueous extract was obtained as filtrate by using Whatman's filter paper of the mixture and the final volume of the collected filter was adjusted to 500ml; this gave 10% aqueous extract. The extract was considered as stock solution and a series of solutions with different strengths (2, 4, 6 and 8%) were prepared by dilution.

The following treatments were followed during the experiment:

**Control:** Seeds grown in distill water only;

**T<sub>1</sub>:** Seeds grown in extracts of 2% concentration;

**T<sub>2</sub>:** Seeds grown in extracts of 4% concentration;

**T<sub>3</sub>:** Seeds grown in extracts of 6% concentration;

**T<sub>4</sub>:** Seeds grown in extracts of 8% concentration;

**T<sub>5</sub>:** Seeds grown in extracts of 10% concentration.

### **Germination Test and Growth Records**

For the germination and growth record, selected healthy seeds were rinsed with distilled water. Seeds were evenly distributed on the sterilized petri dish (150 mm×15 mm) which was double-lined with Whatmann's filter paper. The adjustment was wetted with 10 ml of different concentrations of stock solution (2 to 10%), including one as control with only distilled water. Ten uniform and surface sterilized seeds of *Oryza sativa* (Rice), *Triticum aestivum* (Wheat), *Brassica campestris* (Mustard) and, *Lens culinaris* (lentil) were placed for germination. Each treatment had three replicas (total number of seeds 10×3=30). The entire experiment was conducted in a laboratory setting (Room temperature of 25°C during the day). When the moisture of the filter paper began to decline, an equivalent volume of distilled water was added to the dishes. The experiment was extended over a period of seven days (1 week) to allow the last seed germination and the measurement of the shoot and root length. A seed was considered germinated when a radicle emerged. Germinated seeds were counted daily

and the total number of seeds germinated at various concentrations was recorded till the last day.

The length of the root and shoots were measured at the end of the experiment. And those roots and shoots were separated and their wet weight was noted down separately and kept in a hot air oven at 70°C temperature for 48 hours and their dry weight was taken.

### **Statistical Analysis**

The results were quantified as Germination percentage, Relative germination ratio, Germination inhibition rate, root and shoot length growth and seedling biomass by Rho & Kil (1986).

### **Germination Percentage**

The germination percentage was calculated by the using the following formula.

$$\text{Germination percentage (\%)} = \frac{\text{No. of seeds germinate}}{\text{Total seeds}} \times 100$$

### **Relative Germination Ratio**

The relative germination ratio was calculated by the following equations.

$$\text{Relative germination ratio (R)} = G/G_r \times 100$$

Where, R is the relative germination ratio, G the germination ratio of tested plant, and  $G_r$  is the germination ratio of control.

### **Germination Inhibition Rate**

For the calculation of percentage of inhibitory (or stimulatory) effect on germination and growth parameters of treatment plants to control, we used the following formula:

$$I = 100 - (E_2 \times 100/E_1)$$

Where, I is the % inhibition (or stimulation);  $E_1$  the response of control plant, and  $E_2$  the response of treatment plant.

### **Growth Parameters**

The growth parameters such as shoot length and root length were recorded at 7 days using a centimeter scale. The seedling length was calculated by using formula:

## **Biomass**

All root and shoot from each seedling were cut separately and oven dried at 70°C for 48 h to get dry biomass of root and shoot; total seedling biomass of seedling was calculated as the sum of biomass of root and shoot.

The data collected from the experiments were subjected to descriptive statistics to calculate mean, standard error of germination and growth records. Significance of the difference in root and shoot length of seedlings under different treatments were tested and compared using Analysis of Variance (ANOVA) and Tukey multiple comparison test. All statistical analyses were done using Statistical Package for Social Sciences (IBM SPSS statistics version 25).

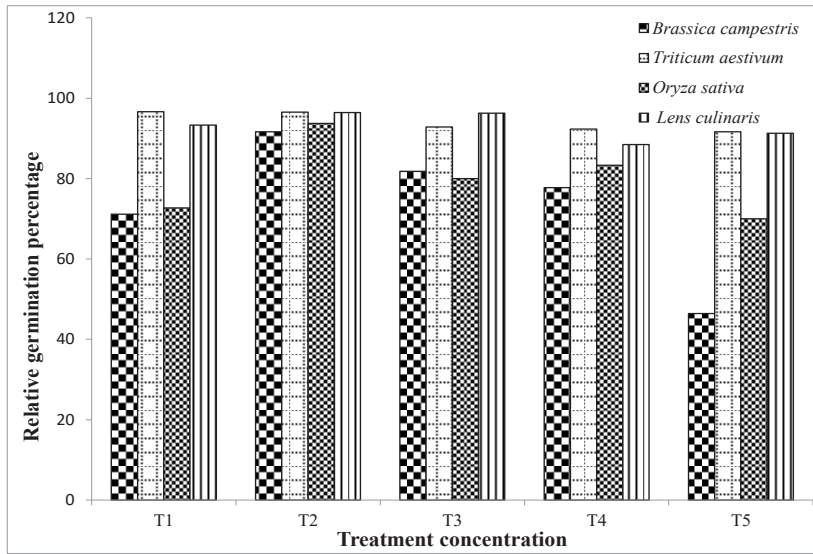
## **Results and Discussion**

### **Germination**

The effects of aqueous extracts of *lantana camera* leaf on seed germination of the agricultural crops as compared to the control are shown in (Table 1). The aqueous extract inhibited the germination of all species. With the increase in concentration, the inhibitory effect gradually increased. In all species, the maximum inhibitory effect was found at 10% concentration as compared to others. The results further indicated that maximum germination was observed on *Triticum aestivum* and, *Lens culinaris* and, minimum germination was noted on *Oryza sativa* and, *Brassica campestris* (Table.1) The inhibition of germination was found strong in the *Brassica campestris* (16.66 %) and, *Oryza sativa* (23.33 %). The maximum relative germination ratio was found in *Triticum aestivum* (96.66%) at 2% treatment while the minimum was (46.42%) in *Brassica campestris* at 10% treatment (Figure 1).

**Figure 1**

*Relative germination percentage of studied species under different treatment of leaf aqueous extract of Lantana camara*



$T_1$ : Seeds grown in extracts of 2% concentration;  $T_2$ : Seeds grown in extracts of 4% concentration;  $T_3$ : Seeds grown in extracts of 6% concentration;  $T_4$ : Seeds grown in extracts of 8% concentration;  $T_5$ : Seeds grown in extracts of 10% concentration.

**Table 1**

*Effect of aqueous extract of Lantana camera leaf on germination of different plant species measured after seven days.*

Treatment	<i>Brassica campestris</i>	<i>Triticumaestivum</i>	<i>Oryza sativa</i>	<i>Lens culinaris</i>
Control	86.66 a*	99.53 a	73.33 a	99.67 a
$T_1$	40 b (-53.84)	96.66 a (-3.33)	53.33 a (-27.27)	93.33 ab (-6.66)
$T_2$	36.66 bc (-8.33)	93.33 a (-3.44)	50 b (-6.25)	90 ab (-3.57)
$T_3$	30 bc (-18.18)	86.66 a (-7.14)	40 a (-20)	86.66 ab (-3.70)
$T_4$	23.33 c (-22.22)	80 a (-7.69)	33.33 a (-16.66)	76.66 ab (-11.53)
$T_5$	16.66 c (-28.57)	73.33 a (-8.33)	23.33 b (-30)	70 b (-8.69)

**Control:** Seeds grown in distill water only; **T1:** Seeds grown in extracts of 2% concentration; **T2:** Seeds

grown in extracts of 4% concentration; **T3**: Seeds grown in extracts of 6% concentration; **T4**: Seeds grown in extracts of 8% concentration; **T5**: Seeds grown in extracts of 10% concentration.

\*Values in the columns followed by the same letter (s) are not significantly different ( $P \leq 0.05$ ) according to Tukey multiple comparison test. Values in the parenthesis indicate the inhibitory effects in comparison to control treatments.

### Seedling Growth

The seedling growth was greatly altered with the increased concentration, decreased the growth of root and shoot length by the aqueous extract of *Lantana camara* leaf. Those, the overall growth on extract concentration were lower than in control. The root length growth of crop seedlings was more suppressed than their shoot length growth. There was a significant difference  $p \leq 0.000$  between treatments in root and shoot length of all tested species (Table 2). Among crops, seedling growth of *Oryza sativa* and *Brassica campestris* were proved to be more vulnerable to allelochemicals of *Lantana camara* leaf aqueous extracts.

**Table 2**

*Analysis of Variance (ANOVA) in root and shoot length of different plant species among different treatments of leaf aqueous extract of Lantana camera*

Plant species	Parameters	F	Sig.
<i>Brassica campestris</i>	Shoot length	11.285	$p < 0.0001$
	Root length	12.942	$p < 0.0001$
<i>Triticumaestivum</i>	Shoot length	6.385	$p < 0.0001$
	Root length	26.512	$p < 0.0001$
<i>Oryza Sativa</i>	Shoot length	12.631	$p < 0.0001$
	Root length	14.311	$p < 0.0001$
<i>Lens culinaris</i>	Shoot length	47.497	$p < 0.0001$
	Root length	40.701	$p < 0.0001$

*F* is degree of freedom for all treatments.

### Shoot Length

The aqueous extract of *Lantana camara* leaf inhibited the shoot length growth of all tested seeds. The shoot length was gradually decreased with increased concentration



of *Lantana camera* leaf extract. The inhibitory effect was more pronounced at 10% treatment followed by 8%, 6%, 4% and 2% treatments respectively. The statistical analysis shows that aqueous extracts of leaf significantly decrease the shoot length growth as compared to the control. The minimum shoot length was noted in *Oryza sativa* i.e. 2.13cm in control and almost negligible in 10% concentration. The maximum shoot length was found in *Triticum aestivum*, *Lens culinaris* and *Brassica campestris* respectively after control at 2% and while increasing the concentration of extracts, shoot length was decreased significantly (Table 3).

**Table 3**

*Effect of aqueous extract of Lantana camera leaf on shoot length of different plant species measured after seven days*

Treatments	<i>Brassica campestris</i>	<i>Triticum aestivum</i>	<i>Oryza sativa</i>	<i>Lens culinaris</i>
Control	7.93 ± 0.52 a*	11.4 ± 0.58 a	2.13 ± 0.17 a	10.21 ± 0.54 a
T <sub>1</sub>	7.73 ± 0.67 b (2.52)	10.73 ± 0.67 a (5.87)	1.87 ± 0.18 b (12.20)	9.4 ± 0.48 a (7.93)
T <sub>2</sub>	7.50 ± 0.69 b (5.24)	10.57 ± 0.67 a (9.47)	1.2 ± 0.12 bc (43.66)	8.33± 0.56 b (18.41)
T <sub>3</sub>	5.4 ± 0.43 bc (31.90)	7.5 ± 0.71 a (34.59)	0.86 ± 0.11 bc (59.62)	5.57 ± 0.58 b (45.44)
T <sub>4</sub>	3.07 ± 0.22 c (61.28)	7.0 ± 0.71 ab (38.59)	0.43 ± 0.03 c (79.81)	5.46 ± 0.40 b (46.52)
T <sub>5</sub>	2.9 ± 0.39 bc (63.43)	6.81 ± 0.87 b (40.26)	0.4 ± 0.04 c (81.22)	1.93 ± 0.27 c (81.09)

**Control:** Seeds grown in distill water only; **T1:** Seeds grown in extracts of 2% concentration; **T2:** Seeds grown in extracts of 4% concentration; **T3:** Seeds grown in extracts of 6% concentration; **T4:** Seeds grown in extracts of 8% concentration; **T5:** Seeds grown in extracts of 10% concentration.

\*Values in the columns followed by the same letter (s) are not significantly different (P≤0.05) according to Tukey multiple comparison test. Values in the parenthesis indicate the inhibitory effects in comparison to control treatments. ± represent standard errors, n = 30.

## Root Length

The root length growth was inhibited with the increased concentration of *Lantana camara* leaf aqueous extract. The inhibitory effect was prominent at 10% treatment in all tested species. The results indicated that extract caused root length reduction of all four species as compared to the control (Table 4). The highest root length inhibition was exhibited by *Oryza sativa*, followed by *Brassica campestris* with increasing the concentration of aqueous extract. The maximum root length was shown in *Triticum aestivum* (10.03cm), *Lens culinaris* (7.1cm), *Brassica campestris* (6.1cm) and, *Oryza sativa* (4.86cm) in control, whereas minimum root length growth was found in *Oryza sativa* (0.57 cm), *Brassica campestris* (0.83 cm), *Lens culinaris* (1.13 cm) and, *Triticum aestivum* (5.41 cm) in 10% concentration.

**Table 4**

*Effect of aqueous extract of Lantana camera leaf on root length of different plant species measured after seven days*

Treatments	<i>Brassica campestris</i>	<i>Triticumaestivum</i>	<i>Oryza sativa</i>	<i>Lens culinaris</i>
Control	6.1±0.47 a*	10.23±0.68 a	4.86±0.33 a	7.1±0.13 a
T <sub>1</sub>	3.8±0.55 b (37.70)	10.03±0.67 a (1.95)	4.06±0.32 b (16.46)	6.76±0.42 a (4.78)
T <sub>2</sub>	3.26±0.5 bc (46.55)	9.61±0.67 a (6.06)	1.67±0.19 bc (65.63)	3.6±0.34 b (49.29)
T <sub>3</sub>	2.27±0.18 c (62.78)	8.46±0.68 a (21.22)	1.5±0.15 bc (69.13)	2.7±0.34 b (61.97)
T <sub>4</sub>	1.27±0.09 c (79.18)	8.20±0.69 b (19.84)	0.76±0.08 c (84.36)	2.3±0.30 b (67.60)
T <sub>5</sub>	0.83±0.16 bc (86.39)	5.41±0.41 c (56.98)	0.57±0.54 c (88.27)	1.13±0.12 c (84.08)

**Control:** Seeds grown in distill water only; **T1:** Seeds grown in extracts of 2% concentration; **T2:** Seeds grown in extracts of 4% concentration; **T3:** Seeds grown in extracts of 6% concentration; **T4:** Seeds grown in extracts of 8% concentration; **T5:** Seeds grown in extracts of 10% concentration.

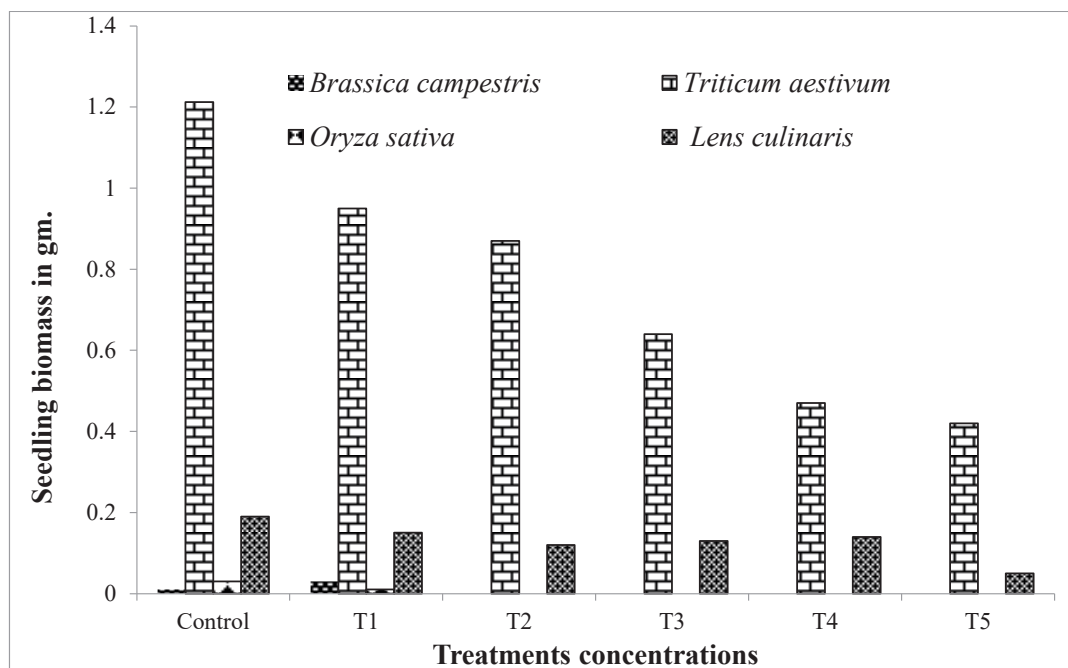
\*Values in the columns followed by the same letter (s) are not significantly different ( $P \leq 0.05$ ) according to Tukey multiple comparison test. Values in the parenthesis indicate the inhibitory effects in comparison to control treatments.  $\pm$  represent standard errors,  $n = 30$ .

## Biomass

The seedling biomass gradually decreased as the concentration of *lantana camara* extract increased. Among the tested species, *Triticum aestivum* seedlings biomass was the highest and followed by *Lens culinaris* (Figure 2). The minimum biomass value of 0.01 g was recorded in *Brassica campestris* at control. The biomass of *Oryza sativa* and *Brassica campestris* as concentration increased was completely negligible. The value couldn't be measured because the mass was beyond the limit of our balance (0.001g).

**Figure 2**

Seedling biomass in g. of the tested species under different treatment of leaf aqueous extract of *Lantana camara*.



**Control:** Seeds grown in distill water only; **T1:** Seeds grown in extracts of 2% concentration; **T2:** Seeds grown in extracts of 4% concentration; **T3:** Seeds grown in extracts of 6% concentration; **T4:** Seeds grown in extracts of 8% concentration; **T5:** Seeds grown in extracts of 10% concentration.

## Discussion

The study demonstrated that leaf aqueous extracts of *Lantana camera* exhibited significant inhibitory effects on seed germination and seedling growth of all the receptor crops compared to the control treatment. Ahmed *et al.*, (2007) also reported that leaf aqueous extract of *Lantana camera* resulted inhibitory effects on germination and growth behavior of some agricultural crops. The findings were in agreement with the (Talhi *et al.*, 2020) who reported that *Lantanacamera* release certain secondary metabolites as phenolic acids (Narwal, 1994) or/and phytotoxic chemicals, called as allelochemicals. Such allelochemicals hampers the seed germination and seedling growth due to the suppression of cellular membrane developments and increase in the production of reactive oxygen forms (Gindri *et al.*, 2020). According to Kong *et al.*, (2006) Lantadene A and lantadene B were isolated from aqueous extracts of *Lantana camara* leaves as allelochemicals. Phenolics are the most common and widely distributed water soluble allelochemicals (Jain *et al.*, 1989). The escape of these chemicals into the environment occurs through various mechanisms such as leachation, volatilization and microbial decay of dead and fallen parts, as well as root exudation (Rice, 1984). Presence of such allelochemicals in the plant extracts may prevent the growth of seed embryo or caused its death (Abugreet *et al.*, 2011). These chemicals were reported to have had allelopathic potential on various crops (Abhaet *et al.*, 2012). The roots and shoots elongation of the studied species is reduced when treated with increasing concentrations of extracts compared to the control. This reduction might be due to the allelopathic effects of the phytochemicals which are mainly polyphenols and alkaloids (Ambikaet *et al.*, 2003) and the phytotoxicity of the aqueous extract due to the interaction of these compounds (Talhi *et al.*, 2020).

The leaf extracts inhibited root growth of *Triticum aestivum*, *Brassica campestris*, *Lens culinaris*, and *Oryza sativa* with increasing extract concentrations and hence, it is concentration dependent (Table 2). From the homogeneity test it was found that the shoot length of *Triticumaestivum* and *Lens culinaris* at 2% concentration were not significantly different whereas *Brassica campestris* and *Oryza sativa* were significantly different from that of control; in case of root length at the same concentration (2%) from the control observed same result. This results indicats that the effects of leaf extracts on root and shoot growth was species specific *i.e.* *Triticumaestivum* and *Lens culinaris* pronounced less effect than the rest of the

species. Plants containing allelochemicals can affect germination and seedling growth of other plants in a concentration dependent manner and the effects of these chemicals are selective and can vary with different plant species (Hossain & Alam, 2010). In all crops species, shoot growth was comparatively less affected by the leaf extracts than root growth. More sensitive and stronger responses of roots of the crops to *Lantana camara* leaf extracts might be due to close contact of the root with the extract solution (Tefera, 2002).

In present study there were strong inhibition in seed germination of the *Brassica campestris* and *Oryza sativa* in 2% concentration and above this. The seeds appeared to be the most sensitive among the test species to inhibitory effect of leaf aqueous extract of *Lantana camara*. Since mustard and rice are important crops, invasion by *Lantana camara* into agricultural land may have adverse effect on their production. In contrast, when the seeds of maize and finger millet treated with *Lantana camara* leaf extracts exerted a positive action on germination and growth of roots and shoots (Tadele, 2014). The results, thus, indicate the possibility to cultivate maize and finger millet in agricultural lands invaded by *Lantana camara* after its removal or growth of these crops close to *Lantana camara* thickets. However, this result reveals that negative effect when treated with aqueous leaf extract of *Lantana camara* on tested crop species like *Triticum aestivum*, *Brassica campestris*, *Lens culinaris* and *Oryza sativa*. Gentle & Duggin (1997) reported that *Lantana camara* had significant reduction effect on biomass and it was associated with inhibited growth of the seedlings (Tripathi *et al.*, 2000). There is variation on biomass with increase in concentration.

### Conclusion and Implication

The aqueous leaf extracts of the *Lantana camara* has critical inhibitory effect on germination and seedling growth of *Brassica campestris* and *Oryza sativa* than *Triticum aestivum* and *Lens culinaris*. Similarly the effect was strong on root elongation than shoot elongation. The allelochemicals effect on germination and seedling growth is concentration-dependent and, can vary with different plant species. Though laboratory bioassays are important to signal out the allelopathic effects, it requires analyzing the significance of these results under field conditions. This is because factors such as environmental conditions and plant interactions can influence the expression of allelopathic effects in natural settings, which may not be fully captured in laboratory

experiments. Therefore, it is important to assess the relevance of laboratory findings in field conditions to gain a better understanding of the potential impact of allelopathy on plant communities. We suggest that further investigations are required to better understand the underlying causes and actual mechanisms responsible for the differential effects of leaf allelochemicals on crop plants.

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### References

- Abha, S., Satsangi, G. P., & Srivastava, J. N. (2012). Allelopathic aspects of *Lantana camara* on germination and seedling growth of *Lens esculanta*. *Vegetos*, 25(1), 233-235.
- Abugre, S., Apetorgbor, A. K., Antwiwaa, A., & Apetorgbor, M. M. (2011). Allelopathic effects of ten tree species on germination and growth of four traditional food crops in Ghana. *Journal of Agricultural Technology*, 7(3), 825-834.
- Ahmed, R., Uddin, M. B., Khan, M. A. S. A., Mukul, S. A., & Hossain, M. K. (2007). Allelopathic effects of *Lantana camara* on germination and growth behavior of some agricultural crops in Bangladesh. *Journal of Forestry Research*, 18(4), 301-304.
- Ambika, S. R., Poornima, S., Palaniraj, R., Sati, S. C., & Narwal, S. S. (2003). Allelopathic plants. 10. *Lantana camara* L. *Allelopathy journal*, 12(2), 147-161.
- Bhadoria, P. B. S. (2011). Allelopathy: a natural way towards weed management. *American Journal of Experimental Agriculture*, 1(1), 7-20.
- Bonanomi, G., Sicurezza, M. G., Caporaso, S., Esposito, A., & Mazzoleni, S. (2006). Phytotoxicity dynamics of decaying plant materials. *New Phytologist*, 169(3), 571-578.
- Gentle, C. B., & Duggin, J. A. (1997). *Lantana camara* L. invasions in dry rainforest-open forest ecotones: The role of disturbances associated with fire and cattle grazing. *Australian Journal of Ecology*, 22(3), 298-306.

- Gindri, D. M., Coelho, C. M. M., & Uarrota, V. G. (2020). Physiological and biochemical effects of *Lantana camara* L. allelochemicals on the seed germination of *Avena sativa* L. *Pesquisa Agropecuária Tropical*, 50.
- Hill, E. C., Ngouajio, M., & Nair, M. G. (2006). Differential response of weeds and vegetable crops to aqueous extracts of hairy vetch and cowpea. *HortScience*, 41(3), 695-700.
- Hoque, A. T. M. R., Ahmed, R., Uddin, M. B., & Hossain, M. K. (2003). Allelopathic effects of different concentration of water extract of *Eupatorium odoratum* leaf on germination and growth behavior of six agricultural crops. *OnLine Journal of Biological Science*, 3(8), 741-750.
- Hossain, M. K., & Alam, M. N. (2010). Allelopathic effects of *Lantana camara* leaf extract on germination and growth behavior of some agricultural and forest crops in Bangladesh. *Pakistan Journal of Weed Science Research*, 16(2).
- Jain, R., Singh, M., & Dezman, D. J. (1989). Qualitative and quantitative characterization of phenolic compounds from lantana (*Lantana camara*) leaves. *Weed Science*, 37(3), 302-307.
- Kato-Noguchi, H., & Kurniadie, D. (2021). Allelopathy of *Lantana camara* as an invasive plant. *Plants*, 10(5), 1028.
- Khatri, K., Bargali, K., Bargali, S. S., & Negi, B. (2022). Effects of leaf residues from *Ageratina adenophora* on germination, growth and productivity of two rabi crops. *Acta Ecologica Sinica*.
- Kong, C. H., Wang, P., Zhang, C. X., Zhang, M. X., & Hu, F. (2006). Herbicidal potential of allelochemicals from *Lantana camara* against *Eichhornia crassipes* and the alga *Microcystis aeruginosa*. *Weed Research*, 46(4), 290-295.
- Lowe, S., Browne, M., Boudjelas, S., & De Poorter, M. (2000). *100 of the world's worst invasive alien species: a selection from the global invasive species database* (Vol. 12). Auckland: Invasive Species Specialist Group.
- Narwal, S. S., & Tauro, P. (1994). Allelopathic problems in Indian agriculture and prospects of research. *Allelopathy in Agriculture and Forestry; Scientific Publishers: Jodhpur, India*, 37-57.
- Rai, P. K., & Singh, J. S. (2020). Invasive alien plant species: Their impact on environment, ecosystem services and human health. *Ecological indicators*, 111, 106020.

- Ratnayake, R. M. C. S. (2015). Why plant species become invasive? Characters Related to Successful Biological Invasion. Proceedings of the National symposium on invasive alien species. Colombo, Sri Lanka 1.
- Rho, B. J. (1986). Influence of phytotoxin from *Pinus rigida* on selected plants. *Korean J. Ecol.*, 10, 19-27.
- Rice, E. L. (1984). Allelopathy – an update. *Botanical Review*, 45(1), 15-109.
- Richardson, D. M., & Rejmánek, M. (2011). Trees and shrubs as invasive alien species—a global review. *Diversity and distributions*, 17(5), 788-809.
- Sahoo, U. K., Jeecelee, L., Vanlalhratpuia, K., Upadhyaya, K., & Lalremruati, J. H. (2010). Allelopathic effects of leaf leachate of *Mangifera indica* L. on initial growth parameters of few home garden food crops. *World Applied Sciences Journal*, 10(12), 1438-1447.
- Shrestha, B. B. (2016). Invasive alien plant species in Nepal. *Frontiers of botany*, 2016, 269-284.
- Singh, A. K. (2019). Inhibitory Effects of Weeds on Germination and Growth of *Vigna Radiata* (L) Wildzek. *Shodh Drishti*, 10(6), 67-71.
- Tadele, D. (2014). Allelopathic effects of Lantana (*Lantana camara* L.) leaf extracts on germination and early growth of three agricultural crops in Ethiopia. *Momona Ethiopian Journal of Science*, 6(1), 111-119.
- Talhi, F., Gherraf, N., & Zellagui, A. (2020). Allelopathic effect of the aqueous extract of *Lantana camara* L. on the germination and development of four vegetable species. *International Journal of Chemical and Biochemical Sciences*, 18, 116-121.
- Talhi, F., Gherraf, N., & Zellagui, A. (2020). Allelopathic effect of the aqueous extract of *Lantana camara* L. on the germination and development of four vegetable species. *International Journal of Chemical and Biochemical Sciences*, 18, 116-121.
- Tefera, T. (2002). Allelopathic effects of *Parthenium hysterophorus* extracts on seed germination and seedling growth of *Eragrostis tef*. *Journal of Agronomy and Crop Science*, 188(5), 306-310.
- Tripathi, S., Tripathi, A., Kori, D. C., & Paroha, S. (2000). Effect of *Dalbergia sissoo* extracts, rhizobium and nitrogen on germination, growth and yield of *Vigna radiata*. *Allelopathy Journal*, 2, 255-264.
- Zalucki, M. P., Day, M. D., & Playford, J. (2007). Will biological control of *Lantana camara* ever succeed? Patterns, processes & prospects. *Biological Control*, 42(3), 251-261.





## Telling an Untold Story of Pedagogical Practices in Mathematics Education in Nepal: Envisioning an Empowering Pedagogy

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### Abstract

*Conventional mathematics education practice glorifies the hypothetico-deductive reasoning and accompanying reductionist and piecemeal pedagogy and pushes us into the grips of pouring and 'one-size-fits-all' approach (Freire, 1993; Luitel, 2009; Lamichhane, 2021). It is still being practiced and occupies the dominant role in our schools and universities. In this background, the objectives of this research were to explore the roles of existing pedagogy behind a formation of a transmissionist image of pedagogy, thereby envisioning empowering/humanizing pedagogical practices. In so doing, I deployed an autoethnography research design (Bochner & Ellis, 2016) under interpretive, critical, and postmodern paradigms (Taylor, Taylor, & Luitel, 2012). Writing as a method of inquiry (Richardson & St. Pierre, 2017) has been used to generate field texts. To interpret and make meaning from the textual information, I have used Habermas's Knowledge Constitutive Interests (Habermas, 1972) and Jack Mezirow's Transformative Learning Theory (Mezirow, 1991) as theoretical referents. I have captured the pedagogical practices under three themes: -practice makes a man perfect! I am a successful teacher; he is our supporter! Please protect him! and I do not know anything! Prepare them for the exam. Likewise, a metaphor of empowering/humanizing pedagogy has been proposed as an inclusive pedagogy. Finally, I revealed that empowering/humanizing pedagogy supports connecting mathematical activities to the lifeworld of the learners. It promotes agentic aspects of the learners and helps them to become informed and conscious citizens so that they can contribute to creating an inclusive and socially just society.*

**Keywords:** *Empowering/humanizing pedagogy; Pouring pedagogy; Socio-cultural and historical perspectives; Transformative mathematics education*

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## Emergence of Research Issue

This research is based on the first authors' Master of Philosophy (MPhil) dissertation. It explored the first author's lived experiences of pedagogical practices. The second author is a supervisor and mentor who has played a significant role in bringing this research into this form. As we witnessed, the pedagogical practices of our schools are dominated by transmissionism and supported by a behaviourist school of thought. The behaviourist school described teaching-learning activity as a stimulus-response process (Bower & Hilgard, 1986). It ignores humans' potential for learning and their cognitive capability. Highlighting the characteristics of modern formal mathematics classes, Taylor et al. (2007) argue that school becomes a place where teachers tell many lies to students in which there is no opportunity for students to share their true feelings and experiences.



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I (the first author) rarely got an opportunity to share my true feeling, emotion, and experience during my school and university years. Students' voices were silently ignored and compelled to accept '*taken-for-granted assumptions*' as legitimate and authentic knowledge. Teaching-learning activities seem to pour information into the empty minds of the learners. It is akin to Freire's (1993) banking concept.

Banking pedagogy overlooks students' cognitive, lingual, ethnic and socio-cultural diversity and adopts the '*one-size-fits-all*' approach. This disempowering pedagogical culture impacts our beliefs, thoughts, and practices and seems responsible for germinating negative beliefs, attitudes and perceptions towards mathematics. It is a great challenge to change our meaning perspective or deep-seated mindsets of conventional pouring pedagogy because practitioner actions explicitly/implicitly rest on their worldviews (Lerman, 1990). Without changing the deep-seated meaning scheme, it is challenging to transform pouring pedagogy into more authentic and empowering ones (Mezirow, 1991). It creates confusion and discomfort and compels me to engage in critical reflective practices to envision empowering pedagogy. In this regard, I have formulated the following research question to navigate my research journey.

### Research Question

How do existing pedagogical practices help me to form a transmissionist image of pedagogy, and how do I conceive empowering pedagogy?

## **Research Methodology**

Research methodology is an overall reflection of how the researchers see the realities, which approaches are used to unearth these realities, and whose values are recognized. (Willis, 2007). I believe that mathematical reality and its accompanying pedagogy are emerging and constructing entities and highly remain fluid and flexible according to times, places, immediate contexts, and environment (Taylor, Taylor & Luitel, 2012). Likewise, I acknowledge multiple ways of exploring mathematics knowledge. Mathematical knowledge is not value-free and neutral because of its nature of genesis and evolution which entangle within socio-cultural, historical and political settings (Hersh, 1987). This worldview leads me to incorporate a multiparadigmatic design space. I incorporate the paradigms of interpretivism, criticalism and postmodernism (Taylor & Medina, 2011).

The paradigm of interpretivism focuses on exploring the context-based subjective meaning and helps uncover the personal beliefs, values, perspectives and actions associated with his/her socio-cultural milieu (Bryman, 2012). It guides me to construct the intersubjective meanings that reflect my feelings, pleasure, beliefs, and values (Taylor, Taylor, & Luitel, 2012). Likewise, the paradigm of criticalism enables me to critically reflect on self-experiences and question the power dynamic of society and the dominant ideology of the ruling class (Gutstein, 2006; Gutiérrez, 2012; Kazima & Mussa, 2011). It energizes me to envision alternative mathematics education by creating a rational balance between local and global cosmological knowledge systems. Finally, the paradigm of postmodernism supports capturing the essence of pluralism through the multiple ways of exploration via; personal narratives, letter writing, metaphorical logic and dialogue (Wall, 2006; Taylor, Taylor & Luitel, 2012). These three paradigms support me in bringing the thick descriptions of the context, critiquing the tacit beliefs, powers and ideologies and celebrating pluralism. In so doing, I have employed autoethnography as a research method.

### **Autoethnography as a Research Method**

From the above discussion, I understand that pedagogical practice in mathematics is a complex phenomenon. It is difficult to capture its true essence numerically because of its embeddedness in the social, cultural, historical and political milieu. People's behaviours, emotions, beliefs, attitudes and experiences are shaped according to the immediate environment in which they are grown up. In this context,

I used autoethnography as a research method to explore the existing pedagogical practices and envision an empowering/humanizing pedagogy in mathematics.

Autoethnography is a research method in which researchers can explore their experiences through critical reflection on personal experiences and social, cultural, historical, ethnic, lingual and economic influence on their practices. It is an approach to portray (graphy), the personal (auto) and ethno (other) experiences through multiple logics and genres (Ellis, 2004; Bochner & Ellis, 2016). It allows researchers to ventilate their true feeling, emotions, belongingness, and experiences and tell untold stories through; narratives, dialogues, letter writing and metaphorical representation without any fear and constraints that help uncover the hidden values, dominant power structure and hegemonic ideology that severely affect mathematics pedagogy. In this vein, Allen (2011, as cited in Qutoshi, 2015) argues that autoethnography is a research methodology that works as an 'un-locker' of exploring hidden values and perspectives, discloses socio-cultural and political roles, unfolds the forces behind the marginalization and victimization, 'energizer' that empowers the voiceless and powerless, a 'challenger' enables the researcher to disrupt canonical ways of knowing, being and doing things as taken for granted; an 'enabler' that develops capacities in self/others so that they can become change agents and contribute to creating inclusive and socially just society. Realizing these views, I have decided to use an autoethnography research to explore my earlier transmissionist pedagogy and envision a humanizing pedagogy.

I employed writing as a method of inquiry (Richardson, 2003) and critical reflectivity to uncover my values, convictions, and practices through the lens of larger socio-cultural, historical, and political settings. In my inquiry, it plays a significant role because it extends my field texts to alternative interpretations and meanings that widen intersubjective epistemological stance keeping me aside from being hooked on a particular privileged reality, ideology, and value (Richardson & St. Pierre, 2017). It is a process of layer writing which helps in the process of meaning-making (Konblach & Baranon, 1984, as cited in Elbaz-Luwish, 2002) and makes writing more viable and livelier.

### **Theoretical Referents**

To make meaning from my narratives, stories, dialogue, and metaphorical logics, I used Habermas Knowledge Constitutive Interests (Habermas, 1972) and Transformative Learning Theory (Mezirow, 1991) as theoretical referents.

## **Knowledge Constitutive Interests**

Habermas (1972) described the process of knowledge construction in the history of humankind. He described technical, practical and emancipatory interests as three fundamental interests. Technical and practical interests focus on controlling and understanding, whereas emancipatory interest concerns emancipation and freedom.

The technical interest helps understand how educational institution validates and represents the interests of the ruling class to control and manage the social and institutional settings for their benefit (Habermas, 1972). It supports me in unearthing the power dynamics, disempowering forces, and hegemonic ideology which underpin transmissionist pedagogical practices and enrich the neutral views of mathematics as asocial, acultural, ahistorical, and apolitical. Likewise, practical interest focuses on consensual meaning-making and understanding processes that somehow ensures the involvement of higher-and middle-class groups of society who have access to the decision-making process (Habermas, 1972). Finally, emancipatory interest focuses on the empowerment and emancipation of practitioners irrespective of their social, cultural, economic, lingual and ethnic backgrounds. It recognizes the potentiality of learners to shape their lives and argues for providing autonomy and responsibility to the learners so that they can feel empowered and take ownership of their actions (Habermas, 1972). Emancipatory interest enables and energizes me to work as an autonomous researcher having social and institutional responsibility so that I can envisage humanizing pedagogy that supports fostering the culture of mutual respect and empathetic relation which contribute to heal the wounded humanity.

## **Transformative Learning Theory**

I used transformative learning theory as another referent. It is a lens to see how individual learners and researchers can come across the perspectival changes in their belief system, ways of knowing, being and doing. The transformative learning theory suggests me using critical reflective practice as a powerful tool that helps not only explore deep-seated mindsets of the self and others and taken for granted assumption as a form of knowledge but also teaches me how I can make meaning from individual and collective experiences to shift preoccupied meaning schemes toward new meaning perspectives (Mezirow, 1997). I realized that transformative learning is a process of meaning-making of our lifeworld through critical reflection on action, in action and for action (Schön (2017). This critical reflection cycle helps dismantle the problematics

frame of references and thus opens new discourses of inclusiveness, empowerment, liberation, emphatical relation and transformation (Mezirow, 2003; Lamichhane, 2021). In this research, transformative learning theory enables me to engage in critical self-reflective practices of my experiences and enrich my understanding of the embedded forces behind a pedagogical practice which leads me to shift my values, beliefs, thinking, and actions further support to prepare the ground for envisioning the alternative humanizing pedagogy in place of transmissionist ones.

## **Results and Discussion**

As an autoethnographer, I have explored my pedagogical values, beliefs and experiences through narratives, story-telling, conversations, letter writing, metaphorical logic and critical self-reflection. Now, I turn my attention to make meaning from this rich information through the help of the theoretical lenses mentioned above in the following subsections.

### **Practice Makes a Man Perfect! I am a Successful Teacher!**

It was a day in July 1992; people were gathering in my neighbouring house for helping to construct a muddy flat. I joined the campaign to assist them. It was seven o'clock; Radio Nepal was broadcasting the news. I carefully listened to news because it was time to publish the SLC (School Leaving Certificate) result. The SLC result was published which was held in January 1992. Only 24% of students were declared to have passed the exams. Out of them, approximately four thousand students secured first-division marks (60% or above). Hurry up! Our SLC result had just been published. I informed to all of my dearest friends that our result had been published. We went to the district headquarters to search *Gorkhapatra* (the official newspaper of the Government of Nepal), the only source in which the SLC result was published. We hardly purchased a copy of *Gorkhapatra*, paying approximately five times more than the usual price. It was my pleasure to obtain the first division. Another two friends secured the second division, and none of the others were able to succeed. I returned to my house. I shared my pleasure with my parents. Hurry up! Hurry up! I stood in the first division. My parents offered me *Tika* and blessed me for a bright future.

*Two days later, three of my villagers came to my house and requested to take a tuition class for their children. I thought it was time for me to earn some pocket money. I agreed with them. Next day, they sent their children to my house. I asked them which*

*of the topics they felt most difficult. They showed their interest in the unitary method.*

*Firstly, I described the step-by-step procedures for solving the problems related to the unitary method. They raised a question; how do we determine the condition of whether the right-hand member is divided or multiplied by the given number? Are there any best tricks for solving the problems? I explained the direct and indirect variations between variables. If the variables are related in such a way that a change in one variable might cause a change in another variable in the same direction, then you should change the number in the same manner. If the variables are so varied that a change in one variable might change other variables in the opposite direction, then you should change the number in the opposite manner.*

*Now, I asked them to solve all the problems given in the textbook. Do not hurry during your reading times. Firstly, revise all the examples solved in our textbook that help solve other problems. Being a student of mathematics, you should not be lazy. You must solve every problem as many times as possible before attending the final examination. Practice makes a man perfect! Please take it as a Guru Mantra (instruction of the teacher that needs to follow without question). It is one of the major strategies I have adopted for preparing for the SLC examination.*

*After a week, their parents came to my house. They seemed very happy. They said their children devoted more time to mathematics and other subjects than before. Their children told them I taught them fundamental concepts at first and then solved the problems by describing step-by-step procedures and making a connection with lifeworld situations.*

The conventional approach of my teaching method is nothing but pouring information into the empty minds of learners and ways of power over the learners through abstract mathematics knowledge and tacit teaching procedures (Davison, 2008). Teachers and educational institutions un/knowingly act upon the learners from their perspectives. I realize that my teaching could not break the boundary of informing pedagogy in which students could hardly develop only a few lower-order cognitive skills that restrict the learners within the frame of reproducing the pre-existing knowledge (Alam, 2013). Similarly, another salient feature observed in my teaching is the adoption of reductionist pedagogy in which I break down the concept of mathematics into small managerial components that provides the compartmental knowledge and skills to the learners (Ahmed, 2013). I have realized that such a

pedagogical approach is predominantly obstructive to the learners because it does not foster conceptual, relational and cultural understanding. Initially, I was captivated by conventional pedagogy. It celebrates the technical, mechanical, and instrumental (Habermas, 1972) aspects of mathematics education.

Only standardized technical approach to mathematics eccentrically emphasizes pure mathematical knowledge that helps erode the cooperative attitude, collaborative work, and culture of respect, ultimately giving the birth of consumerist ethos in our society. In this connection, I understand that mathematics education is not an isolated entity. It has a pervasive effect on every sector of the world. Now, I focus on articulating my pedagogical experiences during my university years.

### **He is our Supporter! Please Protect him!**

I was very enthusiastic about university education after completing SLC in the first division. I had no idea about university education. My parents and relatives had suggested studying a technical or vocational subject that could secure my future life. I heard that at the university level, all subjects are taught in English medium. Highly professional academicians are there in the teaching field. I worried about the language of teaching because I was poor in English than in other subjects. Because of my interest in mathematics, I decided to choose a mathematics education as my future career subject.

I was admitted to the Pinnacle Multiple Campus at the district headquarters, Bharatpur. I found that teaching methods were quite different from my previous assumptions. Most of the teachers came with their notebooks. They either wrote subject matters on the boards or read the notebook loudly to convey the information to the learners. Students were compelled to write a note. Teachers performed as orators, and we were obedient listeners. If we find the previous notebook of the respective teachers from our seniors, it is not necessary to take their classes. Rather than attending a class regularly, it is far better to prepare for the final examination by self-study. I felt ashamed to recall our mathematics classes herein again. It was the most painful event in my academic journey. To solve the problem correctly without looking at their notebook was very difficult for some of our teachers. I was confused about whether the educational institutions opened only for employment for someone else. Why was an educational institution established without having trained and qualified human resources in higher education? Who was responsible? Who do hear our voices?



*It could be any day in November 1994. Our mathematics teacher came to our class to teach set theory. It was a new term for us. He opened his notebook and wrote a definition of the set on a chalkboard. He tried to describe the meaning of a set. Set is set....., set..... is set, set is..... set,... Set is .....set. He did not complete his sentence even though he repeated it many times. He again looked at his notebook, but he could not describe the meaning of the set spontaneously. Similarly, he defined the different types of sets and operations on sets with the help of his notebook. We were all busy copying the definitions and theorems to prepare precise notes. The bell rang, and the class was over.*

*We shared our feeling. It was found that no one can make meaning from this class. Meanwhile, one of my talkative friends, Palpali, shared his experiences. He found that the teacher pronounced the word set 157 times during the class. We were planning to complain to the campus administration. Meanwhile, Sital advised us to wait for some days. We waited for a week; we did not find any significant improvement in his class.*

One week later, we wrote a complaint letter to the campus chief.

*To  
The Campus Chief  
Pinnacle Multiple Campus  
Bharatpur, Chitwan*

*Subject: Regarding the Mathematics Class.*

*Dear sir;*

*We apologize to inform you that our mathematics class has not been conducted well since last week. Firstly, we diplomatically requested our teacher to improve. We waited for a week, hoping to improve the teaching style. We could not find any changes in his teaching strategies. So, we heartily request you to replacement of our math teacher. We need a mathematics teacher with sound content and pedagogical knowledge, and experience in teaching. If our demand is not addressed within a week, we will be compelled to take any action that will be aggressive and obstructive. The campus administration will be responsible for all the consequences that the movement will create.*

*Yours Sincerely*

*All the students of I. Ed, Second year  
Mathematics Group.*

After three/four days, the campus chief invited only two students representing the class. Our class gave authority to *Gorkhali* and me to dialogue with the campus administration. We had already collected some information regarding the academic and professional expertise of *Dr. Set*. We entered the Campus chief's room, where the campus chief, *Mr. Authority* and *Dr. Set* were there. We did not agree to start a discussion with the campus administration in *Dr. Set's* presence.

*The campus chief briefly describes the present condition of teaching/learning activities at the campus. It has been very difficult to find another teacher recently. I am annoyed by his arguments. Sir, why do you offer a mathematics program without well planning of human resources? Is it a business house? Gorkhali overtakes me. Sir, he has not passed his master's degree until now. He has just secured only second-division marks in those subjects declared to be passed. How can he handle our class? Gorkhali further argues that to be a good teacher, he should have sound content and pedagogical knowledge. He is not able to define simple mathematics concepts and cannot give contextual examples. We have observed for more than a week. We cannot find any improvement in his teaching strategies. We do not know anything; we need another teacher.*

*Mr. Authority makes notes of our complaints. He showed me a short message in which he wrote that he (*Dr. Set*) was our party member and you needed to help him. I do not care about his notification. Mr. Authority said finding an experienced and qualified mathematics teacher is very difficult. I have just advised him to improve his teaching strategies. He also agrees to take extra (tuition) classes if necessary. Similarly, the campus chief argues that if you confront your teacher, it would negatively affect your marks in teaching practice. I will help you in teaching practice to secure good marks that will support you in increasing your overall percentage in the final examination. Gorkhali stops him and replies. Sir, you want to bargain with us. We do not come here to beg marks in teaching practice. We quit the dialogue and immediately left the room. Mr. Authority pulls my hand and secretly says it is our own college, and our opponents want to interrupt it. You should be aware of this matter. Please handle the case wisely. I will help you in every step of your future.*

The above narrative reflects ground realities of mathematics teaching-learning activities at the university level, teachers' mathematical contents and pedagogical knowledge, teachers' beliefs about pedagogical practices, and institutional positions/

roles. I am not so astonished by the pedagogical choices and implementation because teachers are not alien; they are the product of our educational practices and socio-cultural milieu. Profound mathematical content knowledge and specialized mathematical content knowledge are the very foundations of a teacher's competency. Ball, Thames, and Phelps (2008) mentioned that teachers who do not know the subject matters very well are less likely to know how to help students learn these contents more appropriately and fruitfully. They convey only the information they learned. It signifies that the teacher is the most significant influencing factor for developing positive/negative images of mathematics (Lane, Stynes & O'Donghue, 2014). Teachers' lacking good content and pedagogical knowledge, self-confidence, and low achievement help create a vicious circle of negative attitudes, beliefs, images and avoidance, and anxiety toward mathematics and teachers transmit the negativity to future generations (Jackson, 2008). Teachers' beliefs, knowledge, cognition, and worldviews influence what happens in the classroom, what teachers communicate with their students and what students learn (Wilson & Cooney, 2002). Teachers should be independent thinkers, problem solvers, artisans, and orchestras so that they can uniquely demonstrate mathematical concepts, skills and knowledge.

Moreover, schools and universities in Nepal have not been institutionalized yet. These institutions become the replica of mainstream political parties. Political parties send their sister organizations to these universities and schools to control and manage these institutions according to their political ideologies. Students' unions and professional organizations of teachers and employees disturb academic and other professional activities (Panthi & Belbase, 2017). They generally raise the issues of appointments, promotions, and other politically oriented affairs rather than the academic betterment of the institutions. As a student, teacher and practitioner-researcher, I witnessed that they (teachers and students affiliated with their different sister organizations of mainstream political parties) rarely debate the present academic and research trends of their respective subjects. Without having sound knowledge and skills and engagement in contemporary discourse in respective subjects, teachers simply perform the file duties in which students' aspirations, emotions, feeling, and voices cannot be addressed. It indicates that conventional/dehumanizing teaching-learning activities are one of the most significant influencing forces for generating negative images of mathematics among practitioners.

## **I do not Know Anything! Prepare them for the Exam**

*It could be any day in July 2018; I was sitting on my chair in a faculty room after finishing my duty. Prof. Entrepreneur invited me. I went to his room, and Prof. Entrepreneur was busy with his laptop. We exchanged greeting. Prof. Entrepreneur said that the university has just published the result of the fall semester. Parents were not satisfied with the results. The overall results of our college are excellent, but the result of one of the technical subjects of the first semester was nil.*

*Similarly, the result of mathematics in the first semester is not excellent. Only sixty-one per cent of the students have passed mathematics in which no one could secure the highest grade (Grade A). He asked, sir, why is the result of mathematics poor? He further added that, according to the parents, our teaching/learning activities could not orient to prepare our students for the final examination. Nobody cares about other skills, knowledge, and concepts without getting good test marks. For the sustainability of our institution, we need to maintain the first position in the district. Whatever the teaching methodology or procedures, all of us need to converge our attention to secure the first position; otherwise, our source of income gradually diminishes. In this respect, teaching in a private institution is tricky compared to other institutions. How to improve our results in these subjects?*

*After listening to his arguments, I gently replied. In my opinion, results do not entirely depend upon classroom teaching alone. So many interrelated factors implicitly or explicitly affect the results. Firstly, we need to consider our intake of technical subjects. Most of the students fail in technical subjects which require profound mathematical knowledge, indicating that our students are very poor in mathematics. I have not expected sixty-one per cent results in mathematics. It isn't easy to complete the course on time. I have taken approximately 20 extra classes to complete the course. I have used technological devices to teach mathematics this semester. I have demonstrated complex mathematics problems by using mathematical software. Another salient feature of my mathematics class is that I try to create a learning environment in which students can engage deeply in the learning process. Rather than rote learning and memorizing certain formulae and algorithms, I offer them to solve mathematics problems at their own paces and ways and encourage them to ask questions and participate in learning discourse. I do my best to boost their confidence by contextualizing mathematical problems in their lifeworld. I realize that the constructivist approach to teaching/*

*learning activities helps them secure higher positions. I hope they will improve their achievement in the coming days.*

*Prof. Entrepreneur argues that his intention is not to blame his faculties. However, some of the parents claimed that teachers could not make students fully concentrate on the upcoming examination. Our faculties did not solve all of the issues given in the textbook and could not provide helpful tricks and techniques for securing maximum marks in the final examination. Finally, I like to say that it is our private organization. At any cost, we need to satisfy our stakeholders. Students gradually conceptualize the subject matter and its relations to other subjects and real-life situations in their future lives. So, we need not care about other things, but our results must be excellent. Theoretically, your opinion (indicating me) is highly appreciative; however, our educational culture focuses on quantity rather than quality. I hope that our teaching/ learning activities focus on better achievement. Thank you for your valuable time and suggestion.*

From this discourse, I have realized that the mathematics education practices of Nepal have been dominated by utilitarian views of mathematics. This view of mathematics and its embodied transmissionist pedagogy prepares the learners for particular life choices that the experts and elites projected rather than rational life choices (Cotton, 2001). It has also been legitimized by a conventional assessment system in which students are urged to reproduce intended mathematical facts and concepts. In this regard, Ernest (1991) has argued that there are five ideological groups in mathematics education, out of which industrial trainers, technological pragmatics, and old humanist are likely to hold the utilitarian and Platonic view of mathematics. It ignores the individual learners as having the cognitive ability to choose or determine their life choices. It aims to impose decontextualized and objectified mathematical knowledge for commercial use which is controlled by business houses rather than focusing on liberation and enlightenment (Keitel & Vithal, 2008). Teachers are not autonomous in teaching-learning activities according to their rational choices. They are enslaved by commercial textbooks and cooperate business houses. Teachers are always circumscribed by the conventional assessment system that only searches mechanically mathematical elites (Keitel & Vithal, 2008). The conventional assessment system creates a hierarchy in schools and turns into a culture of discrimination in society. It largely ignores the cooperative and collaborative learning approaches that lead to the exploitation and domination of one group over another in the classroom and society

(Cotton, 2001).

Mathematics learning is a social process in which students and teachers simultaneously engage in mathematical discourse. Teachers must create an environment in mathematics classrooms where students can express their thoughts and true feelings and participate freely in mathematical activities. It helps internalize themselves as the agents of social transformation (Marshman & Grootenboer, 2012). To make our mathematics education more inclusive and authentic, we need to explore the hindering forces that entrench our society within the grips of socially unjust practices. In doing so, mathematics teaching needs to flourish the alternative views of mathematics as value-laden and social (Ernest, 1998) and imperfect subjects (Maheux, 2016) so that learners can read and write the world through mathematics (Gutstein, 2006). Its principal objective is to foster the critical consciousness of the learners so that they feel empowered and become critical citizens who can contribute to a deep-democratic and socially just society.

### **Envisioning Possibly Humanizing/Empowering Pedagogy**

*It could be any day in December 2015; we were discussing a critical pedagogical approach. Prof. Facilitator argued that mathematics teaching-learning activities did not need to be limited to solving bookish questions but could explore the connection of mathematics with real-world practices that helped understand the contemporary socio-cultural, political and economic landscapes of the society and nation. It led to develop critical and emancipatory thinking so that practitioners became conscious and supported to enhance social justice and deep-democratic practice.*

*Immediately, I expressed my opinion. Sir, it looks like the schooling of a political party in which they devote most of the time to discussing the agenda of social inclusion, social justice, empowerment, and democracy. Is it our business?*

*Prof. Facilitator gently replied it is indeed the work of a mathematics educator. Mathematics teaching should not restrict informing the student about the mathematical facts, rules and algorithms to solve routine problems. It needs to explore the interconnection of mathematics and socio-cultural, political, linguistic, and economic issues in which students are grown up. It supports learners in understanding contemporary power relations and their implicit and explicit impacts on mathematics education. An opportunity of engaging in social, cultural, political, historical, and educational issues, students can internalize existing social inequality, exclusion,*

*economic disparities, access to educational opportunities and impact of political power in different sectors of the society and nation so that learners become conscious citizens.*

Initially, it takes some time to convince me because I have long practices of mathematics teaching as a form of the symbolic game played with paper and pencil for re/justifying, re/proving and reproducing mathematical knowledge, facts and concepts. Gradually, when I read the seminal works of Ernest (1991, 1998), Lerman (1990), and Gutstein (2006), I realize that mathematics is such a historical subject that helps learners to participate in current social, political, economical, technological, and ecological discourses. The next day is my turn to make a presentation regarding my experiences throughout the journey of the course. I am worried about how to make a presentation. What should be the appropriate pedagogy that can address the shortcoming of the conventional pedagogical practices of mathematics education in Nepal?

Now, I am ready for the presentation. Prof. Facilitator briefly revises our journey throughout the course and the status of the journal submission and allows me to present my views on mathematics teaching.

*Dear Prof. Facilitator and Friends,*

*I present my views about mathematics pedagogy based on our course and my experiences. Most of us agree that conventional teaching cannot produce the desired results in mathematics, so we need alternative pedagogical approaches which are more empowering and humanistic and can bridge classroom mathematics to the broader lifeworld of the practitioners. Now I describe how to make mathematics teaching more empowering and humanizing.*

*First, we must create a classroom environment where students can share their experiences. Teachers continually make a conscious attempt to understand children's actions because they have their socio-cultural practices and prior experiences so that both make sense of each other. If students cannot crack the code of mathematical symbols and language, they won't make meaning of mathematics teaching. Limiting students in solving undue bookish questions prevent creative, imaginative, critical thinking and problem-solving skills. To foster these skills, problem-posing strategies should be one of the best alternatives.*

Problem-posing strategy is not a panacea; however, it is the most humanizing and empowering pedagogical approach. Teachers and students simultaneously engage in mathematical discourse to make meaning from multiple perspectives. They become

healthily skeptical of the 'taken-for-granted assumption' and disturb the 'status quo' in the mathematics classroom and society (Stinson, Bidwell & Powell, 2012). Likewise, teachers need to create an environment in which students are free from constraints and impaired self-representation so that students from different cultural groups, gender, economic and lingual backgrounds feel empowered and autonomous in their learning and take control of their own learning and lives (Taylor & Williams, 1992). The classroom becomes a learning culture in which all voices are equally recognized and valued. Students are willing to take ownership and authorship of their learning (Burton, 1999), which makes mathematics teaching-learning activities more humanizing and democratic.

*Dear Professor and Friends,*

*Let me present my visions on humanizing pedagogical approach. In my opinion, conventional mathematics teaching in schools and universities cannot address the humanitarian aspects of learning. Many scholarly articles and research reports indicate that mathematics teaching-learning activities are unable to use humanistic approaches (Burton, 1999, Lerman, 1999; Cobb, 2006) because teachers always hurry to accomplish the pre-assigned course contents within a given time framework (Wang, Koyama, & Lee, 2014). Restricting mathematics teaching-learning activities in reproducing a body of knowledge makes teachers and students more instrumentalist, thereby ignoring the humanitarian aspects of mathematics. Humanizing pedagogy recognizes the learners as cognizing beings, and teaching aims to foster higher-order thinking rather than relying on lower-order thinking. It advocates for embracing socio-cultural, historical, and political aspects of learning and intends to explore the attributes of cooperation, collaboration, consensual meaning-making, understanding, empathetic relation and probing (Habermas, 1972) so that it can address the contemporary crisis in society.*

Conventional pedagogy is unable to explore socio-cultural, historical, and political dimensions embedded in mathematics education and thus become unaware of the interdependence and interconnectedness of mathematics with other natural and human disciplines (Pinar, 2004). In this connection, I want to suggest adopting the humanizing pedagogy in a mathematics classroom in such a way that helps to promote students' spiritual, moral, social and cultural development (Winter, 2001).

Humanizing pedagogy supports to develop the ecological consciousness among practitioners that enhances the interdependence of human beings to the environment.



In this context, teaching-learning activities should devote to engaging in exploring the meaning of mathematical knowledge from their immediate contexts and environments. Such a perspective of teaching-learning incorporates the view that human cognition is not only bounded within individual heads, it is also distributed throughout the body and immediate environment (Lerman, 1999). It signifies that humanistically oriented teachers, curriculum designers, and practitioners need to change their worldviews about mathematics and its teaching-learning activities so that they can contribute to developing new meaning perspectives (Mezirow, 2003) to help transform the world into a better place for all creatures.

Transformative learning insists on dialectical and dialogical approaches and aims to raise student consciousness. In this regard, Cranton (2010) mentions three fundamental stages of teaching for transformation: empowerment, critical reflection, and self-actualization. Teachers need to consider how learners feel empowered. In doing so, teachers should create an environment in which students can exercise power, take responsibility for their learning, engage in mathematical discourse, critically reflect on their experiences, and develop metacognitive thinking skills that liberate learners from all sorts of false consciousness (Cranton, 2010). Arriving at this point of inquiry, I conclude that humanizing pedagogical practices also helps flourish the transformative views of mathematics and possibly can be an alternative pedagogical practice in the context of Nepal.

### **Conclusion and Implication**

I articulate my pedagogical experiences of becoming a tricky and reductionist teacher during my early years of teaching. At that period, I thought teaching-learning mathematics means to solve bookish questions using specific procedures and urging students to follow the same step-by-step procedures. The conventional teacher education programs of universities prepare prospective teachers who can only do file duties (Grundy, 1987). Likewise, teacher recruitment procedures are not transparent and are highly influenced and distorted by political parties' ideologies, preventing transformative mathematics education practices. Moreover, profit-oriented private educational institutions support the development of consumerist ethos at the expense of social, cultural, and historical realities and their knowledge cosmologies. Privately managed educational institutions have become the central place of exploitation (Kirylo, 2013) because these institutions have spread the misconception of learning

as obtaining the so-called highest marks in the final examination. This discourse signifies that university teacher education programs, research culture and pedagogical approaches are highly responsible for conventional mathematics practices. In this regard, to transform the existing pedagogical practices towards more inclusive ones, I have envisioned an empowering/humanizing pedagogy. In this pedagogical approach, teachers and students have to get an opportunity to engage deeply in teaching-learning activities in which both groups are skeptical of the 'taken-for-granted assumptions' as tacit knowledge. Teaching-learning environment is highly democratic so that teachers and students can involve in free and pure discourses (Taylor & Williams, 1992) in which they can express their arguments for and against particular perspectives and knowledge. It supports exploring the dominant power structure and the hegemonic ideology of the ruling class or owners of educational-corporate houses, and learners can take an informed decision. Moreover, humanizing pedagogy recognizes the learner as a cognitive, affective, spiritual, social and historical being and orients to foster creative, critical and imaginative thinking so that learners become conscious citizens and take informed decisions.

Finally, the research implies that our pedagogical practices in mathematics classrooms seem to be dominated by the pouring approach in which learners are treated as non-cognitive, ahistorical, asocial, non-affective and non-spiritual beings. To liberate mathematics education from these narrowly conceived and non-humanizing practices, we first need to envisage and implement more empowering/humanizing pedagogy that energizes learners to become change agents. In these perspectives, I have explored the existing pedagogical practices through my autoethnographic vignettes, which reflect the true essence of mathematics teaching-learning activities and uncover the forces behind these practices that restrain mathematics education within four walls of classrooms. The thick description of the contexts and teaching-learning scenarios, influences of ruling parties' ideologies, privatization and commercialization of educational institutions, and finally, envisioning alternative empowering/humanizing pedagogy offer the practitioners to reflect critically on their experiences and encourage them to engage in such discourses that certainly yield the positive vibes in mathematics education and contribute to open a path of transformative mathematics education.

## References

- Ahmed, A. K. (2013). Teacher-centered versus learner-centered teaching style. *The Journal of Global Business Management*, 9(1), 22-34.
- Alam, M. (2013). Banking model of education in teacher-centered class: A critical assessment. *Research on Humanities and Social Sciences*, 13(15), 27-32.
- Ball, D. L., Thames, M. H., & Phelps, G. (2008). Content knowledge for teaching: What makes it special? *Journal of Teacher Education*, 59(5), 389-407.
- Bochner, A. P. & Ellis. C. (2016). *Evocative autoethnography: Writing lives and telling stories*. Routledge.
- Bower, G. H., & Hilgard, E. R. (1986). *Theories of learning* (5th ed.). Prentice-Hall of India Private Limited.
- Burton, L. (1999). The implications of a narrative approach to the learning of mathematics. In L. Burton (Ed.), *Learning mathematics: From hierarchies to networks* (pp. 21-35). Falmer.
- Cobb, P. (2006). Mathematics learning as the social process. In Maasz, J. & Schloegelman, W. (Eds.). *Mathematics education research and practice*. Sense Publishers.
- Cotton, T. (2001). Mathematics teaching in real world. In Peter, G. (Ed.), *Issues of mathematics Teaching*. Routledge Falmer.
- Cranton, P. (2010). Adult learning and instruction: Transformative learning perspective. In Peterson, P., Baker, E. & McGaw, B. (Eds.), *International Encyclopedia of Education* (3<sup>rd</sup> ed.) (vol. 1). Elsevier Ltd.
- Davison, A. (2008). Myth in the practice of reason: The production of education and productive confusion. In T. Leonard & P. Willis (Eds.), *Pedagogies of the imagination: Mythopoetic curriculum in educational practice* (pp. 53-64). Springer Science and Business Media B.V.
- Elbaz-Luwish, F. (2002). Writing as inquiry: Storying the teaching self in writing workshops. *Curriculum Inquiry*, 32 (4), 403-428. The Ontario Institute for Studies in Education.
- Ellis, C. (2004). *The ethnographic I: A methodological novel about auto/ethnography*. Alta Mira Press
- Ernest, P. (1991). *The philosophy of mathematics education*. UK: Routledge Falmer.
- Ernest, P. (1998). *Social constructivism as a philosophy of mathematics*. State University of New York Press.
- Freire, P. (1973). *Education for critical consciousness*. Continuum.

- Grundy, S. (1987). *Curriculum: Product or praxis*. The Falmer Press.
- Gutiérrez, R. (2012). Context Matters: How should we conceptualize equity in mathematics education? In B. Herbel- Eisenmann et al. (Eds.), *Equity in discourse for mathematics education: Theories, practices, and policies*. Springer Science+ Business Media B.V.
- Gutstein, E. (2006). *Reading and writing the world with mathematics: Toward a pedagogy for social justice*. Falmer Press.
- Habermas, J. (1972). *Knowledge and human interests* (Jeremy, J. S. Trans.). Beacon Press.
- Hersh, R. (1997). *What is Mathematics Really?* Oxford University Press
- Jackson, E. (2008). Mathematics anxiety in students' teacher. *Practitioner Research in Higher Education*, 2(1), 36-42.
- Kazima, M. & Mussa, C. (2011). Equity and quality issues in mathematics education in Malawi schools. In B. Atweh; M. Graven; Walter, S. & P. Valero (Eds.), *Mapping equity and quality in mathematics education*. Springer Science + Business Media B.V.
- Keitel, C. & Vithal, R. (2008). Mathematical power as political power: The politics of mathematics education. In Philip, C. & Norma, P. (Eds.), *Critical Issues in Mathematics Education: Major contribution of Alan Bishop* (pp. 167-188). Springer Science + Business Media.
- Kirylo, J. D. (Ed.) (2013). *A Critical pedagogy of resistance: 34 Pedagogues we need to Know*. Sense Publishers.
- Lamichhane, B. R. (2021). STEAM education as/for transformative mathematics Learning. *The Journal of Saptagandaki*, XII (12), 36-53. Saptagandaki Multiple Campus.
- Lane, C., Stynes. M., & O'Donoghue, J. (2014). The image of mathematics held by Irish post-primary students. *International Journal of Mathematics Education in Science and Technology*, 45(6), 879-891.
- Lerman, S. (1990). Alternative perspectives of the nature of mathematics and their influence on the teaching of mathematics, *British Educational Research Journal*, 16 (1), 53-61.
- Luitel, B. C. (2009). *Culture, worldview and transformative philosophy of mathematics education in Nepal: A cultural-philosophical inquiry*. Unpublished doctoral dissertation, Science and Mathematics Education Centre, Curtin University, Australia.

- Maheux, J. F. (2016). Wabi-Sabi mathematics. *Journal of Humanistic Mathematics*, 6 (1), 74-195.
- Marshman, M. & Grootenboer, P. (2012). Scissors, papers rock: Old-world technologies for future- proofing pedagogy. Re-engaging students in mathematics classrooms. In Rowan, L. & Bigum, C. (Eds.), *Transformative approaches to new technologies and student diversity in futures oriented classrooms: Future proofing education* (pp. 139-158). Springer Science + Business Media B. V.
- Mezirow, J. (1991). *Transformative dimensions of adult learning*. Jossey Bass.
- Mezirow, J. (1997). Transformative learning: Theory to practice. *New Directions for Adult and Continuing Education*, 74, 5-12.
- Mezirow, J. (2003). Transformative learning as discourse. *Journal of Transformative education*, 1 (1): 58-64.
- Mezirow, J. (2003). Transformative learning as discourse. *Journal of Transformative education*, 1 (1): 58-64.
- Mezirow, J. (2012). Learning to think like an adult: Core concepts of transformation theory. In E. W. Taylor & P. Cranton (Eds.), *The handbook of transformative learning: Theory research and practice* (pp. 73-96). Jossey-Bass.
- Panthi, R. K., & Belbase, S. (2017). Teaching and learning issues in mathematics in the context of Nepal. *European Journal of Educational and Social Sciences (EJESS)*, 2(1), 1-27.
- Pinar, W. F. (2004). *What is curriculum theory?* USA: Lawrence Erlbaum Association, Inc.
- Qutoshi, S. B. (2015). Autoethnography: A transformative research paradigm. *Dhaulagiri Journal of Sociology and Anthropology*, 9: 161-190.
- Richardson, L. & St. Pierre, E. A. (2017). Writing: A method of inquiry. In Norman, D. & Yvonna, S. L. (Eds.), *The Sage handbook of qualitative research* (pp. 1410 -1444). Sage Publication.
- Richardson, L. (2003). Writing: A method of inquiry. In Yvonna, S. L. & Norman, K. D. (Eds.), *Turning points in qualitative research: Tying knots in a handkerchief* (pp. 379-396). Altamira Press.
- Schön, D. A. (2017). *The reflective practitioner: How professionals think in action*. Routledge.
- Stinson, D. W., Bidwell, C. R., & Powell, C., (2012). Critical pedagogy and teaching mathematics for social justice. *International Journal of Critical Pedagogy*, 4 (1):76-94.

- Taylor, P. C. & Medina, M. (2011). Educational research paradigm: from positivism to pluralism. *College Research Journal*, 1 (1):1-16. Assumption College of Nabunturan, Philippines.
- Taylor, P. C., Taylor, E., & Luitel, B. C. (2012). Multi-paradigmatic transformative research as/for teacher education: An integral perspective. In K. G. Tobin, B. J. Fraser & C. McRobbie (Eds.), *Second international handbook of science education* (pp. 373- 387). Springer.
- Taylor, P.C., & Williams, M. C. (1992, August). *Discourse towards balanced rationality in the high school mathematics classroom: Ideas from Habermas' critical theory*. A paper presented in the "sociological and anthropological perspectives" working subgroup of seventh international congress of mathematics education (ICME-7), Quebec.
- Taylor, P.C., Luitel, B. C., De'sautels, J. & Tobin, K. (2007). Forum: Contextualism and/or decontextualism, painting rich cultural pictures, and ethics of co-authorship; *Cultural study of Science Education*. 2: 621- 655.
- Tutak, F. A, Bondy, E., & Adams, T. (2011). Critical pedagogy for critical mathematics education. *International Journal of Mathematics Education in Science and Technology*, 42 (1):65-74.
- Wall, S. (2006). An autoethnography on learning about autoethnography. *International Journal of Qualitative Methods*, 5 (2).
- Wang, K. Y., Koyama, M., & Lee, K. (2014). Mathematics curriculum policies: A framework with case studies from Japan, Korea and Singapore. In Y, Li & G. Lappan (Eds.). *Mathematics curriculum in school education, advance in mathematics*. Springer Science+Business Media.
- Willis, J. (2007). *Foundations of qualitative research: Interpretive and critical approaches*. Sage.
- Wilson, M., & Cooney, T. (2002). Mathematics teacher change and development. In G. C. Leder, & E. Pehkonen (Eds.), *Beliefs: A Hidden Variable in Mathematics Education* (pp. 127-148). Kluwer Academic Publishers.
- Winter, J. (2001). Personal, spiritual, moral, social and cultural issues in teaching mathematics. In Peter, G. (Ed.), *Issues of mathematics Teaching*. Routledge Falmer.



## Behavioural Finance and Stock Investment Decisions

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### Abstract

*Market anomalies is the source of inefficient market where investors can generate abnormal return which is the centre point of behaviour finance. Behavioural finance incorporates the human behaviour; cognitive and social aspects, emotions, moods and psychology of the individual investors that might create investment mistakes. This study focuses on exploring the influence of behavioural finance on stock investment decision of the master level students in Chitwan district due to poor literature available in this field. This study is based on quantitative approach of research and utilizes analytical research design. The sample of the study is 284 students with usable response rate of 60.21 percent. This study utilizes reliability analysis, descriptive statistics and multiple regression analysis. Evidence indicates that herding, loss aversion, overconfidence and risk propensity has significant positive influence on stock investment decisions among investors. Finally, this study concluded that behavioural finance plays the key role while making stock investment decision of the students. In investment decision, investors should properly understand financial behaviour biases that facilitates investors while making superior investment decisions as well as risk propensity will make investors aware of fears, nervous and uncertainty toward risks which might occurs while making stock investment decisions.*

**Keywords:** *Behaviour Finance; Herding; Loss Aversion; Overconfidence; Risk Perception; Stock Investment Decision.*

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## Introduction

Conventional finance theory is based on investors are supposed to be rational and wealth maximisers so they always tend to rational financial decisions which is the central motto of modern portfolio theory (Markowitz, 1952), capital assets pricing model (Sharpe, 1964) and efficient market hypothesis (Fama, 1970). The standard finance has been the paramount subject matter for the numerous decades focus on cogent choice of investors focusing to maximizing expected utility is based on classical decision theory, rationality, risk aversion, modern portfolio theory (MPT), the capital assets pricing model (CAPM), and the efficient market hypothesis (EMH) (Ackert, 2014). Furthermore, Ackert (2014) explained that numerous empirical studies and evidences justified that many of the beliefs and evidences associated with standard finance are unrealistic, unsound and invalid. Investors take decisions rationally due to they are risk averse. However, there is presence of some behavioural biases like herding, overconfidence, anchoring, farming and representative biases that might disturb the rationality of the investors and sound influences on stock investment decision making process (Bagchi et al., 2022). Therefore, behavioural finance enlarges from the pitfall assumption of rationality of the standard finance and it contributes to understand the investors behaviour and stock market behaviour (Sharma & Sharma, 2022). Behaviour finance utilizes insights from finance, sociology and psychology to better understand the investors behaviour of individuals, groups and markets and it is based on behavioural decision theory, bounded rationality, prospect theory, farming, heuristics, overconfidence, regret aversion theory and mental accounting with emerging fields of study are behavioural portfolio theory (BPT), the behavioural assets pricing model (BAPM), and the adaptive markets hypothesis (Ackert, 2014).

Investor behavioural biases affects investor's decision-making ability which ultimately affects the rational decisions making process (Kumar & Goyal, 2015). There is immense area in behavioural finance which can be studied in the future (Zahera & Bansal, 2018). There is still presence of scope to study in depth of the behavioural finance in developing economies (Sharma & Sharma, 2022). Likewise, numerous empirical evidences in different financial markets justified that investment decisions are not consistently based on the crux of contemporary financial theories, as a sequel, studies of behavioural finance became more crucial in stock investment decision-making process (Ackert, 2014). Behavioural finance is profound by different scholars



to elaborate investors behaviour while standard finance fails to explain sufficiently (Sharma & Sharma, 2022). There is no one specific behaviour that influence stock investment decision so this study utilizes four behavioural biases to explain the stock investment decision. To the best knowledge of the researcher, there are no any previous studies that explain about investment behaviour of master level students of management stream especially in Chitwan district. So, there is no clear finding about influences of behavioural finance of students while making stock investment decisions. Likewise, there are very nominal studies that incorporates the risk propensity as behavioural biases in Nepalese context so there is no clear information about direction and influences of risk propensity on stock investment decisions. Hence, the basic objective of this study is to explore the influence of behavioural finance on stock investment decision among the master level students especially in management stream in Chitwan district.

This study has been segmented into five sections. Section 1 presents background of the study, section 2 is the literature review, section 3 documents the research methodology, section 4 dispenses the results and discussion. Conclusions and implications are documented into section 5. Finally, references are incorporated at the end of the study.

## **Literature Review**

Investors follow the herd behaviour like when market is rise and increases in trading volume, investors become more positive, enthusiastic and optimistic, neglecting their own information and follows the other buying decisions. Contrarily, when the stock market falls, drives by panic, fear and risk, investors adopt the market consensus and engage in excessive selling of securities (Pochea et al., 2017). The global financial crises have been changed the presence of herding behaviour during conditions of upward and downward in the market place and in each sector (Elshqirat, 2019).

Wu et al. (2020) found that herding behaviour is more evident for upside market gesture, poor trading volume in the market place, and weaker market volatility caused by pandemic 2019. Bagchi et al. (2022) found that herding behaviour has significant influence on individual investment decision-making process. Similarly, different studies found that herding has significant positive influence on investment decision-making process (Desrita, 2022; Adiyani & Mawardi, 2020; Madaan & Singh, 2019).

Likewise, Jain et al. (2020) found that herding is the main indicating bias that effect investment decision among Indian investors.

H<sub>1A</sub>: Herding has significant positive influence on stock investment decisions.

Loss aversion is the component of prospect theory propounded by Kahneman and Tversky in 1979. People always feel serious discomfort about losses so people have rich instinct to circumvent losses rather than to obtain gains (Kahneman & Tversky, 1979). Specifically, loss aversion is the rule of thumb: psychologically, the prospect of loss is twice as powerful a stimulator as the prospect of making gain of equal magnitude (Pompian, 2012).

Loss aversion is the rule of thumb with loss is more panic compared to gain in a same magnitude. Loss aversion is positively related to stock investment decision (Khan, 2017) and various studies found that loss aversion has significant positive effect on stock investment decision (Hossain & Siddiqua, 2022; Kumar & Babu, 2018; Mahina et al., 2017). Similarly, Jain et al. (2020) found that loss aversion has third major bias among other biases that affect investment decision.

H<sub>1B</sub>: Loss aversion has significant positive influence on stock investment decisions.

Overconfidence is an ‘error’ of judgement or decision-making process due to it guides to overrating one’s competences and/or underrating an antagonist, the difficulty of a task, or potential risks (Johnson & Fowler, 2011). Overconfidence is the unwarranted faith in one’s intuitive reasoning, judgements, and cognitive abilities that leads to overestimate both their own predictive abilities and precision of the information guide to excessive risk taking and people surmise about they have acuter and have finer information than they actually have (Pompian, 2012). Overconfidence is a human behaviour has the inherent to mainspring individuals to adventure psychological bias due to superior prospects are not always the key determinant for decision making process of the individuals (Arik & Sri, 2021). The overconfidence may have in past, may some settings in present and likely to be in future also (Johnson & Fowler, 2011).

Overconfidence leads to overestimate their own ability has significant positive impact on stock investment decisions found by various studies like (Arik & Sri, 2021; Desrita, 2022; Ainia & Lutfi, 2019; Adilyani & Mawardi, 2020; Madaan & Singh, 2019).

H<sub>1C</sub>: Overconfidence has significant positive influence on stock investment decisions.

Sitkin and Weingart (1995) explained that risk propensity and risk perception are the decisive considerations that affect individual risky decision making. Sitkin and Weingart (1995) further defined that an individual's current attribute to accept or avoid risks and can be 'conceptualized as an individual trait that can change over time and thus is an emergent property of the decision maker' and it is dispensed as a trait that is 'persistent' however, can appear under certain qualities, expertise and experiences (Garvey, 2010). Likewise, risk propensity anticipated a way to account for the effect of contestant's tendency level of perception of risk (Furman et al., 2010).

Hamid et al. (2013) found that risk propensity positively affects the risk-taking behaviour that ultimately affects the stock investment decisions. Likewise, different studies like Mulyani et al. (2021); Riaz and Hunjra (2015); Ul Abdin et al. (2022) found that risk propensity has significant positive influence on stock investment decision.

H<sub>1D</sub>: Risk propensity has significant positive influence on stock investment decisions.

### **Research Methodology**

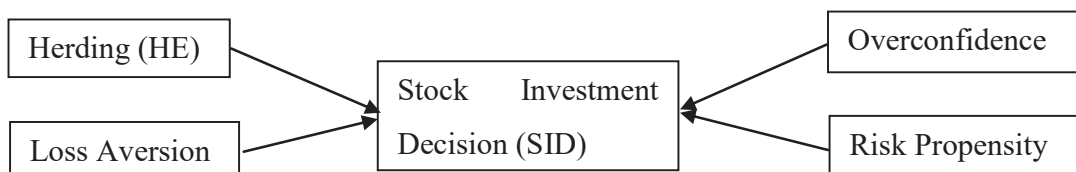
This study utilizes quantitative research approach and adopted an analytical research design to draw the conclusion of the study. The total population of the study is the total number of students currently studying in master level in management discipline in Chitwan district is approximately 1,100 which is collected from the record of the campus and/or college. The appropriate sample size with 1,100 population is 284 (Sekaran & Bougie, 2016) is collected randomly. The total collected responses were 179 due to the students who do not have experiences in stock markets are unable to response. However, the usable responses were 171 representing a response rate of 60.21 percent from total responses. Data were collected through survey technique of 5-points Likert type self-administered close-end structure questionnaire from the respondents. The required data were collected through survey from May 2022 to October 2022 using physical and online mode both.

This study examines the influences of behavioural finance on stock investment decision among the students of the Chitwan district. The behavioural finance is represented by herding, loss aversion, over confidence and risk propensity. This study utilizes the stock investment decision from the study of (Wood & Zaichkowsky, 2004; Kourtidis et al., 2011; Khan et al., 2021), herding from the study of (Kengatharan

& Kengatharan, 2014; Hossain & Siddiqua, 2022), loss aversion from the study of (Areiqat et al., 2019; Mahina, 2017; Chun & Ming, 2009), overconfidence from the study of (Wood & Zaichkowsky, 2004; Areiqat et al., 2019; Raut & Kumar, 2018; Sahi, 2017; Combrink & Lew, 2020) and risk propensity from the study of (Combrink & Lew, 2020). Likewise, these questionnaires were contextualized with the succour of experts in the Nepalese context. Reliability analysis is conducted for internal consistency using Cronbach alpha with minimum coefficient of 0.70 (Sekaran & Bougie, 2016), VIF with 10 and above indicates the multicollinearity (Sekaran & Bougie, 2016) is tested. Data were analysed using descriptive statistics and multiple regression to examine the influences of behavioural finance represented by herding, loss aversion, overconfidence and risk propensity on stock investment decision through MS excel and SPSS version 25. Finally, normality test is conducted using K-S test. The research framework of the study is presented into Figure 1 and fitted model is given into equation (i).

**Figure 1**

*Research Model*



Specifically, the fitted final model is,

*Stock Investment Decision = f (Behavioural finance) Or,*

*Stock Investment Decision = f (Herding, Loss Aversion, Overconfidence and Risk Propensity).*

Symbolically,

$$SID = \beta_0 + \beta_1 HE + \beta_2 LA + \beta_3 OC + \beta_4 RP + e_i \dots\dots\dots (i)$$

The limitations of the study are only focus on students of Chitwan district, management stream students and currently studying master level students are only incorporated, utilize only herding, loss aversion, overconfidence and risk propensity

to measure the behavioural finance, not inclusion of all investment alternatives like stocks, bonds and mutual funds, unable to separate between private and public or government campus/college, and unable to incorporate the influences of gender, age group and place of residence.

## Results and Discussion

Cronbach alpha is utilized to measure the internal consistency of the constructs. The minimum Cronbach alpha to determine the reliability of the construct is fixed to 0.70. The detailed of the results of the Cronbach alpha is documented into Table 1.

**Table 1**

*Cronbach Alpha*

Constructs	No. of Items	Alpha
Stock Investment Decision (SID)	6	0.899
Herding (HE)	7	0.871
Loss Aversion (LA)	7	0.856
Overconfidence (OC)	8	0.835
Risk Propensity (RP)	6	0.804

*Source: Field Survey, 2022.*

Table 1 depicts that the minimum reliability coefficient is 0.804 in risk propensity construct and maximum is 0.889 which is in stock investment decision. Likewise, all the constructs have Cronbach alpha of more than 0.70 indicates that there is an internal consistency of the constructs.

### Demographic Profile

All the respondents are currently studying master level in Chitwan district so all the respondents are similar in nature. However, the detailed of the demographic character of the respondents are depicted into Table 2.

Table 2 depicts that male students are higher in stock investment decision compare to female students. The male students are 65.50 percent and the rest are the female students. Similarly, most of the master level students are 30 and below the age (more than 90 percent students) so majority of the students are the youth studying in master level in management discipline and also participate in stock market.

**Table 2***Demographic Profile of the Respondents*

<b>Dimension</b>	<b>Characteristics</b>	<b>Frequency</b>	<b>Percent</b>
<b>Gender</b>	Male	112	65.50
	Female	59	34.50
<b>Age</b>	Less than 25	93	54.39
	25 to 30	61	35.67
	Above 30	17	9.94
<b>Total</b>		<b>171</b>	<b>100.00</b>

Source: Field Survey, 2022

**Descriptive Statistics**

Minimum, maximum, average, standard deviation is computed under descriptive statistics to describe the phenomenon. The detailed of the descriptive statistics are presented into Table 3.

**Table 3***Descriptive Statistics*

<b>Constructs</b>	<b>Minimum</b>	<b>Mean</b>	<b>Maximum</b>	<b>Std. Deviation</b>
Stock Investment Decision (SID)	6	24.518	30	6.163
Herding (HE)	7	29.117	30	4.614
Loss Aversion (LA)	7	29.039	35	9.152
Overconfidence (OC)	8	35.145	40	7.748
Risk Propensity (RP)	6	25.913	30	6.095

Source: Field Survey, 2022.

Table 3 demonstrates that the minimum summated score of stock investment decision is 6 and maximum is 30 with average of 24.518 which is striving towards strongly agree. Similarly, the mean summated scores of herding, loss aversion, overconfidence and risk propensity are 29.117, 29.039, 35.145 and 25.913 respectively. All these average scores indicates that each construct is followed to agree to strongly agree.

## Multiple Regression Analysis

The influence of behavioural finance like herding, loss aversion, overconfidence and risk propensity on stock investment decision is examined through multiple regression analysis. For multiple regression analysis, data should be normality distributed. Hence, the normality test of the distribution is conducted by utilizing Kolmogorov Smirnov test and K-S test justified that the data are normally distributed due to p value is greater than 0.05 level (p value = 0.311). After that, ordinary least square (OLS) is utilized to examine the influence on stock investment decision. The detailed of the results of the multiple regression is illustrated into Table 4 and 5.

**Table 4**

*Model Summary and ANOVA*

<b>R</b>	<b>R<sup>2</sup></b>	<b>Adj. R<sup>2</sup></b>	<b>S. E.</b>	<b>F stat</b>	<b>Sig.</b>
0.779	0.607	0.589	2.997	37.911	0.000

*Source: Field Survey, 2022.*

Table 4 depicts that the fitted model is significant at the level of 0.01 (F statistics = 37.911, p value<0.01). The herding, loss aversion, overconfidence and risk propensity explained the variation in stock investment decision by 60.70.

**Table 5**

*Regression Result*

<b>Construct</b>	<b>Coeff.</b>	<b>S. E.</b>	<b>t Stat.</b>	<b>Sig.</b>	<b>VIF</b>
Intercept	5.917	1.014	5.835	0.002	-
HE	0.484	0.117	4.137	0.004	1.816
LA	0.505	0.091	5.551	0.003	1.087
OC	0.884	0.079	11.192	0.000	1.972
RP	0.754	0.128	5.888	0.000	1.794

*Source: Field Survey, 2022.*

Table 5 shows that the influence of all behavioural variables like herding, loss aversion, overconfidence and risk propensity on stock investment decision is positive. The most influencing construct among all is overconfidence behaviour with coefficient of 0.884 which is followed by risk propensity and loss aversion with the coefficient

of 0.754 and 0.505 respectively while the least significant variable is herding with the coefficient of 0.484. Finally, based on model (i), the fitted regression model looks like,

$$SID = 5.917 + 0.484 HE + 0.505 LA + 0.884 OC + 0.754 RP + e_i$$

Herd behaviour results form an obvious intent by investors to imitate the investment behaviour of other investors due to assuming that other investors have superior excess to relevant information for decision making and investors might feel intrinsic comfort as well as rational herd behaviour will occur due to information-based herding, reputation-based herding and compensation-based herding (Bikhchandani & Sharma, 2000). Herding behaviour has positive influence on stock investment decision due to investors copy and follow the investment decision of others. This finding is consistent with the finding of (Desrita, 2022; Adielyani & Mawardi, 2020; Madaan & Singh, 2019). Loss is the panic factors for investment decision which downsizes the value of investment and investors are risk averse so, they try to eliminate the risk. Hence, loss aversion has significant positive influence on stock investment decision and this finding is consistent with the finding of (Hossain & Siddiqua, 2022; Kumar & Babu, 2018; Mahina et al., 2017).

## Table 6

### *Results of Hypothesis*

<b>Hypothesis</b>	<b>Description</b>	<b>Decision</b>
H <sub>1A</sub>	Herding positively influences the stock investment decision	Accepted
H <sub>1B</sub>	Loss aversion positively influences the stock investment decision	Accepted
H <sub>1C</sub>	Overconfidence positively influences the stock investment decision	Accepted
H <sub>1D</sub>	Risk propensity positively influences the stock investment decision	Accepted

*Source: Author's collection*

Overconfidence behaviour has significant positive influence on stock investment decision due to overconfidence investors overestimate their abilities compare to other investors about stock investment that might leads to investment in risky assets



which might generate unexpected results and this result is consistent with the evidences of (Arik & Sri, 2021; Desrita, 2022; Ainia & Lutfi, 2019; Adielyani & Mawardi, 2020; Madaan & Singh, 2019). Similarly, risk propensity has significant positive influence on stock investment decision due to it makes investors aware about risk and try to take calculated risk which leads to positive investment decision and this evidence is consistent with the evidence of (Ul Abdin et al., 2022; Mulyani et al., 2021; Riaz & Hunjra, 2015). Finally, the summary of the results of hypothesis is dispensed into Table 6.

### **Conclusion and Implications**

This study explores the significance of behavioural finance while making stock investment decision among the youth students. This study found that behavioural finance represented by herding, loss aversion, overconfidence and risk propensity have significant influence on stock investment decision. Likewise, Nepalese investors are largely influenced by behavioural biases that leads to irrational decisions. Students who are currently studying in master level in management and also participation into share market are also follow the rumours, crowds, noise, trend and follows the decision of the others. They are failed to utilize their knowledge of financial management, economics, accountancy and statistics properly in the analysis of financial markets. Students try to avoid losses which is quite important than acquiring gains. However, Nepalese share market is highly affected by pandemic 2019 so students are also excessively suffered by loss. Similarly, they become more overconfidence of their knowledge about financial management that also leads to investment decisions. Finally, most of the students are youth with age of 30 or less so they are unaware about risk so they must give high attention towards risk and proper ware of risk factors and focus on holding for long-term investment.

This study recommends that students must aware about behavioural biases that ultimately affects the investment decisions. Students should not be always based on noise and needs to properly utilize their knowledge of management course especially financial management and analyse the market with up-to-date information. This finding will be fruitful to the academicians especially, finance subject faculties should properly aware about teaching not only finance text books but also real financial market place too.

## References

- Ackert, L. F. (2014). Traditional and behavioral finance. *Investor behavior: The psychology of financial planning and investing*, 1, 25-41. <https://doi.org/10.1002/9781118813454.ch2>
- Adielyani, D., & Mawardi, W. (2020). The influence of overconfidence, herding behavior, and risk tolerance on stock investment decisions: The empirical study of millennial investors in Semarang City. *Jurnal Maksipreneur: Manajemen, Koperasi, dan Entrepreneurship*, 10(1), 89-101. DOI: <http://dx.doi.org/10.30588/jmp.v10i1.691>
- Ainia, N. S. N., & Lutfi, L. (2019). The influence of risk perception, risk tolerance, overconfidence, and loss aversion towards investment decision making. *Journal of Economics, Business, and Accountancy Ventura*, 21(3), 401-413. <https://doi.org/10.14414/jebav.v21i3.1663>
- Areiqat, A. Y., Abu-Rumman, A., Al-Alani, Y. S., & Alhorani, A. (2019). Impact of behavioral finance on stock investment decisions applied study on a sample of investors at Amman stock exchange. *Academy of Accounting and Financial Studies Journal*, 23(2), 1-17.
- Arik, S. L., & Sri, A. L. (2021). The Effect of Overconfidence and Optimism Bias on Stock Investment Decisions with Financial Literature as Moderating Variable. *Eurasia: Economics & Business*, 12(54), 84-93. <https://doi.org/10.18551/econeurasia.2021-12>
- Bagchi, S., Mukherjee, D., Mohanty, D., & Verma, A. (2022). Influence of behavioral biases while making decision on mutual fund investment. *Journal of Information and Optimization Sciences*, 43(7), 1733-1747. <https://doi.org/10.1080/02522667.2022.2128529>
- Bikhchandani, S., & Sharma, S. (2000). Herd behavior in financial markets. *IMF Staff papers*, 47(3), 279-310. <https://doi.org/10.2307/3867650>
- Chun, W.W., & Ming, L. M. (2009). Investor behaviour and decision-making style: a Malaysian perspective. *The Journal of the Institute of Bankers Malaysia*, 133, 3-13.
- Combrink, S., & Lew, C. (2020). Potential underdog bias, overconfidence and risk propensity in investor decision-making behavior. *Journal of Behavioral Finance*, 21(4), 337-351. <https://doi.org/10.1080/15427560.2019.1692843>

- Desrita, L. (2022). The Influence of Financial Behavior with Risk Perception as Moderation in Determining Investment Decisions in Batam City. *Inovbiz: Jurnal Inovasi Bisnis*, 12(2), 170-178. <https://doi.org/10.35314/inovbiz.v10i2.2782>
- Elshqirat, M. K. (2019). Testing Sectoral Herding in the Jordanian Stock Market. *International Business Research*, 12(8), 88-106. <https://doi.org/10.5539/ibr.v12n8p88>
- Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The Journal of Finance*, 25(2), 383-417. <https://doi.org/10.2307/2325486>
- Furman, N., Shooter, W., & Schumann, S. (2010). The roles of heuristics, avalanche forecast, and risk propensity in the decision making of backcountry skiers. *Leisure Sciences*, 32(5), 453-469. <https://doi.org/10.1080/01490400.2010.510967>
- Garvey, J. (2010). An investigation into risk propensity in bull and bear markets. *Journal of Risk Research*, 13(6), 789-804. <https://doi.org/10.1080/13669870903560283>
- Hamid, F. S., Rangel, G. J., Taib, F. M., & Thurasamy, R. (2013). The relationship between risk propensity, risk perception and risk-taking behaviour in an emerging market. *International Journal of Banking and Finance*, 10(1), 134-146.
- Hossain, T., & Siddiqua, P. (2022). Exploring the influence of behavioral aspects on stock investment decision-making: a study on Bangladeshi individual investors. *PSU Research Review*. 1-17. <https://doi.org/10.1108/PRR-10-2021-0054>
- Jain, J., Walia, N., & Gupta, S. (2020). Evaluation of behavioral biases affecting investment decision making of individual equity investors by fuzzy analytic hierarchy process. *Review of Behavioral Finance*, 12(3), 297-314. <https://doi.org/10.1108/RBF-03-2019-0044>
- Johnson, D. D., & Fowler, J. H. (2011). The evolution of overconfidence. *Nature*, 477(7364), 317-320. <https://doi.org/10.1038/nature10384>
- Kahneman, D., & Tversky, A. (1979). Prospect theory, an analysis of decision under risk. *Econometrica*, 47(2), 264-291.
- Khan, M. Z. U. (2017). Impact of availability bias and loss aversion bias on investment decision making, moderating role of risk perception. *Management & Administration (IMPACT: JMDGMA)*, 1(1), 17-28.

- Kourtidis, D., Šević, Z., & Chatzoglou, P. (2011). Investors' trading activity, a behavioural perspective: professionals vs. individuals. *International Journal of Behavioural Accounting and Finance*, 2(3-4), 346-366. <https://doi.org/10.1504/IJBAF.2011.045021>
- Kumar, A. A., & Babu, M. (2018). Effect of loss aversion bias on investment decision: A study. *Journal of Emerging Technologies and Innovative Research*, 5(11), 71-76.
- Kumar, S., & Goyal, N. (2016). Evidence on rationality and behavioural biases in investment decision making. *Qualitative Research in Financial Markets*, 8(4), 270–287. <https://doi.org/10.1108/QRFM-05-2016-0016>
- Madaan, G., & Singh, S. (2019). An Analysis of Behavioral Biases in Investment Decision-Making. *International Journal of Financial Research*, 10(4), 55-67. <https://doi.org/10.5430/ijfr.v10n4p55>
- Mahina, J. N., Muturi, W. M., & Memba, F. S. (2017). Influence of Loss Aversion Bias on Investments at The Rwanda Stock Exchange. *International Journal of Accounting, Finance and Risk Management*, 2(5), 131-137.
- Markowitz, H. (1952). Portfolio selection. *The Journal of Finance*, 7(1), 77–91. <https://doi.org/10.1144/GSL.JGS.1861.017.01-02.11>
- Mulyani, E., Fitra, H., & Honesty, F. F. (2021, November). Investment Decisions: The Effect of Risk Perceptions and Risk Propensity for Beginner Investors in West Sumatra. In *Seventh Padang International Conference on Economics Education, Economics, Business and Management, Accounting and Entrepreneurship (PICEEBA 2021)*, Atlantis Press. 49-55. <https://dx.doi.org/10.2991/aebmr.k.211117.034>
- Mumaraki, J., & Nasieku, T. (2016). Effect of overconfidence on individual investment decision: Evidence from the investment services sector in Kenya. *The International Journal of Business & Management*, 4(10), 254-261.
- Pochea, M. M., Filip, A. M., & Pece, A. M. (2017). Herding behavior in CEE stock markets under asymmetric conditions: a quantile regression analysis. *Journal of Behavioral Finance*, 18(4), 400-416. <https://doi.org/10.1080/15427560.2017.1344677>
- Pompian, M. M. (2012). *Behavioural finance and investor types: managing behaviour to make better investment decisions*. John Wiley & Sons.

- Raut, R. K., & Kumar, R. (2018). Investment decision-making process between different groups of investors: a study of Indian stock market. *Asia-Pacific Journal of Management Research and Innovation*, 14(1-2), 39-49. DOI: 10.1177/2319510X18813770
- Riaz, L., & Hunjra, A. I. (2015). Relationship between psychological factors and investment decision making: The mediating role of risk perception. *Pakistan Journal of Commerce and Social Sciences*, 9(3), 968-981. Available at SSRN: <https://ssrn.com/abstract=3229723>.
- Sahi, S. K. (2017). Psychological biases of individual investors and financial satisfaction. *Journal of Consumer Behaviour*, 16(6), 511-535. <https://doi.org/10.1002/cb.1644>
- Sekaran, U., & Bougie, R. (2016). *Research Methods for Business: A Skill Building Approach*. John Wiley & Sons.
- Sharma, S. & Sharma, S. (2022). A Study of Traditional Finance and Behavioural Finance: Rationality to Irrationality. *Journal of Contemporary Issues in Business and Government*, 28(4). <https://doi.org/10.47750/cibg.2022.28.04.066>.
- Sharpe, W. F. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk. *The Journal of finance*, 19(3), 425-442. <https://doi.org/10.1111/j.1540-6261.1964.tb02865.x>
- Sitkin, S. B., & Weingart, L. R. (1995). Determinants of risky decision-making behavior: A test of the mediating role of risk perceptions and propensity. *Academy of management Journal*, 38(6), 1573-1592. <https://doi.org/10.5465/256844>
- Ul Abidin, S. Z., Qureshi, F., Iqbal, J., & Sultana, S. (2022). Overconfidence bias and investment performance: A mediating effect of risk propensity. *Borsa Istanbul Review*, 22(4), 780-793. <https://doi.org/10.1016/j.bir.2022.03.001>.
- Wood, R., & Zaichkowsky, J. L. (2004). Attitudes and trading behavior of stock market investors: A segmentation approach. *The Journal of Behavioral Finance*, 5(3), 170-179. [https://doi.org/10.1207/s15427579jpfm0503\\_5](https://doi.org/10.1207/s15427579jpfm0503_5)
- Wu, G., Yang, B., & Zhao, N. (2020). Herding behaviour in Chinese stock market during COVID-19. *Emerging Markets, Finance and Trade*, 56(15), 3578-3587.
- Zahera, S. A., & Bansal, R. (2018). Do investors exhibit behavioral biases in investment decision making? A systematic review. *Qualitative Research in Financial Markets*. 10(2), 210-251. <https://doi.org/10.1108/QRFM-04-2017-0028>



## Original Research Article

# Power of Reading: Reading as a Strategy for Learning English

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### Abstract

Why don't language acquirers take advantage of the power of reading goes the heading of Krashen's 1997 article in which he cites studies that establish with evidence that through extensive reading learners can acquire larger vocabularies, do better in spelling, writing skills and in tests of grammar. In other words, he claims that reading serves as powerful means of developing one's competence in the second language because it provides the required input. Drawing from my own experience of exclusively relying on reading strategy for English language learning, I argue, with Krashen, that extensive reading or free voluntary reading is a powerful means of developing the second language competence (Kim & Krashen 1997, Krashen 2004). I adopt autoethnography as my method of inquiry and look back upon my own recollections of how I utilized 'reading' as a default strategy in developing a working knowledge of the English language. I use a retrospective composition I wrote back in the year 2012, which recounts my struggle for learning English through my school years to the days of my early career as a teacher of English, as my data text and adopt qualitative interpretive analysis.

**Keywords:** *reading, second language acquisition, input hypothesis, free voluntary reading (FVR)*

### Emergence of the Research Issue

Although Nepal is a multilingual, multicultural and multiethnic country, few of its own national languages, besides Nepali, are taught in Nepal. Instead, the English language, originally the language of the British people, finds a prominent place in Nepalese education system. From its early influence on Nepalese elites (Kerr, 1999; as cited in Poudel, 2016) ever since the British had contact with Nepalese people in the second half of the 18<sup>th</sup> century to its formal introduction in Nepalese education

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system, although only for the Rana family at that time, by Junga Bahadur Rana when he returned from his visit to Europe in 1851 (Shrestha, 2008), English has always been taught as a foreign and international language. After democracy was established in 1951, the broader population was explicitly given access to education (Dawadi, 2018), and since then English has been taught in schools giving it a heavy curricular weightage (Giri 2015). Citing various instances of the prominence of English from various educational and public spheres, Giri (2015) claims that English has been serving in Nepal instrumental, regulative, interpersonal, and creative/innovative functions, as required for a language to gain a local language status suggested in Kachruvian framework.

Articles like Giri (2015), Shrestha (1983) and Shrestha (2008) argue that English language is quite common in Nepal, and a preference of most Nepalese parents. However, studying English as a subject has always remained a tough challenge for majority of students studying in Nepali medium schools and colleges. English is a difficult subject to study for many students (Akbari, 2015; Phyak, 2016; as cited in Chand, 2021, p. 48). At the school level or at university level, English is one of the subjects in which many students ‘fail’ as they consider it to be an exceedingly difficult subject (Ahmed, 2015). Successful or unsuccessful, students in Nepal go through English courses at school or university levels, some with full awareness and motivation, and some only to due to compulsion or because it is a compulsory subject in the curriculum.

These days around there are several resources available for learning English. Besides receiving instructions in the classrooms from smart teachers who employ a variety of modern pedagogical approaches and techniques (Sheralieva, Rasulova & Khalikova, 2022), learners on their own can find and watch English movies, and access language learning videos, teachers’ blogposts, language learning applications (e.g., Duolingo) and other supplementary materials online and offline. They may search friends in their vicinity or on social media to interact and practice their language with. However, stories were different when under-resourced Nepalese village students struggled to learn the English language 30 years ago.

Back in late 1980s and early 90s, when I was a student in a hill-based government-aided Nepali medium school, English used to be introduced from fourth grade onward. Although in the modern times, with technological advancements, various alternative

English language learning materials have been made widely available to learners even in Nepal, back then the only materials available were the English textbooks. In the hilly districts of Nepal, even the textbooks barely reached in time. Thus, I and my contemporaries solely depended on the classroom instruction and the reading of textbooks for learning English. In our time listening skills were not incorporated in the curriculum and the only listening we did was listening to teachers in the class. Speaking skill was not focused either. The only speaking we did was recitation of the passages or dialogues from textbooks. There were no speaking opportunities outside the school. Thus, our, or rather mine, default strategy, throughout the school and college levels, of learning English has been ‘reading’. In this article, I recount my own tale of ‘learning English through reading’ being based on autobiographical reflections I composed in 2012.

### **Reading as a Language Skill and a Learning Strategy**

ELT textbooks and authors tend to talk of English language learning skills as being divided into receptive and productive. Reading and listening skills in which meaning needs to be drawn from the text or discourse are regarded as receptive skills, and speaking and writing in which learners have to actually produce language themselves are termed productive skills (Harmer, 2020). These language skills are also classified as being primary and secondary skills, with listening and speaking as belonging to the former category and reading and writing as belonging to the latter. Following Krashen (1987), these skills are even expected to be acquired, at least in the case of first language acquisition, in natural order with listening and speaking followed by more complex skills- reading and writing. Viewed thus, reading is considered a more advanced skill than listening and speaking.

Linse (2005) defines reading as a “set of skills that involves making sense and deriving meaning from the printed word.... [i.e.] we must be able to decode (sound out) the printed words and also comprehend what we read” (p.69). For Anderson (2003) also, the aim of reading is comprehension. Emphasizing the comprehension part, Ur (2012) reiterates:

In the context of language learning, reading means ‘reading and understanding’. A student who says, ‘I can read the words, but I don’t know what they mean’ is not, therefore, reading, in this sense, but merely decoding: translating the written symbols into their corresponding sounds. (p.133)



We know reading skill is a composite of many specific subskills. Defining reading as the capacity to identify words and phrases, Heaton (1990) lists some sub-constructs or subcomponents of the reading skill, such as, relating sounds with their corresponding written symbols; work out the meanings of words by understanding clues related to word-formation and context; comprehend overtly stated information and understand relations within the sentence; understand links between parts of a text; notice time and space relations, and also sequence of ideas; comprehend conceptual meaning; speculate and predict what will come next in the text; recognize the main idea and other prominent features in a text; make generalizations and draw conclusions; perceive ideas not explicitly stated by making inferences and interpreting figurative language; read for general and specific information; read critically; and follow a flexible approach and adopt different reading strategies according to the type of the text and one's purpose.

Thus, reading is not just running our eyes along the lines of the text or sounding out the words. It comprises 'higher order thinking skills' and is more complex than merely deciphering individual words (Linse, 2005). For second language learners, reading skill is much more problematic. Peregoy and Boyle (2004) mention three factors that determine the second language learners' success in reading, namely- "the child's background knowledge, linguistic knowledge of the target language, and the strategies or techniques the child uses to tackle the text" (as cited in Linse, 2005, p. 69).

Reading can also be used as a strategy for (second) language learning. For Mart (2018), "reading is one of the most effective ways of foreign language learning" (p.92). I believe it is true of many learners of English in the countries where it is not a native language or where it cannot be 'picked up' from the environment. Many learners like myself have learnt English language exclusively by reading it, partly because we lacked opportunities of practicing listening and speaking (except in the classrooms). In this regard, Bright and McGregor (1970) opine that reading is the most enjoyable approach to learn a language, since it is through reading, students come across memorable words and expressions. They further point out:

Where there is little reading there will be little language learning. ... the student who wants to learn English will have to read himself into a knowledge of it unless he can move into an English environment (Bright, & McGregor, 1970, p.52).

For many learners, reading may be the only activity in the course of second or foreign language learning. Of course, reading may be followed by taking down notes, and writing exams based on what one has read. Linkon (2016) argues that reading may be the single most common learning activity in higher education. While many faculty use lectures, discussions, exams, or writing assignments as part of their pedagogical practice, almost all of the faculty members assign readings. Nation (1997) reports about the benefits of such extensive reading. Reviewing various ‘book flood’ input-focused extensive reading studies conducted by various researchers, Nation argues that there is a wide range of language-learning benefits from reading activity including improvement in reading and a range of language uses and areas of language knowledge as well as affective benefits as well. He is of the opinion that achievement in reading and related skills, most remarkably writing, motivates learners to enjoy learning and to value their study of English.

Horst et al. (1998, citing Stenberg, 1987; Wodinsky & Nation, 1988) claim that reading is ‘well-established’ as one of the primary methods of learning new words; it is crucial for the development of a first language, and it is also thought to be crucial for the development of a second language.

### **Theoretical Support**

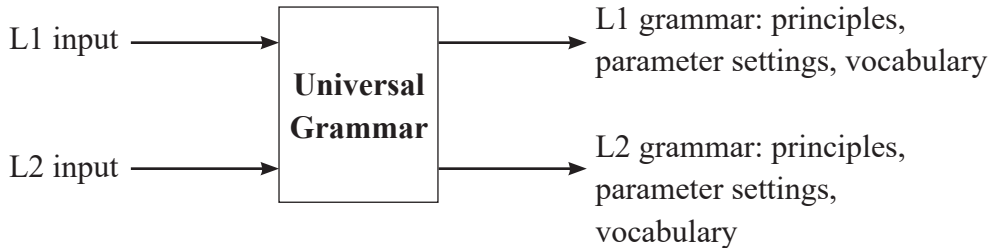
In drawing propositions for this article, I have worked within the confines of mentalist/generativist theory of linguistics lead by Chomsky (1964, 1972, 1981) along with the comprehensible input hypothesis proposed by Krashen (1985). Chomsky, the chief proponent of cognitivist/ generativist movement argues that human infants are born with an innate language acquisition device (Language Faculty consisting of Universal Grammar, UG; Radford, 2009) which enables any normal human child to acquire language from experience, and thus language acquisition is a subconscious but active mental process. For Chomsky, (2000, p. 4), “evidently each language is the result of the interplay of two factors: the initial state and the course of experience. We can think of the initial state as a “language acquisition device” that takes experience as “input” and gives the language as an “output”—an “output” that is internally represented in the mind/brain.”

Thus, Chomsky focuses on exposure to ‘input’ with which human mind can build grammar or knowledge of language. Although Chomsky himself says nothing

about second language acquisition, the UG mechanism is also said to be available for second language acquisition by supporters of UG theory.

**Figure 1**

*The Universal Grammar model of first language acquisition extended to second language acquisition*



*-Adapted from Cook, (2007, p.229)*

Assuming sufficient input as the precondition for language acquisition, Krashen (1981) also puts forward his Input Hypothesis (IH). For Krashen (1984) input which is comprehensible is "the only true cause of second language acquisition" (p.6). Aligning his theory with Chomsky's model of language acquisition involving Language Acquisition Device (LAD), Krashen in his (1989) article claims that language is subconsciously acquired- i.e., one is not consciously aware of acquiring a language as one's conscious focus is on the message, and not the form. Also, the acquired knowledge remains subconsciously in the brain as "tacit knowledge" in Chomskyan terms.

Being roughly based on these theoretical assumptions, I argue that I used 'reading' as my second language input, and that has led me to acquisition of the English language.

## **Methodology**

The data on which I base my arguments are my own retrospections, recollecting the 'lived experiences' of learning English starting from school age onwards which I happen to have composed about a decade ago in 2012 and saved them somehow. In doing so, I have adopted autoethnography as my approach to inquiry which attempts to systematically describe and analyze personal, lived experiences for the purpose of relating to or interpreting cultural experiences. Autoethnography, as a qualitative

research method, combines auto (self) and ethnography (study of culture) to explore and understand personal experiences in the context of culture and society (Ellis & Bochner, 2000). According to Ellis (2004), autoethnography is "an autobiographical genre of writing that displays multiple layers of consciousness, connecting the personal to the cultural" (p. 26). This approach challenges established ways of "doing research and representing others and treats research as a political, socially-just and socially conscious act" (Ellis, Adams, & Bochner, 2010, para. 1).

In writing this article, I am adopting the interpretivist paradigm of arriving at understanding of reality through subjective interpretation of lived experiences, and the practice of combining the methods of autobiography and ethnography. As an autobiographer, I am narrating my own story, outlining different phases of the English language journey of a rural village youth in an under-resourced context. As an ethnographer, I am reviewing my own situation in the context of Nepalese rural village educational culture of 30 years ago which provided very little support in terms of methods and materials for learning English. However, my orientation here is not much 'political' but more linguistic, attempting to understand how conducive my reading experiences were to second language acquisition.

## Reflections and Interpretation

### Earliest Memories

I believe, for most individuals of my generation who went to school in Nepalese rural villages in late 1980s and early 90s, the English language learning experience was largely along the lines I have laid down in my stories. Here is a piece of a composition I wrote in 2012 recollecting my earliest experience of being introduced to English.

*I was brought up in a desolate hill community where nobody spoke English. I started learning English alphabets from the fourth grade. The earliest memory I have of learning English is that of reciting word-meanings translated into Nepali:*

*CAT = cat mane biralo (means cat)*

*DOG = dog mane kukur (means dog)*

*COW = cow mane gai (means cow)*

*The teachers who taught me ABCD at school were all Nepalese. I had very little exposure to authentic English in my childhood years, the time considered to be crucial for learning or acquiring a language. These days parents and family members are seen*

*hovering over their kids helping them with their English homework, but I had nobody at home who could help me with (English) homework. Although, in the later years, I sometimes listened to the 8 o'clock English news, if my grandfather did not turn off the radio, from Radio Nepal without any motivation, barely understanding anything, I did not see an English newspaper until I went to college years later. At school, we had only 45-minute English class six days a week, but we did not speak much English inside the class, let alone outside. The only English we spoke was the recitation of passages and dialogues from the textbooks. And teachers gave us grammar rules and we memorized them. They provided us with meanings of English words in Nepali, our mother tongue, and translated the lines for us, which we parroted. We even memorized readymade essays. We wrote memorized answers in exams. I often passed the exams with flying scores because I was good at memorizing back then. I am not blaming the teachers. They did the best of what they could. That was the pedagogy of the time, the Don Lucas method.*

The tale of my early experience with English points out a few things. First, the age at which English was introduced to students used to be 9/10 (i.e, when they/we were in the fourth grade) unlike now when the school children begin learning their first ABCD as early as the age of 3. Lenneberg (1967), the proponent of the critical period hypothesis, states that the first few years of life, i.e., the childhood, is a crucial time within which an individual can acquire a language if exposed to adequate stimuli. During my critical period, the only stimuli I received were school textbooks and grammar rules in the notebooks, not much exposure to natural language use. Secondly, the major task I engaged in was reading for ‘memorization’ if not for comprehension- although translations by teachers helped us comprehend the texts. Thirdly, the textbooks that were used were not authentic texts, but simplified materials prepared for the classroom purpose. The authentic texts are those texts which were produced to fulfil some real-life communicative functions in the language community where they are used (Little, & Singleton, 1988) Whatsoever, grammar-translation method, the classical method of the time (Larsen-freeman & Anderson, 2011) had its day, and it produced results because I passed the tests, which probably tested memories rather than language skills.

### **The Real Predicament**

Although I had completed my school education from Nepali-medium government-aided school, I had the audacity to choose Major English when I came to

college. However, when I started the college, I discovered that six years of 45-minute English classes at schools, and the school English textbooks had barely prepared me for facing the college English texts, and here is the story of the predicament I faced when I first encountered college texts which were authentic.

*When I came to college I was, for the first time, appalled by the complexity of the English texts. They were so alien. There were so many strange words, so difficult to pronounce and so complex to spell. At first, I tried to proceed with the method I had learnt at school. I started making a list of the new words that I encountered in the texts and memorizing their meanings in Nepali. That was a hopeless attempt as the word lists were despairingly long. I soon gave up and surrendered to the complexity of English. I thought I was very dull, which I still believe I am! I just sat in the English literature classes listening to the tutor who never translated anything into Nepali. I understood nothing for the first three months. Things went right over my head. My school had not prepared me for that kind of English lessons. I thought I would go nuts! I again started gobbling the word meanings I copied from an English-Nepali dictionary. I started memorizing the summaries of the stories I found in guidebooks. I tried reading the original texts, but they were impenetrable. There were some stories, some essays, and the novel 'Old Man and the Sea' by Hemingway in the first year of the intermediate major English course. Of the novel, I understood nothing, but I still remember the line: man can be destroyed but never be defeated, which the tutor so much focused on. I spent several hours in desperate attempts and thought I would get nowhere. When I sat for the annual English literature test, I was thunderstruck. I had never learnt to write sentences of my own. I started sweating because I felt that, for the first time in my life, I was going to fail a test! In my bewilderment, I did not know what I wrote in the test paper and how the three long hours passed. When the results came out, my score in literature was 33. I did not fail but after that test I realized that I had been wrong all along in my approach.*

In case of first language acquisition, children develop the working knowledge of their L1 within 3-4 years of age because they are exposed to natural language use every day. As this section of the story illustrates, the amount of English I had gone through at school (45-minutes of English class on weekdays for six years) had not taught me enough English to face the college texts. This seems to be the case of 'insufficient input', and one needs sufficient comprehensible input to acquire a

language (Krashen, 1984). It appears that there used to be a huge gap between the school and the college curriculum. A number of things can be blamed for this gap. First the amount of reading I had done at school was very inadequate. Next, the types of reading texts (simplified) used in school were different from those (authentic) that were used in the college. Thirdly, the college English curriculum presented texts that were culturally so alien which we could not comprehend even if we could decode. The reason, I could not understand the novel “Old Man and the Sea” was because I, being a resident of a landlocked country, had never known anything of the sea and sailing culture before. The input content would have been more comprehensible for me if our won folk tales or mythologies had been presented in English. Pioneer of the Comprehensible input Hypothesis, Stephen Krashen argues that we acquire language when we understand what we hear or read, or more specifically, “comprehensible input is the essential environmental ingredient...” (Krashen, 1989, p. 440). My techniques and strategies might have been also wrong, but the major problem was the input which was way beyond my comprehension level.

### **Changing the Strategies**

Since I had no power to change the curriculum and the texts prescribed by the university, what I changed in my second year at the university was my strategies. Here is the story of how my second year laid the foundation of my English.

*So, from the second year onwards, I gave up memorizing altogether. I struggled through the original texts and concentrated on comprehension rather than on committing things to memory. I started using an English-English dictionary and used it only when it was utterly necessary. Even till my second year at college, reading widely for pleasure was not my hobby. My whole time was occupied by course books. One important habit I developed during that year was 'making my own notes'. I read the texts many times, used teacher's notes and other bazaar notes to understand the content but I made my own notes, in my own sentences, right or wrong. I scored 47 in my second-year literature test. That was not a good score, but I knew that I would not fail any English test then onwards. I grew confident. That year laid the foundation of my English. I knew how to read. I subscribed to The Himalayan Times, a newspaper available in English, for six months with the hope of improving my English. I made a point of at least going through each headline. At first, I found the journalistic jargon*

*shocking but gradually, I got the sense of what they meant. I could hardly taste the literariness of the literature. All my time was spent trying to understand the literal meanings of the texts. The first novel that I read, with some interest and understanding, was 'The Moonstone' by Wilkie Collins, but I could not at all follow Rudyard Kipling's 'Kim'. I would not have read either book had they not been the course books. Of all the literary texts, I found poetry to be the most difficult because I could never decipher what the poets meant to say between the lines. They still frighten me. 'Lord of the Flies' by William Golding was the first non-course novel which I tried with meager success and that was when I was in BA third year. Then somebody handed me 'Sophie's World' written by Norwegian writer Jostein Gaarder and I found that comprehensible and fascinating. Only after finishing my BA, I started buying and borrowing books to read for pleasure. By then, I had fully realized that my low score in BA had been due to my poor English and the only way to improve my English was to read voraciously. Then I began to read whatever I could lay my hands on, all fiction and non-fiction whichever were available, some with partial success, some with full enjoyment and some with utter disappointment. I had not yet become a good reader who could appreciate the texts but just an amateur reader – I just read because it was fun. But, anyway, I succeeded in developing reading as a habit or more importantly, as a hobby. Some of the good books I read during those years were 'Tess of the d'Urbervilles' by Thomas Hardy, 'Pride and Prejudice' by Jane Austen, 'War and Peace' by Leo Tolstoy, 'God of Small Things' by Arundhati Roy, 'The Alchemist' by Paulo Coelho, 'A Brief History of Time' by Stephen Hawking and 'My Experiments with Truth' by Gandhi etc.*

This section of my story demonstrates some strategic changes in my approach that worked. Reading was difficult for me, but I responded with more reading. Making my own notes of the material I read, consulting English-English dictionaries, additional reading of the national newspaper *The Himalayan Times* which somehow presented 'comprehensible input' to me, and finding interesting content to read were some strategies that dominated my approach.

Note making has been recognized as a well-known study technique by teachers. Babu (2015), reviewing various studies (Kiewra, 1985; Fisher and Harris,



1973; Annis and Davis, 1975; Di Vesta and Gray, 1972; Barnett et al., 1981) on the value of note making, concludes that many students who make notes perform better than those who do not, and making notes is effective on recalling and supports students' learning. Similarly, an English-English dictionary is also regarded as an 'essential and invaluable resource' for English learners at different levels (Taylor, 2004). The reading of English newspaper, which somehow contained more familiar 'comprehensible' content compared to the English literature textbooks also facilitated my learning, which, I believe, validates Krashen's comprehensible input hypothesis. The additional reading helped me acquire more vocabulary and spelling (Krashen, 1989); and "vocabulary is one of those things where the rich get richer" (Hinkel, 2009; as cited in Nurmukhamedov, 2012, p. 10). Lastly, my free voluntary reading (FVR) (Krashen, 2004) or "engaged reading" (Ivey & Johnston, 2015) of the self-selected self-paced books (novels) of my interest and developing reading as a hobby provided me a foundation so that I could reach a higher proficiency.

### **Reading to Teach and Teaching to Read**

Being a student and reading textbooks to pass the exam and reading the texts to make your students understand them as a teacher seem remotely related. In my experience, a good student is not guaranteed to become a good teacher. Rather, a good teacher always remains a good student or a learner. Next, reading to teach involves, 'reading with a purpose' (Linderholm, 2014), which is more focused than free voluntary reading. Here is the story of what happened when a student became a teacher.

*When I started teaching in an English medium boarding school, I found that my BA and all my reading had not prepared me even for teaching kids. The job was challenging because, as an English teacher, I was required to speak English. That was the rule in the boarding school. I entered the class and somehow delivered my first lesson in English. I had never spoken English before! I do not know how my first students liked my English. But I got selected. However, I realized that I needed to learn the basics again with greater precision: the correct spelling of the words and correct structures. I had to consult grammar books and dictionaries several times. I did not know how hard my kids worked but I had to spend hours at home making preparations. The children's textbooks were challenging! In fact, I feel like I read and learnt more English while teaching at boarding schools than during my own school and college years. When I corrected my students' writing, I learnt to write precise answers. ...*

*Learning English as a foreign language and an academic discipline has, thus, not been an easy task for me; and I believe it is also true of many others like me i.e., people without English schooling and exposure, and for those who do not have any special motivation for learning it. English is still one of the most difficult subjects for many public college students all over Nepal, because many of them come from Nepali medium schooling backgrounds from the villages and rural parts. It is natural that many of my students, in Nepali medium classes complain that they do not understand English texts. Neither do I! Many texts are way beyond my capacity. I obviously have to read a text several times before I can begin to understand it. So, when they talk of a particular text being invincible at first go, my answer to them is, "My dear, how could you hope to understand it at first reading when your teacher has to read it five times?" (Whatever applies to me, though, might not apply to you if you are a genius, which I am not!) But you really need to read a text several times, consulting dictionaries and references, when necessary, before you are able to make anything out of it.*

Although becoming a teacher means much more than just ‘reading a lot’, and life of a teacher is a ‘multidimensional space’ (Fuller and Brown, 1975), the amount of reading one does increases after one becomes a teacher. Reading for fun and putting down a book when it is impenetrable or boring is not an option for a teacher; one has to read and re-read the text, comprehend it by all means and be prepared to interpret it if one wants to survive as a teacher. The style of reading also changes- you apply multiple strategies of reading- skimming, scanning, intensive reading, extensive reading, and analytical reading (Harmer, 2020). Consequently, one develops one’s language skills more precisely in the process of such reading. Finally, the more one reads, the more one learns to read adopting and adapting strategies that suits one best. And the more one reads, the more one realizes the *power of reading* (Krashen 2004).

Although after finding a teacher’s job, I was engaged in more focused reading, the earlier free voluntary reading seems to have developed my basic competence in English language. The fact that I was able to speak in my first boarding school class even though I had never engaged in speaking activities before supports the claim that “extensive pleasure reading can contribute to oral/aural competence as well” (Cho and Krashen, 1994, 1995a, 1995b; as cited in Kim & Krashen 1997, p.27)

## Conclusion and Implication

My journey of learning English starting from the first introduction to ABCD in the fourth grade to developing a teaching knowledge of the language reinforces my original proposition that the knowledge of a language can be acquired exclusively through reading because, of all the activities I engaged in, reading was the activity which stood out most prominent. This ‘reading’ provided the required input, although not early enough in my life. My leaning or acquisition of the English as a second language began to happen as I flooded myself with more reading (FVR), utilizing varying strategies, including note-making and reading for a purpose. It is not very clear from my stories what my motivations were, especially in my college days, but once you have “boarded the train there is no getting off” as the famous Sylvia Plath metaphor goes. I was self-determined to get through the English courses in the BA, thus somehow the Self-Determination Theory (SDT) of Deci & Ryan (1985) seems to be at work in my drive behind the continuous struggle. Another fact which emerges from my story is that developing a foundation of language is a time-taking process-although I was probably developing the basics from school age onwards, it took me at least one year of intensive reading to grow confidence to tackle any English text. Its implication for SLA theory is that the second language, like the first language can be acquired, through exposure in the form of reading; or it happens subconsciously when you are reading novels or newspaper, provided what you are reading is interesting and comprehensible to you. Likewise, the language knowledge that you acquire through reading passes over to development of other skills- I was able to speak English, irrespective of pronunciation errors and fluency issues, all of a sudden when I entered to teach my first class as a result of my continual reading. However, my partial endorsement, here, of input hypothesis (Krashen, 1985) or power of reading (Krashen, 1997, 2004) is not intended to downplay the importance of output-focused approaches as Swain (1995), Gass (1997) and others have suggested. My story simply suggests that self-selected and free-voluntary reading engagement worked for me and might work in other situations.

## References

Ahmed, S. (2015). Attitudes towards English language learning among EFL learners at UMSKAL. *Journal of Education and Practice*, 6(18), 6-18. <https://www.iiste.org>

- Akbari, Z. (2015). Current Challenges in teaching/learning English for EFL learners: The case of Junior High School and High School. *Procedia - Social and Behavioral Sciences*, 199, 394-401. <https://doi.org/10.1016/j.sbspro.2015.07.524>
- Babu, N.S. (2015). The utility of note-making –A study. *Scholarly Research Journal for Interdisciplinary Studies*, 4(26). 2763-2768
- Chand, G.B. (2021). Challenges Faced by Bachelor Level Students While Speaking English. *Indonesian Journal of English Language Teaching and Applied Linguistics*, 6(1), 45-60
- Chomsky, N. (1986). *Knowledge of language*. Praeger.
- Chomsky, N. (2000). *New horizons in the study of language and mind*. Cambridge: Cambridge University Press.
- Cook, V. & Newson, M. (2007). *Chomsky's Universal Grammar: An Introduction*. Blackwell.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Plenum Press
- Ellis, C., & Bochner, A. P. (2000). Autoethnography, personal narrative, reflexivity: Researcher as subject. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 733-768). Thousand Oaks, CA: Sage.
- Ellis, C. (2004). *The ethnographic I: A methodological novel about autoethnography*. AltaMira Press.
- Ellis, C., Adams, T. E., & Bochner, A. P. (2010). Autoethnography: An Overview [40 paragraphs]. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 12(1), Art.10, <http://nbn-resolving.de/urn:nbn:de:0114-fqs1101108>
- Fuller, F., & Brown, O. (1975). Becoming a teacher. In K. Ryan (Ed.), *Teacher Education: Seventy-Fourth Yearbook of the National Society for the Study of Education*. Chicago: University of Chicago Press.
- Gass, S. (1997). *Input, interaction and second language learner*. Lawrence Erlbaum.
- Giri, R. A. (2015) The many faces of English in Nepal. *Asian Englishes*, 17:2, 94-115, <https://doi/10.1080/13488678.2015.1003452>
- Holman Jones, S. (2005). Autoethnography: Making the personal political. In Norman K. Denzin & Yvonna S. Lincoln (Eds.), *Handbook of qualitative research* (pp.763-791). Sage.
- Ivey, G. & Johnston P.H. (2015) Engaged reading as a collaborative transformative practice. *Journal of Literacy Research*, 47(3) 297– 327. <https://doi.org/10.1177/1086296X15619731>

- Krashen, S. D. (1985). *The input hypothesis: Issues and implications*. Longman
- Krashen, S. D. (1989). We acquire vocabulary and spelling by reading: Additional evidence for the Input Hypothesis. *The Modern Language Journal*, Vol. 73, No. 4 (Winter, 1989), pp. 440-464
- Krashen, S., & Kim, H. (1997). Why don't language acquirers take advantage of the power of reading?/[http://sdrashen.com/content/articles/1997\\_take\\_adv\\_of\\_the\\_power\\_of\\_reading.pdf](http://sdrashen.com/content/articles/1997_take_adv_of_the_power_of_reading.pdf)
- Krashen, S. D. (2004). *The power of reading: Insights from the research* (2nd ed.). Heinemann, and Libraries Unlimited.
- Linkon, S. L. (2016). Reading matters: Framing a critical conversation about reading across the curriculum. *Teaching & Learning Inquiry*, 4(2). <http://dx.doi.org/10.20343/teachlearninqu.4.2.13>
- Little, D. G., & Singleton, D. M. (1988). *Authentic Materials and the Role of Fixed Support in Language Teaching: Towards a Manual for Language Learners*. Trinity Centre for Language and Communication Studies.
- Mart, C.T. (2012). Developing speaking skills through reading. *International Journal of English Linguistics*, 2(6). 91-96. URL: <http://dx.doi.org/10.5539/ijel.v2n6p91>
- Nurmukhamedov, U. (2012). Online English-English Learner Dictionaries Boost Word Learning. *English Teaching Forum*, (4). 10-15.
- Phyak, P. (2016). For Our Cho: Tlung: Decolonizing language ideologies and (re) imagining multilingual education policies and practices Nepal [Doctoral Dissertation, University of Hawaii]. Manoa.
- Poudel, T.R. (2016). English in Nepal: From colonial legacy to professionalism. *ELT Chautari*. <https://eltchautari.com>
- Sheralieva, S. I., Rasulova, Z.K., & Khalikova, L.U. (2022). New ways to learn English. *Eurasian Research Bulletin*, (14), 7-11. [www.geniusjournals.org](http://www.geniusjournals.org)
- Shrestha, P. (2008). ELT, ESP & EAP in Nepal: whose interests are served? In: Krzanowski, Mark ed. *EAP and ESP in Developing Countries: State of Play vs Actual Needs and Wants*. IATEFL (ESP SIG), pp. 191–210.
- Swain, M. (1995). Three functions of output in second language learning. In *Principles and Practice in Applied Linguistics*. G. Cook and B. Seidlhofer (eds.). Oxford University Press. 125-144
- Taylor, L. (2004). Considerations of Choosing an English-English Dictionary for ESL Students. *The Internet TESL Journal*, Vol. X, No. 7. <http://iteslj.org/Articles/Taylor-Dictionaries.html>



## Role of Social Media in Commercial Vegetable Farming for Rural Development

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### Abstract

*This study explore the role of social media in commercial vegetable farming for rural development. A study of Bharatpur metropolitan city ward no 5 Chitwan district. The objective of the study is to explore the role of social media in commercial vegetable farming for rural development. The use of social media in commercial vegetable farming is increasing rapidly now days. Many agricultural service provider companies are giving better facilities to the farmers. Social media allows users to communicate directly with the customer's service provider's information sharing centers etc. Farmers are using social media to increase their produce at each stage. Rural development means as overall development such as social, economic, political and cultural of rural society. Commercial vegetable farmers have been impacted by social media in all aspects of their lives. The research design adopted in this study is exploratory as well as descriptive types. The universe of the study was commercial vegetable farmers in Ward No. 5 of Bharatpur Municipality. Out of the total number of commercial vegetable farmer households, 20 households have been sampled using the quota sampling and purposive sampling methods. The data has been collected from the Rambagh, Gulabbag, Kailashnagar, and Narayanpur areas. Each area 5 respondents has been selected for the study. The study shows that 5 % respondents were used own land and 95% respondents were used leasehold land for commercial vegetable farming. Similarly 40 % respondents were used YouTube, 35 % respondents were used Facebook and 25% respondents were used Tik Tok for agriculture information. In the study area, social media seem to have a positive effect on commercial vegetable farming. Commercial vegetable farming support to livelihood, capacity building, empowerment, increase in living standard ,saving habit, access to financial institutions, agricultural inputs services and market in the study area. Commercial vegetable farming has been playing a significant role for rural development in this area.*

**Keywords:** Social Media, Livelihood, Positive attitude, Source of information, Rural development

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## Introduction

Communication is a key element of social interaction, learning and capacity, building processes in agricultural and rural innovation systems (Leeuwis & Aarts, 2011; Rivera & Sulaiman, 2009). Social media refers to internet-based digital tools for sharing and discussing information among people. It refers to the user-generated information, opinion, video, audio, and multimedia that is shared and discussed over digital networks. Aspects of social media that make them an important and accessible tool in development communication are their easy access through mobile phones, mass-personal communication, and mass-self communication, a larger set of weak ties to ensure receipt of original ideas, high degree of connectedness, and link ability and content sharing across multiple platforms (Indian Council of food and agriculture,2017). Social media have become the fulcrum of social interaction in both rural and urban areas. It has been observed that ICTs have a significant impact on rural development by mediating the flow of modern technology and also updating the knowledge and skills at the grassroots level. The smart mobile phone has become the choice of people at a mass scale as it is being used in both rural and urban areas. It has become an important medium in the dissemination of information even in the far-flung areas of the nation. Among the various social media, Facebook and WhatsApp have become the prime choice of people across the globe (Lal and Sharma,2020).

Social media has become important tools for the people. The number of people using social media is growing every day. People's use of social media is based on their preferences. Social media is a well-liked tool that makes it easier for people to generate and share content in virtual places, including information, ideas, hobbies, and other forms of expression. People use social media to share, write, and meet new friends on the internet. Social media is a platform that uses the internet to connect individuals from various locations. Because it provides us with so much knowledge that we can gain in our lifetimes, social media is now a necessity for everyone. Social media is used every day by billions of individuals in the modern world. In the 21st century, the use of social media has spread all over the world and has an impact on Nepal as well. In the context of Nepal, social media has become an important tool for people. Social media is typically used for social interaction and decision-making. It is a valuable tool for communicating with others locally and globally, as well as for sharing, creating, and disseminating information. Social media like Facebook, Twitter,

Instagram, TikTok, YouTube, and various platforms are used for social sharing. Globally and in Nepal, social media is now dynamically used for texting, chatting, sharing ideas, views, opinions, and much more. Social media is the greatest human discovery of this generation. Social media is a form of quick access to information. In Nepal, the number of social media users increased by 3.0 million between 2020 and 2021. The number of social media users in Nepal corresponded to 44.2% of the total population in January 2021 ( Dahal, 2021).

Agriculture is the base of livelihood, employment, and economic and social transformation which has also been a major sector of Nepal's economy. In the fiscal year 2011/12, the contribution of the agriculture sector (agriculture, forest, and fisheries) to GDP was 32.7 percent whereas it has been gradually decreasing in recent years and is estimated to remain at 25.8 percent in the fiscal year 2020/21 (GoN,20020/021). The share of the population depending on the agricultural sector is gradually declining due to the modernization and commercialization of agriculture as well as the expansion of services in non-agriculture sectors. According to the Nepal Labor Force Survey of 2008, 73.9 percent of the population was engaged in the agriculture sector, but in 2018 the proportion has decreased to 60.4 percent (GoN,20020/021). The share of food crops has been dominating the production of agricultural crops. Of the total production of agriculture crops during the current fiscal year, the share of food crops is estimated to be 44.9 percent, vegetables 17.2 percent, cash crops 14.7 percent, industrial crops 13.7 percent, and others 9.4 percent. During this period the production of spice crops, vegetables, cash crops, fruits, and honey increased whereas the production of industrial crops, pulse crops, and food crops decreased. Among the agricultural crops, the productivity of vegetable crops is high and the productivity of industrial crops is low (GoN,20020/021).

The Nepalese economy heavily depends on agriculture. The use of cellphones and the internet, as well as technology awareness and computer proficiency, are rising across the country. The spread of various agricultural information is being greatly aided by social media in the agricultural sector. It helps to bridge the geographical distance between the farmers of different places. Commercial vegetable farming, which refers to producing vegetables not only for own consumption but also to sell in the market thereby improve the livelihoods of smallholder farmers, remains the major intervention adopted by national and international governmental and non-governmental organizations (Shrestha & Karki 2017).



The use of social media in commercial vegetable farming is increasing rapidly now days. Many service provider companies are giving better facilities to the farmers. Social media allows users to communicate directly with the customer's service provider's information sharing centers etc. Farmers are using social media to increase their produce at each stage. Social media and information and communication technology start sharing of creation, information and advices for the particular cause. Increasing networking of mobile phones in rural areas increases two way communications. Social media is becoming powerful tool and connects millions of people globally (Sing, 2019). Agriculture has been the main source of livelihood for human beings from the ancient period of time. As in other developing countries, the major source of Nepalese Gross Domestic Product (GDP) is agriculture and the majority of people depend on it for their livelihood. However, the productivity of the crops has remained stagnant and is even declining in some cases despite greater emphasis and efforts placed on the agriculture sector in almost all development plans (NPC 1995).

Rural development is a process, which aims at improving the wellbeing and self-realization of people living outside the urbanized areas through collective process. Rural development means as overall development such as social, economic, political and cultural of rural society so that its people could live a dignified life. The all the interventions aimed at improving productivity, increasing employment and thereby incomes, having food security, access to shelter, education, health and housing is termed as rural development (Anaeto & Anaeto, 2010). Rural areas often suffer from isolation and often face lack of communication with the other part of the world. Information and communication is often termed as power in this 21st century which is vitally important for development of people. However, the rural areas are often detached from all kinds of information and a digital divide is created which discriminate themselves from the outside world. In this context, social media are the ones which link them with the rest of the world and provide a source of information that is happening around the world. Rural people need information about the happenings in and around the society which makes their living better (Anaeto & Anaeto, 2010).

Social media and rural development are linked together and there is a need to make some deliberations on modern-day media with traditional media. Rural development in general is used to define the action taken for improving the standard of the people. Agricultural activities are prominently considered in this direction. Nepal

is having a complex society with different cultures, castes, and languages and there is a disparity between the rural and urban people. The diverse social and infrastructural needs of the rural people must be addressed simultaneously to ensure the prosperity of the nation. Rural residents have been impacted by social media in all aspects of their lives. Social networking systems have repeatedly discovered a way and understood their potential to lead rural development. Farmers in Nepal are enthusiastic to receiving timely and helpful information on the agricultural sector and related sector through various social media platforms. Traditionally, agricultural information exchange has been dominated by industrial media such as newspapers, television and magazines. In recent years, however, technology awareness, computer literacy, and usage of smartphones and the internet are increasing across all demographics in Nepal.

## **Research Methodology**

### **Study Area**

Chitwan District is one of 77 districts in Nepal, and is located in the southwestern part of Bagmati Province with Bharatpur, the fourth largest city in Nepal, as its district headquarters. It covers an area of 2,238.39 km<sup>2</sup> (864.25 sq mi), and in 2011, it had a population of 579,984 (279,087 males and 300,897 females) (BMC,2079 ). Bharatpur is a commercial and service center of central south Nepal and major destination for higher education, health care and transportation in the region. The district takes its name from the Chitwan Valley, one of Nepal's Inner Terai valleys between the Mahabharat and Siwalik ranges, both considered foothills of the Himalayas. Narayangadh is located on the banks of the Narayani River, and is the main town with numerous shopping zones where people come from all over the district and neighboring districts. Chitwan is one of the few remaining undisturbed vestiges of the Terai region, which formerly extended over the foothills of Nepal. Bharatpur is a city in the central-southern part of Nepal. Located in Chitwan District, Bharatpur is the district headquarter of the Chitwan District, as well as a separate Metropolitan authority, and is the fifth largest city of Nepal with the population of 199,867 (CBS, 2011). Bharatpur is one of the fast growing cities of Nepal. It lies on the left bank of Narayani River and serves as a commercial centre of Chitwan district and central region of Nepal. It is located at the centre of Mahendra Highway and Kathmandu - Birganj (North-South) road corridor (BMC,2079).

## **Population and Sample**

Bharatpur Municipality Ward No. 5 lies in the western part of Chitwan district headquarters, Bharatpur. The total population of ward no. 5 is 7856 people, residing in 1683 households (BMC,2079). The research design adopted in this study is exploratory as well as descriptive types. The universe of the study was commercial vegetable farmers in ward no. 5 of Bharatpur Municipality. Out of the total number of commercial vegetable farmer households, 20 households have been sampled using the quota sampling and purposive sampling methods. The data has been collected from the Rambagh, Gulabbag, Kailashnagar, and Narayanpur areas. Each area, five respondents have been selected for the study. The study has drawn data and information from primary and secondary sources. .The primary data was collected by using different methods, such as household survey, field observation, and focus group discussion. The secondary data was collected through books, articles, journals, published and unpublished thesis, research report and ward profile. The collected data has been checked, coded, categorized, organized, and converted into data sheet. Data was analyzed descriptively through percentage, frequencies, and average mean value.

## **Results and Discussion**

### **Demographic Condition of the Respondents**

#### ***Age Structure of the Respondents***

The age structure of a population refers to the proportionate numbers of people in different age categories in a given population for a defined time. It is a natural characteristic of a population in a country or a region. Age composition is the most important variable influence of the productive capacity in the economy. It helps to measure potential population as potential school population, potential voting population and potential manpower. In demographic analysis the age structure of population is the subject of major importance. The total respondents for the study area are 20 households. The age structure of population of sampled vegetable farming households are given below (Table1).

**Table 1***Age Structure of the Respondents*

<b>Age Group</b>	<b>No. of Respondents</b>	<b>Percent</b>
31-40	3	15.00
41-50	5	25.00
51-60	10	50.00
61-70	2	10.00
<b>Total</b>	<b>20</b>	<b>100</b>

*Source: Field Survey, 2022*

Table 1 shows that the age profile of the respondent. 15% respondents are 31-40 age group, 25% respondents are 41-50 age group, 50% respondents are 51-60 age group and 10% respondents are 61-70 age group. It concluded that majority respondents are age group 51-60 years in the study area.

**Educational Status of the Respondents**

Education improves farmers' capacity to gather, decipher, and comprehend information, enabling them to use the knowledge at their disposal to more effectively address production, market, and financial difficulties. In other words, farmers who have had a strong education are better at making decisions and thus better able to manage resources to maximize the potential of farms of all sizes. (Asadullah and Rahman, 2009). The educational status of the respondents have given below (Table 2).

**Table 2***Educational Status of the Respondents*

<b>Level of education</b>	<b>No. of respondents</b>	<b>Percent</b>
Literate	2	10.00
L. Secondary	1	5.00
Secondary	5	25.00
SLC	9	45.00
Intermediate	1	5.00
Bachelor	2	10.00
<b>Total</b>	<b>20</b>	<b>100</b>

*Source: Field Survey, 2022*

Table 2 shows that 10% respondents were literate, 5% respondents have attained lower secondary level education, 25% respondents have attained secondary level education, 45% respondents have attained SLC level education, 5% respondents have attained intermediate level education and 10% respondents have attained bachelor level education. The fact that educated farmers are better equipped to use information already accessible and have easier access to information needed suggests that education reduces information asymmetry in a variety of ways, particularly when it comes to input quality, which is crucial to agricultural output. As a result, farmers with higher levels of education employ a better combination of inputs than do farmers with lower levels of education, which means that the former allocates limited resources more effectively (Reimers and Klasen, 2013). Education is meant to lessen the farmer's perception of uncertainty and his aversion to endogenous risks resulting from his own selection of production equipment (Croppenstedt and Demele, 1997). Therefore, educating a farmer may encourage him to adopt new technology sooner and change his perspective on riskier production technologies. After then, depending on his better capacity to assess the associated risks and opportunities as a result of his education, the farmer optimizes his combination of inputs to nurture crops. The ability of farmers to recognize, understand, and react to new events in the context of risk may be enhanced through education.

### **Land Ownership of the Respondents**

Nepal recognizes two land tenure types: ownership and leasehold. Landowners have rights to exclusivity and use of their land. Landowners can freely transfer their land and pass the land by inheritance. Land is unevenly distributed, and the size and quality of the landholdings has always been highly correlated with economic status. Throughout the country's history, Nepal's elite have held the majority of land and profited from land-based resources. 19.7 percent women in Nepal own land, while 41.4 percent and 36.7 percent of Terai and Hill Dalits respectively are landless. In fact, there are 1.3 million landless or land poor people in Nepal (CBS 2001).

The national survey in 2010/11 reported continuation of a significant imbalance in land distribution. The top 7 percent of the Nepalese households occupy 31 percent of the agricultural land while the bottom 20 percent own only about 3 percent. 45.7 percent of agricultural households own between half a hectare and three hectares of land and occupy 69.3 percent of total cultivable land. 52.7 percent of those households

own half a hectare or less and occupy 18.5 percent of cultivable area. The average size of agricultural landholding is 0.7 hectares in rural areas and 0.5 percent in urban areas. Five percent households do not own any land but work other people's land on a contractual basis (CBS 2011). Land, a predominant physical reality of the Nepali society, is one of the basics that plays a pivotal role in shaping social relations and power structure. Land in Nepal has served as a significant means of meeting both social and economic ends. The land is associated not only with the organization of economic life of people, alleviation of poverty, hunger and management of livelihood of them. It is also a powerful means to settle the social life of the landless or land-poor people with equality and justice in case the distribution of it is fair and equitable. Land ownership of the respondents are given below (Table3).

**Table 3**

*Land Ownership of the Respondents*

<b>Ownership</b>	<b>No. of Respondents</b>	<b>Percent</b>
Own land	1	5.00
Leasehold	19	95.00
<b>Total</b>	<b>20</b>	<b>100</b>

*Source: Field Survey, 2022*

Table 3 shows that 5 % percent respondents were used own land and 95% respondents were used leasehold land for commercial vegetable farming.

**Landholding Size of the Respondents**

Land is the most important factor for Nepalese people. The people who have enough land are considered as a Jamindar and treated as Kisan and given good position in rural society. Traditionally land is the principal form of wealth, the principal source of economic and political power. Ownership of land has meant control over a vital factor of production and therefore a position of prestige, affluence and power. People having no land considered as sukumbasi and treated as labours. So, they feel themselves as poor and standing as low position in society. Landholding size is given below (Table 4).

**Table 4***Landholding Size*

<b>Land Size (Kattha )</b>	<b>No. of Respondents</b>	<b>Percent</b>
< 20	2	10.00
20-30	3	15.00
31-40	5	25.00
41-50	6	30.00
51-60	3	15.00
>60	1	5.00
<b>Total</b>	<b>20</b>	<b>100</b>

*Source: Field Survey, 2022*

Table 4 shows that 40% respondents owned less than 20 Kattha land, 15% respondents owned 20-30 Kattha land, 25% respondents owned 31-40 Kattha land, 30% respondents owned 41-50 Kattha land. Similarly 15% respondents owned 51-60 Kattha of land and only 5% respondents owned above 60 Kattha land for commercial vegetable farming.

**Source of Agricultural Information**

Information has received a wide range of acceptance as an essential resource of this century. It has been described as a stimulating creativity, resulting in new outcomes and processes. All human societies depend very much on information for existence that is information is life. The proper identification and use of information sources are prerequisites for objective decision making. Consequently, the possession of awareness and use of appropriate information guarantee individual and organizational functioning. The major function of information is to increase the knowledge of the user, to reduce his level of uncertainty or reduce the varieties of choices available to the users of information. For information to be effective, it must be accurate, timely and relevant. The information sources for farmers depend on the type of work and services they perform. Information sources are tools or information carriers that meet the information needs of extension workers. Source of agricultural information is given below (Table 5).

**Table 5***Source of Agricultural Information*

<b>Source of Information</b>	<b>No. of respondents</b>	<b>Percent</b>
Social Media	8	40.00
Other Farmers	4	20.00
Agriculture Knowledge Centre	2	10.00
Prime Minister Agriculture Modernization Project	1	5.00
Ward office	1	5.00
Agriculture group	3	15.00
Tole Development institution	1	5.00
<b>Total</b>	<b>20</b>	<b>100</b>

*Source: Field Survey, 2022*

Table 5 shows that 40% respondents were used social media for agriculture information. Social media is the most widely used information source in the study area. This is possibly because social media is the main tool in information dissemination because it reaches larger proportion of the people irrespective of their position; it promotes the level of awareness of the people and it also enables people to be adequately informed. Social media can reach many people much more quickly than other media . Out of 20 respondents 20% of the farmers mentioned other farmers are the sources of agricultural information .Similarly 15 % of the respondents agreed that agricultural groups are the source of information to farmers in the study area. Agricultural groups normally originate from the local people thus, they can speak and delivering a message to people in that area. 5.% of the respondents said Prime Minister Agriculture Modernization Project were the source of information to farmers. 5% of the farmers reported that ward office is the source to disseminate agricultural information and 5% of the respondents stated that Tole Development institution were used in disseminating agricultural information in the study area.

**Tools of Social Media**

The term social media refers to a computer-based technology that facilitates the sharing of ideas, thoughts, and information through virtual networks and communities. Social media is internet-based and gives users quick electronic communication of



content, such as personal information, documents, videos, and photos. Users engage with social media via a computer, tablet, or smartphone via web-based software or applications. While social media is ubiquitous in America and Europe, Asian countries like Indonesia lead the list of social media usage. Respondents were further asked to indicate the social media tools they mostly used to obtain agricultural information. This would give an indication of the particular avenues of social media platforms farmers use in looking for agricultural information. Tools of social media is given below (Table 6).

**Table 6**

*Tools of Social Media*

<b>Social Media Tools</b>	<b>No. of respondents</b>	<b>Percent</b>
You Tube	8	40.00
Facebook	7	35.00
TikTok	5	25.00
<b>Total</b>	<b>20</b>	<b>100</b>

*Source: Field Survey, 2022*

The table 6 shows that 40 % respondents were used YouTube , 35 % respondents were used Facebook and 25% respondents were used Tik Tok for agriculture information.

**Role of Social Media in Commercial Vegetable Farming for Rural Development**

Municipal people are using social media for connecting with friends and family, reading current news, to get information from peers. Thus, connecting that to agriculture and leveraging it to bridge the farmer extension gap can prove to be a boon to the agriculture sector and the farm families. Mass media plays a significant role in dissemination of agricultural technologies. The success of agricultural development programmers largely depends on the nature and extent of use of mass media in mobilization of people for development. Moreover, it can be decisive in helping farmers access the information that they need and transmitting their concerns. Radio, Television has been acclaimed to be the most effective media for diffusing the scientific knowledge to the masses. Role of social media in commercial vegetable farming for rural development is given below (Table7).

**Table 7***Role of Social Media in Commercial Vegetable Farming for Rural Development*

<b>Role of Social Media in Commercial vegetable farming for Rural Development</b>	<b>No. of respondents</b>	<b>Percent</b>
Sources of income and livelihood	6	30.00
Capacity Building and Empowerment	3	15.00
Access to financial Institutions, agricultural inputs services and market	2	10.00
Increase in living standard	5	25.00
Use of risk reduction measures	1	5.00
Development of saving habit	2	10.00
Access to public service	1	5.00
<b>Total</b>	<b>20</b>	<b>100</b>

*Source: Field Survey, 2022*

Table 7 shows that 30% respondents were said commercial vegetable farming is the major source of income and livelihood, 15% respondents were said commercial vegetable farming is increase in capacity building and empowerment, 10% respondents were said commercial vegetable farming is the source of access to financial institutions, agricultural inputs services and market, 25% respondents were said increase in living standard, 5% respondents were said use of risk reduction measures, 10% respondents were said development of saving habit and 5% respondents were said access to public service.

### **Conclusion**

Agriculture is the major sector of Nepalese economy. It provide employment opportunities to around 65% of the total population and contribute about 27% of the GDP (MOAD, 2022). Therefore the development of agriculture sector is key for the development of national economy. The type and degree of social media use in promoting rural development in the research area had a significant impact on the success of agricultural development projects. The successful social media for spreading scientific knowledge to the general public are YouTube, Facebook and TikTok.

Social media is essential for spreading agricultural information on better agricultural practices among farmers with literacy. Social media is the main tool in information dissemination because it reaches a larger proportion of the people irrespective of their position; it promotes the level of awareness of the people and it also enables people to be adequately informed. Social media can reach many people much more quickly than other media. Commercial vegetable farming support to livelihood ,capacity building, empowerment ,increase in living standard ,saving habit, access to financial institutions, agricultural inputs services and market in the study area. Commercial vegetable cultivation has been playing a significant role for rural development in this area. The belief that social media is primarily advantageous as a source of agricultural information and that it is both affordable and easy comes from the fact that farmers have a positive attitude about using it to find agricultural information.

### **Acknowledgements**

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### **References**

- Anaeto, S., & Anaeto M. (2010). *Rural community newspaper: Principles and practice*. Ibadan: Stirling- Horden Publishers.
- Asadullah, M.N. and Rahman, S. (2009), "Farm productivity and efficiency in rural Bangladesh: the role of education revisited", *Applied Economics*, Vol. 41 No. 1, pp. 17-33.
- BMC, (2079). *Municipal Profile*. Bharatpur : Bharatpur Metropolitan City.
- BMC,(2079). *Ward Profile*. Bharatpur : Bharatpur Metropolitan City.
- CBS, (2001). *National Population Census 2001*. Kathmandu: Central Bureau of Statistics.
- CBS, (2011). *Nepal vegetable crops survey 2009-10: Analysis of results*. Kathmandu: Central Bureau of Statistics.

- CBS, (2021). *Preliminary Report of National Population Census 2021*. Kathmandu: Central Bureau of Statistics.
- Croppenstedt, A. and Demeke, M. (1997), “An empirical study of cereal crop production and technical efficiency of private farmers in Ethiopia: a mixed fixed-random coefficient approach”, *Applied Economics*, Vol. 29 No. 9, pp. 1217-1226
- Dahal, A. (2021). *Role of social media in Nepali society*. Kathmandu: Nepal Data Base
- GoN, (2020). *Economic Survey 2019/020* .Kathmandu: Government of Nepal . Ministry of Finance.
- GoN, (2021). *Economic Survey 2020/021* .Kathmandu: Government of Nepal . Ministry of Finance.
- ICAR- Indian Agricultural Research Institute,(2021). *Analysis of YouTube Use Pattern among Farmers for Agro-advisory*.India: ICAR- Indian Agricultural Research Institute.
- Kabani, S. H. (2010). *The zen of social media marketing*. Dallas, TX: BenBella Books.
- Lal, B and Sharma,P.(2020). *Role of social media in agriculture*. India: Early Times.
- Leeuwis, C., & Aarts, N. (2011). Rethinking Communication in Innovation Processes: Creating Space for Change in Complex Systems. *The journal of agricultural education and extension*, 17(1), 21-36.
- NPC,(1995).*Agricultural Perspective Plan* .Kathmandu National Planning Commission .
- Reimers, M. and Klasen, S. (2013). “Revisiting the role of education for agricultural productivity”, *American Journal of Agricultural Economics*, Vol. 95 No. 1, pp. 131-152.
- Rivera, W. M., & Sulaiman, V. R. (2009). Extension: object of reform, engine for innovation. *Outlook on Agriculture*, 38, 267-273.
- Shrestha, A. J., & Karki, A. (2017). Commercial vegetable farming: A new livelihood option for farmers in Udayapur, Nepal. [http:// www.icimod.org/?q=27109](http://www.icimod.org/?q=27109)
- Townsend, J. C. (1953). *Introduction of Experiment Methods. International Student Edition*. New York: Me Graw Hill Book Company, Inc.



## Identifying Patterns in a Documentary-*Convergence: Courage in a Crisis*

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### Abstract

*This paper explores how the technical aspects of filming are involved in making the documentary- *Convergence: Courage in a Crisis* in relation to its overarching theme of global solidarity during the pandemic. For this analysis, my study largely depends on textual analysis of the film with the help of the analytical tools-camera angle, pattern of narrative network and mis-en-scene developed by Yale University so as to justify how the set of patterns employed in this visual discourse appeals to its theme in a particular scene. In addition, haptic visuality is studied with special affect. The time denoted, in the paper, for shots is in descending order in the Netflix from the total running time of one hour and fifty-three minutes. Thematically, the entire project focuses on how individuals can make a difference with their selfless efforts even in the face of a global crisis. Shot in eight different countries with nine stories, the Director, Orlando von Einsiedel in a great narrative maneuver, demonstrates the stirring individual grit and compassion with selfless efforts of the unsung heroes, born in the crises. It can also be analyzed as the message towards the global community with the information dissemination for the preparedness of viral emergence next. What makes this documentary poignant and all inspiring is its intimate telling of the stories of the noble heroes through visual discourse amidst the challenging health emergency and trauma. The study is going to be significant because it not only gives the world view of the sweeping chronicle of the global fight against the pandemic but also prepares every individual for resilience with the hope that humans can triumph over the crisis in unison.*

**Keywords:** *film analysis, pandemic, health emergency, trauma, selfless efforts, global solidarity, hope*

## Setting the Context

This paper follows the fundamental tools of film analysis developed by the Yale University to trace the patterns in the visual discourse genre in relation to its overarching theme of convergence during a crisis. To identify them in the documentary and to analyze, the basics such as auteur, diegesis, editing, flashback/flash forward, focus, genres, mis-en-scene, story plot, cinematography, sound and scene sequence are cherry picked where they are thought to be necessary. In the narrative thread, connecting dots to the events in sequence, the documentary unfolds the Director's auteur, which is eventually reflected upon the prejudices made against the underserved communities. The observational approach of its segments, within a framework of narrative network, its cinematography, the intercuts of cheesy covers of inspirational songs and music, the montage of interconnectedness are well orchestrated, and are proportionally related to the themes of politicization of virus, traumatizing flashbacks of the subjects, rallying cry of the *Black Lives Matter*, scapegoating the underprivileged and the misguided nationalism. At its strongest, the documentary reveals the series of events in sequence within visual patterns and builds a narrative thread about the pandemic which further exacerbates the plight of underprivileged communities.

The film opens with New Year Eve 2020 parties in the different parts of the world with the images of massive crowds indoors and out, urban bustle. The breaking news of Covid cases gives a new turn. Soon the tally of the deaths begins here. The movie unfolds Wenhua Lin, a video blogger in Wuhan who volunteers to drive doctors and nurses to hospitals during lockdown. In Tehran, Iran, Mohammed Reza and Sara Khaki comply with the quarantine orders and express their doubts on the Pope on TV, showing their government's weakness to respond to the crisis. Similarly, in London, Syrian refugee Hassan Akkad happens to work at a hospital, cleaning and sanitizing and becomes popular in his social media stories. In Brazil, Renata Alves is a GPS navigator who introduces for the area's first-ever reliable ambulance service. In Miami, Dr. Armen Henderson not only serves at the University of Miami hospital as a part of his job but also helps the homeless and shattered people during the crisis, with showers, medical assistance and facemasks. Likewise, in Lima, Peru, Dr. Rosa Luz Lopez deals with the case of a 15-year-old boy named Aldair, who's intubated and needs a tracheotomy besides series of problems of the health professionals. In Delhi, India, a couple makes their way to an overpopulated hospital to their obstetrician; not

too far away, funeral pyres burn in the streets. At the University of Oxford, Prof. Sarah Gilbert puts on her unflinching efforts to produce the vaccine. And in Geneva, World Health Organization, Director-General Dr. Tedros Adhanom Ghebreyesus maintains a low-profile tone as he observes rampant politicization of the virus.

Amidst the tragedy, this documentary, having its harsh realities with the strong journalistic bent, finds some hope within the catastrophe. However, the overarching theme of the film is to inspire unity in the face of pandemic. The documentary- *Convergence: Courage in a Crisis*, despite its narrative sprawl, serves to remind us that individuals can make a difference, even in the face of a global crisis.

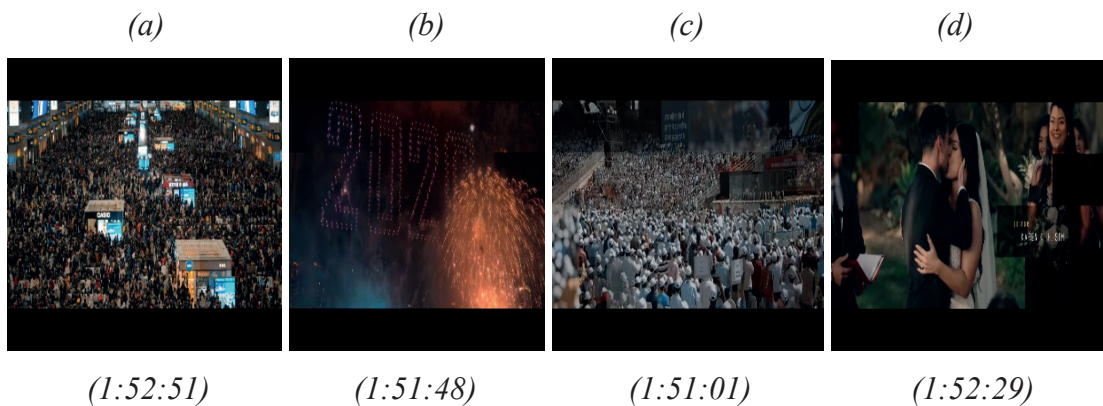
### Images, Shots and Analysis

#### Life before Pandemic

The film establishes its subject of pandemic in the first three minutes (*Convergence: Courage in a Crisis* 1:53:02-1:50:00) visualizing its heroes mostly with close up shots, and then progresses slowly with a narrative thread of each one of their heroic deeds.

#### Figure 1

##### *Normal Life before Pandemic*



**Note:** All the images except the last one in this paper were captured as screenshots from *Einsiedel* (2021) while the documentary was streaming on Netflix. The number codes given below each shot denote the film time in which the events took place. The last image is a picture of a poster of the film downloaded from the Google.

The extreme wide shots in the figure 1(a) and (c), wide shot in figure 1(b) and the medium shot in figure 1(d) all establish a context that how life is going on all around the world. There are prayers, drinks, marriages, graduation celebration, birthday celebration, sports, entertainment etcetera are happening all around the world. Figure (a) and (c) can be analyzed as high angle shot where it shows the subject inferior as to indicate some danger is at yard while figure (b) is a low angle shot which glorifies the New Year, paying deaf ear to the outbreak news of the virus. In figure (d), the subject is captured in a frame to focus on, though the faces are less significant. Viewers can understand that it is a wedding ceremony by their costumes and kisses in the people's presence. Rather than a specific subject, what counts is the surroundings that connect to the main theme. In a couple of minutes, the film involves very many shots to show the world view of different parts of the world. The people are craving for entertainment and watching shows on the auspicious account of the eve-New Year 2020. Very few close-up shots are purposively taken to show the heroes of the documentary with short duration along with the shot change of very few seconds in order to establish the narrative network (*Convergence* 1:50:52-1:50:30). The slow non-diegetic song reflects the colorful thoughts and the rejuvenation of the new year all over the world including people from diverse backgrounds. The cheesy intercuts of the songs (1:36, 55:40 and 5:56) at times refer to the moods and emotions of the people along with crisis. The leitmotif employed in the beginning and at the end, on the image of the globe through the melodious song of voiceovers, shows the order, disorder and again come back of the order in the world.

### **Order, Disorder and Order Again**

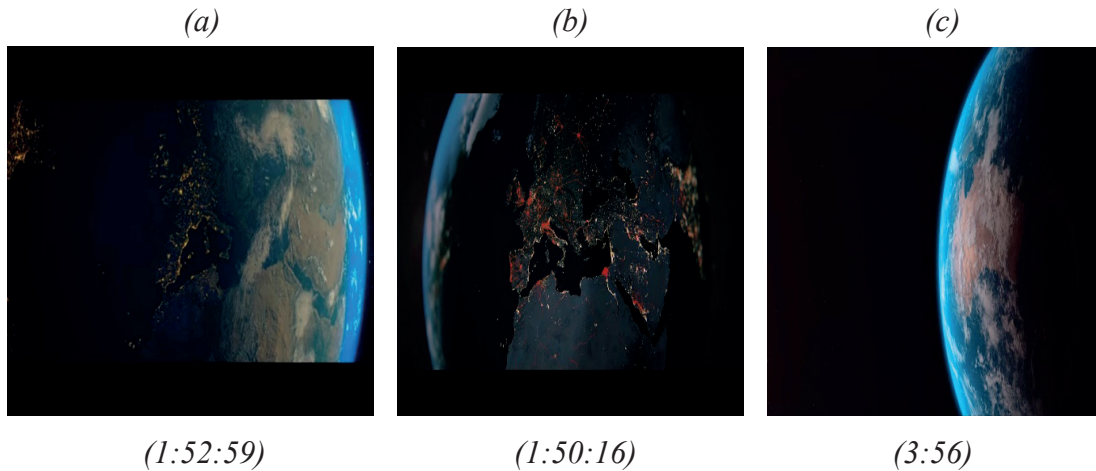
The extreme close-up shots in Figure 2 done on the globe simply indicates something universal is going to be the subject matter, yet in its underlying pattern suggests how the world grows progressively harder and eventually gets relieved with a hope of life in new normal.

By the time of the second shot on the globe (1:50:16), the world has already begun to feel sick and the deteriorating condition is at stake, as the movement of shadow hovers over it. The red spots, unlike the happy yellow ones in Figure 2 (a), indicate the danger zones of the viral disease while the gray color on the map shows the desolation and dismay on the planet. It suggests the impending danger is at yard. However, in the ending of three minutes, we can see the globe, back into its new



## Figure 2

*Order, Disorder and Order Again*



normal form, devoid of red and gray color, and away from the black space to its left. This technical composition speaks how the world is getting healed after going through the pandemic.

Interestingly, the non-diegetic song is purposely composed that is overlaid from one point of globe, filled with joy and happiness in the new year celebration, to another point where the world becomes sick. The former point deals with the best of the times but the latter, with the worsening condition. The bright key light from the right is lowered and low-key lighting of the fill light is kept intact in Figure (2a) while the lens is administered straight to the globe in the second part only to show the red spots of impending danger. All the same, in the last image, the light is given on the image in between the dark spaces on either side. It suggests a hope to chase the minimal darkness created by the pandemic on the right.

### **Pandemic at Ground Zero**

Although the audience experience the number of shifts in the documentary, for it is shot at ten places, the narrative thread chases each unsung hero and brings to the fore by their stories. This stages the unity and order of the visual discourse technically. The first and ever breaking news comes from Wuhan, China which was the origin of Covid 19.

### Figure 3

*Wuhan, China*

(a)



(1:49:48)

(b)



(1:49:08)

To illustrate, the wide shot in Figure (3a) taken from the drone of the empty Wuhan, China in January gives an inkling to the critical audience that the curfews have already been clamped, the military cordons have been in full force and safety measures of the public health have been unveiled and the Draconian laws, been strictly implemented. Soon the subject of the documentary becomes the sprawling and overwhelming segments of observation which traces the arch of the coronavirus throughout 2020 and is absolutely grueling to watch. Life is filled with terror and horror. The fear of unknown rules over and the world and is left with full of trepidation. The camera then tracks the Chinese vlogger, Wenhua Lin, with the medium shot. Here the subject is speaking and it is important for the viewers what he is saying. The speaker volunteers to ferrying the doctors and nurses to hospitals after officials shut down the public transportations from the ground zero in the early 2020.

### **Coronavirus Outbreak and Trauma**

The official news of Covid 19 outbreak by the WHO (World Health Organization) officials gives a shock to the minds of the huge population. It also confuses people and politicians get carried away with their own narratives and multiple interpretations of the disease. However, it sacks everything with trauma.

Amidst the challenging health crisis, the WHO officials are captured in the Dutch shot where the subject is established in a certain frame of cinematography of slightly tilted mode of either side. In both the pictures we can notice some sort of stress or anxiety in the psychology of the characters. They do not make any eye contact with

## Figure 4

### *Breaking News by WHO*

(a)



(1:51:13)

(b)



(1:50:23)

their audience in the shot because they are sad and have shied away with the efforts that they are all in vain. The overarching point of the documentary is to call everyone to unite under the banner of solidarity. It is not working. The Executive Director of WHO alarms the world to be prepared whatever the context comes next. Followed by the cut away shots again, Dr. Tedros Adhanom Ghebreyesus, the Director General of WHO, announces that the virus is characterized as global pandemic. Thomas Hubl (2020) asserts:

What is perhaps less well understood is how unhealed collective trauma may place similar burdens on the health of human cultures and societies, even placing our planetary home at risk. The symptoms of collective trauma appear to reveal themselves in the condition of collective bodies of all kinds—our communities, schools, organizations, institutions, governments, and environments—revealing where we are injured, fractured, or imbalanced. (p.13)

When the trauma becomes a part of our global community and the planet becomes sick, it has its sickening effects on our cultures and societies as well as collective bodies so as to show that the humans are helpless, wounded and broken down.

### **Inequalities**

After setting up the various story threads during its first half-hour, the film exhibits the inequalities, as the cases increase, all over the world especially in the

underserved communities. Slowly, it grows to be cultural and eventually becomes bio-political. For an instance, there is surveillance footage of Dr. Armen Henderson, a Black physician who is allegedly and racially profiled, and seen handcuffed in front of his house by a police officer.

## Figure 5

### *Escalation of Discrimination*



(21:10)

It is a deliberate wide-shot because it is eyesore for the viewers to watch what really has happened from the close-up shot. The voiceover reads that the cop has spat on his face and pointed his finger so many times with roughs. The objects are foregrounded only to show the subject in a mirage. The cop does not have masks on his face. His acts are abrupt and forceful. The scene exceeds to the extent that his wife and the daughter duck down at the sight. In fact, the doctor was supposed to go to serve people with hospital props-gowns and bundle of masks. The car belongs to the doctor, readied to move to hospital. This is the man who is committed to serving the people who are homeless populace living in encampments beneath an overpass, that the government repeatedly destroyed their camps. He is prepared for the worst in any situation and is dedicated to serving people both in hospitals and outside. Hence, it is a wrong turn of the pandemic escalating with cultural, racial and bio-political issues.

## Black Lives Matter

The film goes off at a tangent when the murder of the George Floyd by a police officer inspires social justice marches worldwide. “Black Lives Matter! I can’t breathe!” become the global slogans.

### Figure 6

#### *Protests after Murder*



The wide shots are taken here in order to intensify the subject of mass protest. The picture on the left seems to be in front of the building of the authority while the image on the right shows the mass protest against the White. People are holding placards for justice almost everywhere and soon it gains the international attention. The demonstrations spread across 140 American cities. Soon it turns out to be an international protest against the condemned act.

When there is crisis, culturally backward groups have to undergo traumatic experience and the higher group discriminates the weak in terms of color, race, gender, ethnicity and so on. Cultural trauma comes from the psychological construct of an affect and this very emotion is saved by our own rooted identity. Trauma becomes mediated culturally and gets political to serve the purpose of the large group identity. “If trauma is to serve as a political commentary on violence, it must move beyond personal experience” (Kilby, xii). Trauma goes beyond personal and soon it becomes cultural and bio-political- the White and the Black matter during crisis. *Shared trauma*, defined previously, is the “affective, behavioral, cognitive, spiritual, and multimodal responses that mental health professionals experience as a result of primary and

secondary exposure to the same collective trauma as their clients” (Tosone 2012, p. 625). This can impact on multiple levels—intra-psychic, interpersonal, community, and societal level. Eyerman (2001, p. 4) believes, “...cultural trauma refers to a dramatic loss of identity and meaning, a tear in the social fabric, affecting a group of people that has achieved some degree of cohesion. Therefore, every culture cannot resist anything that comes against the culture only to safeguard their identity in the society.

### Expectations and Frustrations

The crisis not only escalates with the cultural as well as racial issues but also gets intensified with peaceful demonstrations when even the basic needs are not addressed by the government in Brazil. Renata leads the protest here.

**Figure 7**

*Protest in Brazil*

(a)



(27:10)

(b)



(27: 02)

The military cordons are effective while Renata, and people demonstrate in Brazil for the basic needs. In the Paraisopolis favela in Sao Paulo, Brazil, Renata Alves is a GPS navigator for the area’s first-ever reliable ambulance service, the product of private donations; usually an event coordinator. She knows the favela’s labyrinthine tangle of streets and alleyways so well that she decided to help people during the pandemic. However, the government has condemned the people to die and has not even fulfilled their basic needs and safety measures. People face the problem of sanitation,

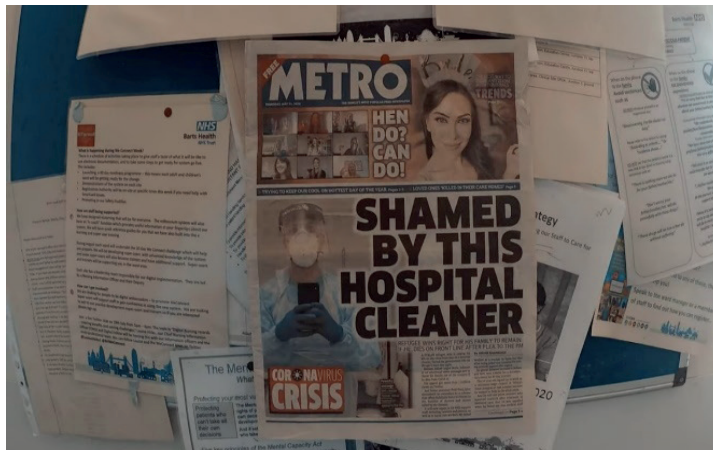
hygiene and drinking water that government is unable to solve. Renata is in hospital dress. She has worn a mask; gloves and she is perhaps taking a picture of the military force. It seems like Renata and her mass are marching towards the district authority. In the frame of medium shot, Renata is highlighted because she is the main activist. In Figure 7(b), we can see the people from different occupations by their lanyards, assembled to protest against the authority. It is a peaceful demonstration, captured in a wide shot.

### **Migrants and the British**

Hassan Akkad, a Syrian refugee in London made the UK government realize that the migrants who work at hospitals at low profile job equally deserve the bereavement scheme through his social site. Finally, the government is obligated to reconsider the scheme for all.

### **Figure 8**

*The Triumph of Hassan Akkad*



(23:09)

The tight shot on the Metro magazine reads the response-SHAMED BY THIS HOSPITAL CLEANER- of Hassan's appeal to the government to reconsider the bereavement scheme including migrants like him. His plea resonates all over the world and the UK government is obligated to change the decision. Hassan vehemently believes that pink collar workers like them are the savoir of the health professionals

and lives of the patient in the hospital because they sterilize everything cleaning and sanitizing at hospital. Although the response is featured in the cover page of the magazine in large case letters, yet Hassan's identity is predicated by passivation. His image is not given enough light in it. The news on the magazine shows the Corona crisis and its global news in cross cutting shots of the image on the top left. The notice board displays several papers with hospital strategies and safety measures in the crisis of 2020 in London.

### The Climax

The climax of the documentary is when the Professor Gilbert's team is successful in manufacturing the vaccine at University of Oxford.

### Figure 9

*Interview of Professor Gilbert*

(a)



(20:02)

(b)



(20:12)

In the over-the-shoulder shot Professor Gilbert is being interviewed and scene is shot from the shoulder side of the interviewer. In this case, the subject, Gilbert is foregrounded while the interviewer is not, for she is less important. This shot is taken sometimes with 30° angle to qualify the listener to some extent towards the main subject. The door print tells us that setting is at Oxford University. The fill lights at the low-key level are oriented to the subject from the left to the right while the bright



keys on the right are levelled up to the fill lights. The focus is on Professor Gilbert because she is breaking the news of the manufactured vaccine. The props of the media in Figure 9 (b) and the setting inform us about the important news.

### The Affect

The visceral transformation of affect to the viewers, without narrativization, projected in the perfection of a particular scene by the techniques of cinematography makes the Director, an auteur in filming the documentary. Emotions matter a lot to unfold the global solidarity during the crisis.

### Figure 10

#### *Haptic Visuality*

(a)



(18:28)

(b)



(4:06)

Haptic visuality (Silwal, 2022, p. 1) is “a terminology in a visual text for conveying a sense of visceral touching evoked by the visual image—at the center of which lies the use of gesture. In haptic visuality, the viewer is invited to contemplate the image rather than say or pulled into the images on the screen only to receive the sensations that the images produce. Thus, it evokes human emotions with close engagement of surface details and texture. According to Michael Hübner (2018, p. 199), the visual object and its representation largely depends on the used textual context and the photography and together it can be communicated visually in a combination of techniques. The final close up shot taken on Director General of the WHO, Dr Tedros can be taken as a superb example. In this particular shot, Dr. Tedros claims

the opportunities are born in the crises. He delivers this shortly after the vaccine was successfully tested by the Oxford University team. The moment his tears roll down Figure 10(a) is captured with haptic visual affect to see the silver-line of hope amidst the anarchy created by the pandemic. He is purposively chosen in the documentary not only that he is Director General in the WHO but also that it is a typeface that fits-meaning that his non-verbal gestures of facial expression express the seriousness of the situation. The banner of the WHO in blue, his formal dress and attire say that it is the official setting. He seems to have been relieved as a leader.

The departure from the dark world to the light again evokes the emotions which viscerally transforms the viewers to endure the happiness of the characters via cross cutting technique of editing. The moment the smiles are shown around the globe, it is captured by the viewers and get moved without words. They receive sensations of the positive vibes of the solidarity. The smiles are the symbol of triumph over the crises that the whole human flesh and blood endured. The close-up shots of diverse people taken at different places and different time are edited, and framed in one only to express the unison of the people. Interestingly, everyone is extremely happy except for Dr. Tedros who is hanging on the phone, may be on some serious issue. It suggests his worries are not yet over.

Watching the documentary as such raises the theoretical questions that stretch common responses. Corrigan and White (2018) asserts:

These questions include psychological ones about perception, comprehension, and identification; philosophical ones about the nature of the image and the viewer's understanding of it; and social and historical ones about what meanings and messages are reinforced in and excluded by a culture's films. Far from destroying our pleasure in the movies, studying them increases the ways we can enjoy them thoughtfully (p.8).

Documentary film shapes and interprets factual material with a view to educating and entertaining viewers, be it general or specific, digging out their psychological patterns of their understandings in terms of their identity, politics, socio-historical aspects of life. It also depicts the underlying patterns and reactions of human behavior, especially when crisis hovers around, of one over the other with their intended meanings and interpretations.

## Mis-en-scene

Mis-en-scene refers to the reflection of catch-all for everything placed on the stage or in front of the camera that makes a composite whole of a scene, including people.

### Figure 11

*Mis-en-scene*



(8: 04)

This full body shot allows the audience to relieve themselves towards the end seeing Aldair discharged from the hospital after the intensive care of Dr. Lopez and her team in Peru. Due to Covid-19, the boy nearly took his last breath. This is the very emotional scene between father and son when the father says that the boy's mother has prayed for his wellness and things would get better. He gently kisses on him. However, the boy's response is numb because he cannot speak due to the pipe inserted through the throat for food. His tears speak everything in this sequence. This is a moment when haptic visual affect can be felt by the audience. Cinematically, the ostensible objects are all put in a single frame to bring out the effects.

The mis-en-scene in the above shot contributes to visual discourse by placing everything on the stage for its perfect meaning making process. The setting is at the hospital site. The blocs are visible on both sides. The arrow on the wall shows the way to go in. The zebra cross in the back yard tells us that it remains busy with vehicles normally. The yellow lines mark the parking lanes. There are props such as wheel chair, blanket, PPE dress, dustbins, cannula on the hand, pipe in the throat, masks, gloves and hospital blocs. The boy is in his wheel chair and is being assisted by the medical team. It shows their loving and caring behavior. Perhaps Dr. Lupez is standing to

watch the intimate scene between the father and the son. The father bends down to son to amplify his emotions. A perfect emotional action is captured naturally. The subject is placed from the right to left in the full body shot so that the father can be visible to the lens. All the items captured in the camera are real and no rear projection shot. The bright light on the right is oriented to the characters at the center while left fill light is equalized to the height of the high key lighting. The music is slow and soothing for the emotional expressions. The white color is so relaxing, the yellow stands for happiness and harmony, and the sky-blue color of PPE, for peace.

### Poster Analysis

The poster of the documentary-*Convergence: Courage in a Crisis* unfolds many folds of heroic deeds of the unsung heroes amidst the pandemic. In the poster, they are fore-grounded against the backdrop of the globe which is mostly blue.

**Figure 12**

*The Film Poster*



Unlike the beginning, the globe is in wider blue, meaning that their efforts have triumphed over the miseries and world is beginning to feel well. The silver lining over the blue indicates that the danger is slowly fading away. Because of the disproportionate impact that the pandemic has left on the world, the world is seemingly bulged with crises. The image represents the world view. The erratic edges, yet geometrical cubic shapes stand for the thorns of life that the world has gone through. Hassan, Renata and Henderson at the center stand for they are the change makers of the world who have saved millions of lives. Hassan's outspokenness brings good benefits of migrants who have been excluded from bereavement scheme. Similarly, Henderson is honored and recognized at the end for his selfless deed in the hospital and outside. Renata is a sheer volunteer and therefore she is placed at the center of the image by her grounded look for volunteering further. On top of the image runs the title of the film which is a tell-tale sign of the hope. Over all, the poster qualifies the title with its display quotation- "While COVID-19 exacerbates vulnerabilities across the world, unsung heroes in all levels of society help the tide turn toward a brighter future" is justified in the true sense." The heroes born in the crises transform the world into its brighter side indeed.

Critically viewing, the British documentary- *Convergence: Courage in a Crisis* is full of archived data of the worldwide crisis in 2020 which has beautifully been captured by the craftsmanship- metteurs-en-scene- of the Director, Orlando von Einsiedel. The mis-en-scene, cinematography, montage and the concept of hyperlink narratives for the storyline make it a distinct presentation for viewers, glorifying the common people as heroes. The repetition of /k/ sound in the keywords of the title produces some sort of alliterative music and sets the positive tone of the documentary. Nevertheless, the film does not present any role of the Centre for Disease Control and Prevention (CDC), while it plays a pivotal role, nor does it talk about the cause and origin of the disease unlike in the movies- *Pandemic (2007)* and *Contagion (2011)*; directed by Armand Mastroianni and Steven Soderbergh respectively. Both the films allow us to consider how ecological imbalance becomes root cause of the spread of the disease and the CDC roles are on the prime focus of the lens in tracing the virus, diagnosing and in giving advice to the government so as to make policies and strategies during the emergency. The positive side of this film is the happy ending after fighting the ordeal by the people around the world in unison. There is no naming and blaming about the origin of the disease to any geography. Donald Trump is trumped for the light

hearted statement he made. He wanted to play politics by post truth without having full knowledge on the pandemic; consequently, more people died in America than any other countries. It can be analyzed as political failure of Trump administration as well. Finally, the birth of baby pronounced as a ray of hope, by the Indian mother, Nupur, in end of the film is everlasting message for all humans to combat the crisis during the emergency.

### **Conclusion**

*Convergence: Courage in a Crisis* has its pattern in filming a documentary. Very like the print, the technical aspects are well staged and made coherent to develop its overall plot. The narrative network is the dominant aspect to connect the dots in a logical way. The shots are predominantly close-up and extreme close-up ones to convey that pandemic is a global phenomenon. However, wide-shots are also emphasized in order to establish the wider context of the globe. The dark shadow of the pandemic that nearly swallows the globe initially turns out to be dispersed by the strength of the global solidarity. The most striking thing in the documentary is the craft of the Director Orlando von Einsiedel to make use of technical craft-matters-en-scene. Every society has heroes but they are sung only in extraordinary times like the global emergence. It has a global message that pandemic is only a wakeup call and we have to be prepared for convergence to combat the viral emergence in the near future. Building resilience to combat emergencies is more of our collective actions that serve the helpless and needy of the global community. Only then can we triumph over the miseries of the pandemic.

### **Declaration**

The author has taken the liberty to fairly utilize the screenshots from the documentary- *Convergence: Courage in a Crisis* in this paper for the scholarly purpose of critical analysis only. To suit this purpose, the researcher screenshot the images from the Netflix live streaming of the film.

## References

- Corrigan, T. and White, P. (2018). *The film experience: An introduction* (5<sup>th</sup> Ed.). Bedford/St. Martin's. <https://works.swarthmore.edu/fac-film-media/16>.
- Einsiedel, O.v. (2021). *Convergence: Courage in a crisis*. Netflix.
- Eyerman, R. (2001). *Cultural trauma: Slavery and the formation of African American identity*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511488788.001>
- Hubl, T. (2020). *Healing collective trauma: A process for integrating our intergenerational and cultural wounds*. Sounds True.
- Hübner, M. (2018). Making things visible: Visual strategies for the representation of objects in collections. *Visible Language*, 51/52, (3-1), 174-201.
- Kilby, J. (2007). *Violence and cultural politics of trauma*. Edinburg University Press.
- Mastroianni, A. (2007). *Pandemic*. Larry Levinsons Productions.
- Silwal, D. (2022). The power of the unsaid in graphic narratives: Decoding Joe Sacco. *SCHOLARS: Journal of Arts & Humanities*, 4, (2), 1-17. <https://doi:10.3126/sjah.v4i2.47418>.
- Steven, S. (2011). *Contagion*. Warner Bros.
- Tosone, C. (2012). Shared trauma. In C. R. Figley (Ed.), *Encyclopedia of trauma: An interdisciplinary Guide*. (pp. 625–628). Sage.
- Yale University. (2023). Film analysis. <https://filmanalysis.yale.edu/basic-terms/>



## Distribution Nature of Trade Volume and Number of Trades at NEPSE Floor

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### Abstract

*Investors are concerned with market fluctuation. At NEPSE, market fluctuation is linked to the trade volume and number of shares traded during a specific day. A change in the benchmark index, NEPSE, in the Nepalese stock market depends on the market capitalization. Hence, to estimate the market pattern, a better understanding of the distribution nature of the trade volume and number of trades is beneficial to Nepalese investors. This ultimately helps an investor understand the market mechanism. The paper has followed basic descriptive statistics and a graphical presentation of the PP Plot, QQ Plot, and PDF Plot to test the normality and distribution nature of the NEPSE yearly trade volume and number of trades. Finally, the Shapiro-Wilk test, Jarque-Bera test, Kolmogorov-Smirnov test, and Anderson-Darling (A2) test are applied to test the goodness of fit for the observed and the respective NEPSE yearly trade volume and number of trades. The paper found that the NEPSE's yearly trade volume and number of trades from the year of its establishment to the fiscal year 2021–22 have a leptokurtic distribution. Similarly, the paper shows the distribution of trade volume and the number of trades toward non-normality. The probability distribution function reflects the log-normal (3P) distribution, also known as Galton's distribution, for both sets of data. The distribution of the NEPSE's yearly trade volume and number of trades is best fitted by Galton's distribution. The fitting of this specific distribution reflects a compounding effect on the transactions taped during the last two decades and more. Hence, an investor who enters in a NEPSE floor with a small numbers of scrips would multiply the numbers in a period of times.*

**Keywords:** NEPSE, trade volume, number of trades, distribution nature.

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## Introduction

Apart from stock price and index fluctuations, one can also measure market activities by looking at the trading volume viz; the number of shares traded and the number of trades. To obtain the corresponding distributions, one can normalize these variables by subtracting the mean and dividing by their standard deviation. As is evident, the distribution is remarkably similar for the different stocks, and the nature of the decay is significantly different from the power law (Sinha et al. 2011).

To get better information about the stock market; the market depth should be aware with the investor. It mainly involves information related to the number of stocks traded for a respective listed company and trade volume that are highly relevant in determining the market price of the listed securities. Therefore, microscopic interpretation and mechanism of price fluctuation are feasible with the help of information related to the trade volumes and number of trades conducted on the stock market floor.

There has been a long debate about whether the distribution nature of trading volume and the number of trades in the stock market have a universal characteristic. A study on the Indian stock market, it was found that the distribution for the trade volume and number of trades were not better fitted on power law but moved better towards the Gaussian distribution or either to Lévy stable, which ultimately rejected the universality of the volume distribution (Vijayaraghavan & Sinha, 2011).

Weber and Rosenow (2006) argued that a large trade volume alone is not a sufficient explanation for the fluctuation of stock prices. Mpofo (2012) revealed the stock returns at Johannesburg Stock Exchange were influenced by the change in the trade volume of stocks. In context to Sri Lanka, Pathirawasam (2011) disclosed that the stock returns are positively related to the contemporary changes in trading volumes. However, in the context of the Nepalese stock market, the benchmark index, NEPSE, is calculated based on market capitalization. The trade volume and number of trades that take place on the NEPSE floor closely determine the movement of the NEPSE Index. Shrestha (2016) found positive contemporaneous relationship between the trade volume of stocks and the return from NEPSE, further stating that trading volume have important information relate to the fluctuation in at the market. Similarly, contradictory to earlier result, Adhikari (2020) found no causal relationship between the trading volume and the return from NEPSE. Hence, the trade volume fluctuation

directly or indirectly influences the stock price fluctuation. Therefore, the information on trading size or volume and number of trades at the NEPSE floor reflects the dynamic of the price formation. Against this backdrop, the paper tries to find the distribution nature of the trade volume and number of shares traded at the Nepalese stock market.

### **Literature Review**

Ajinkya and Jain (1989) studied an empirical distribution for the daily trading volume of the NYSE and found that the natural log transformation of the measured volume was approximately normally distributed.

Gopikrishnan et al. (2000) revealed that the determination of the distribution nature of the return from US stock markets could be done by going through the distribution nature of the number of shares traded and transaction data.

Tuncay and Stauffer (2006) found the daily trade volume of the NYSE was closer to power-law distribution, which was not matched with the return from the market.

Qiu et al. (2009) revealed that the trading volume in the Chinese stock market was well-fitted by a stretched exponential function, also known as complementary cumulative Weibull distribution. Similarly, Mu et al. (2009) discovered that the tail exponent of trading size and trade volume at the Shenzhen Stock Exchange best fit a power-law distribution, while the data from a small number of trades fit a q-Gama distribution.

Sun et al. (2010) discovered power-law tails for the total number of transactions and trading volume of each trader for the Chinese manipulated trading in the stock market published by the China Securities Regulatory Commission over a period. Kaizoji (2013), while studying the trading volume of the Tokyo Stock Exchange, found a better power law.

Halder and Das (2016) studied the distribution nature of trade volume for the developed nations and the developing nation's stock markets, concluding that the generalized Pareto distribution is the best fit for both types of stock markets. Similarly, Ahmad (2016) fitted the bivariate normal distribution for the monthly trade volume of the Muscat Securities Market.

In the context of Nepal, K.C. (2018) applied the support vector regression and fitted a general kernel for the daily trade volume at NEPSE, which helped with trend pattern tracking for portfolio optimization. Ran et al. (2019) investigated minute-by-

minute trade data from the Shanghai Stock Exchange, concluding that trade volume patterns follow the monetary policy cycle. Nirei et al. (2020) went through the daily trade volume of the Nikkei and found that the trade volume distribution was influenced by asymmetric information and the herd behavior of investors.

### **Research Methodology**

To determine the distribution nature of the yearly trade volume and number of trades from NEPSE, the paper used descriptive statistics and the probability distribution function. Hence, the paper followed the descriptive research design. This paper used the Shapiro-Wilk test and Jarque-Bera test to test the normality of the trade volume and number of trades. In addition to these tests, a graphical presentation of the PP Plot, QQ Plot, and theoretical probability distribution (PDF) plotting are applied in the paper. The paper has also adopted the Kolmogorov-Smirnov test and the Anderson-Darling (A2) test to test the goodness of fit for the observed and the respective NEPSE yearly trade volume and number of trades.

The paper has used the yearly trade volume and number of trades' data from the establishment year (1994) of the Nepalese stock market, NEPSE, up to the fiscal year of 2021–22. Hence, the yearly trade volume and number of trades' data for the period of 29 years is used in the paper. Hence, the required data has been collected from the official website of the only secondary market of Nepal, Nepal Stock Exchange Limited.

### **Results and Discussions**

The NEPSE yearly trade volume distribution is positively skewed (+3.57). The kurtosis (+12.38) shows leptokurtic distributions that are more peaked than the normal distribution.

Similarly, the NEPSE yearly number of trades distribution is positively skewed (+1.37). The kurtosis (+0.30) shows leptokurtic, which shows the distribution as more peaked than the normal distribution.

As the NEPSE yearly trade volume and the number of trades have a positive skewness, the curve for their frequency distribution has a longer tail on the right. The mean and median also reflect a similar nature, i.e., the mean value is greater than the median value.

**Table 1***Descriptive Statistics for NEPSE Yearly Trade Volume and Number of Trades*

<b>Statistics</b>	<b>Trade Volume (v)</b>	<b>Number of Trades (n)</b>
Mean	290049724.1	471797276.0
Median	26231000	150800000
Standard Deviation	758566484.1	628879946.4
Variance	575423110000	14620188000000
Skewness	+3.57	+1.37
Kurtosis	+12.38	+0.30
Range	3403520000	1839416002
No. of observation	29	29

**Normality Test for NEPSE Yearly Trade Volume and Number of Trades**

The statistical results and graphical presentation of the NEPSE yearly trade volume and number of trades reflect the distribution nature and normality test for the respective data.

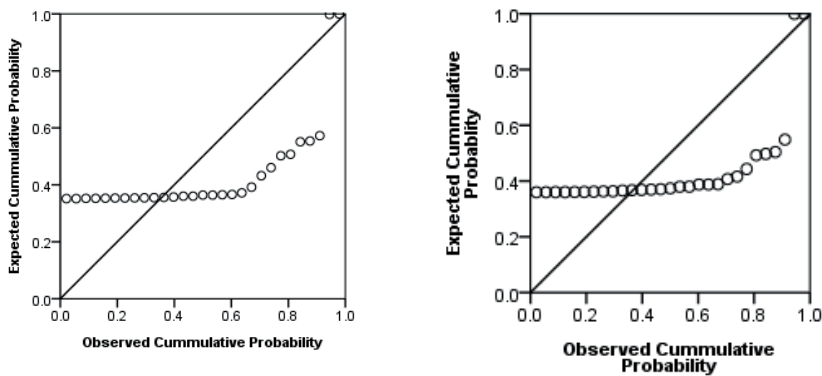
**Table 2***Normality Statistics for NEPSE Yearly Trade Volume and Number of Trades*

<b>Statistics</b>	<b>Trade Volume (v)</b>	<b>Number of Trades (n)</b>
Shapiro-Wilk	0.4195 (0.000)	0.7179 (0.000)
Jarque-Bera	179.3883 (0.000)	8.1208 (0.0172)

The p-value is less than 0.01, hence; as per the Sharpio-Wilk test, the distribution for trade volume and number of trades are non-normality. Similarly, the Jarque-Bera Statistics are not closer to zero with a significant value, and the trade volume and number of trades distribution are non-normality.

**Figure 1**

*PP Plot for Trade Volume and Number of Trades*

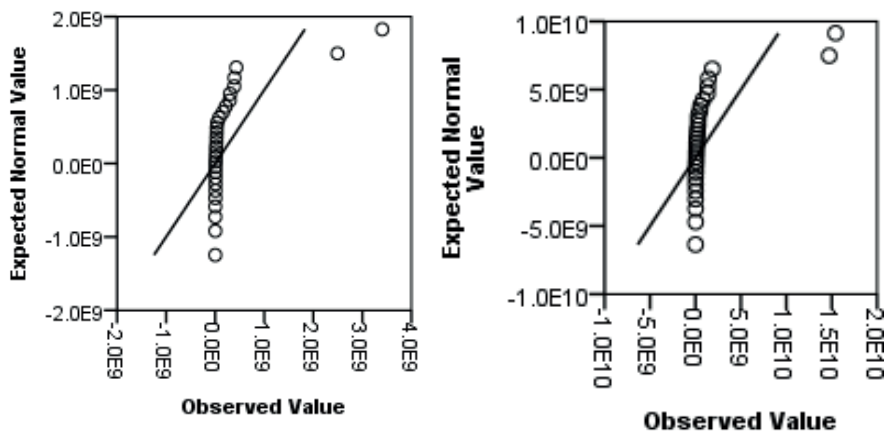


The PP Plot for both the NEPSE yearly trade volume and a number of trades is not in a perfect 'S-shaped' lying around the 45-degree straight line. The Plot is scattered away from the straight line; hence, the NEPSE yearly trade volume and number of trades followed non-normality.

As seen in Figure 1, the QQ Plot for both the NEPSE yearly trade volume and number of trades are scattered away from the 45-degree straight line. Hence, both the yearly trade volume and the number of trades are far from normal distribution.

**Figure 2**

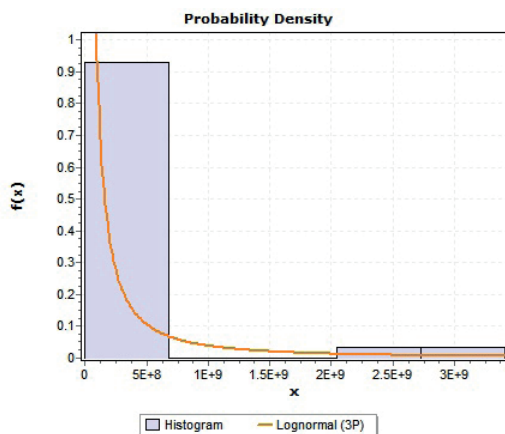
*QQ Plot for Trade Volume and Number of Trades*



As seen in Figure 2, the QQ Plot for both the NEPSE yearly trade volume and number of trades are scattered away from the 45-degree straight line. Hence, both the yearly trade volume and the number of trades are far from normal distribution.

**Figure 3**

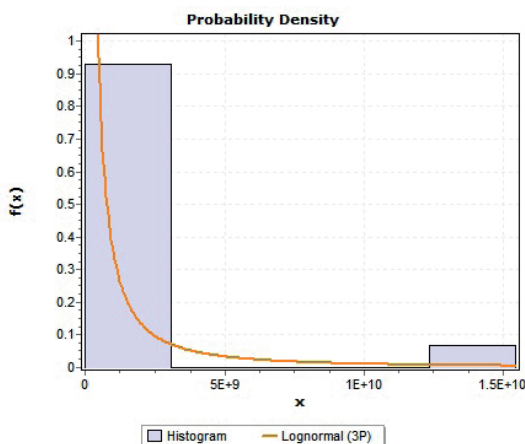
*Probability Distribution Function (PDF) Plot for Trade Volume*



The distribution for the NEPSE yearly trade volume is best-fitted on log-normal (3P), which shows that the logarithm of the trade volume will turn into the normal distribution and is a general skew distribution.

**Figure 4**

*Probability Distribution Function (PDF) Plot for Numbers of Trades*



As of yearly NEPSE trade volume, the plotted probability distribution function (PDF) plot clearly picture out log-normal (3P) distribution for the NEPSE yearly number of trades. The three parameters log-normal distribution is a general skew distribution.

**Table 3**

*Best-Fitted Distribution for NEPSE Yearly Trade Volume and Number of Trades*

Description	Distribution	K-S Statistics	A2 Statistics	Parameters
Trade Volume	Log-normal (3P)	0.08617	0.32372	=2.647, =16.973, =9.7856E+5
Number of Trades	Log-normal (3P)	0.06814	0.20055	=2.4458, =18.659, =9.1796E+6

The best-fit distribution for the NEPSE yearly trade volume and number of trades is log-normal (3P), also known as Galton’s distribution (1889). The small change in the parameters of the log-normal distribution changes the nature of the distribution to normality. However, the study in the stock trade volumes in the developed nations found to best fitted on power-law. Tuncay and Stauffer (2006) saw the trade volume of US stock market fitted on power-law, as well as Sun et al. (2020) for Chinese stock market or Kaizoji (2013) for Japanese stock market, the trade volume was seen closer to power-law distribution. Halder and Das (2016) fitted on generalized Pareto distribution, while Ahmad (2016) fitted on bivariate normal distribution for the trade volumes of developed nations as well as for the developing nations and for the Muscat Securities market respectively. Nevertheless, the log-normal distribution shows the NEPSE yearly trade volume and number of trades are positively skewed and will have a compound effect on the distribution over time . Therefore, a peculiar nature of distribution for the yearly trade volume and number of trades are seen for the Nepalese stock market, NEPSE.

### Conclusion and Implication

A piece of information regarding the trade volumes and number of trades on the stock market floor is valuable to investors. Investors attach great importance to the

return information from the stock market; the information regarding the trade volume and number of trades helps to give an insight into the pattern of stock market movement and fluctuation.

The distribution nature of the yearly trade volumes and number of trades for the Nepalese stock market was found to be away from normality and better fitted on a log-normal distribution, according to the paper. The NEPSE yearly trade volume and number of trades distribution is more peaked than the normal distribution.

If Nepalese investors follow the yearly trade volume and number of trade patterns, the compound effect of a transaction might lead to the formation of a stock portfolio.

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### References

- Adhikari, P.L. (2020). The dynamic relationship between stock returns and trading volumes in Nepalese stock market. *Management Dynamics*, 23(2), 161-172. <https://doi.org/10.3126/md.v23i2.35819>
- Ahmad, M.I. (2016). Joint distribution of stock market returns and trading volume. *Review of Integrative Business & Economics Research*, 5(3), 110-116. [https://www.sibresearch.org/uploads/3/4/0/9/34097180/riber\\_b16-085\\_110-116.pdf](https://www.sibresearch.org/uploads/3/4/0/9/34097180/riber_b16-085_110-116.pdf)
- Ajinkya, B.B., & Jain, P.C. (1989). The behavior of daily stock market trading volume. *Journal of Accounting and Economics*, 11(4), 331-359. [https://doi.org/10.1016/0165-4101\(89\)90018-9](https://doi.org/10.1016/0165-4101(89)90018-9)
- Galton, F. (1889). *Natural inheritance*. Macmillan.
- Gopikrishnan, P., Plerou, V., Gabaix, X., & Stanley, H.E. (2000). Statistical properties of share volume traded in financial markets. *Physical Review E*, 62(4), R4493-R4496. <https://doi.org/PhysRevE.62.R4493>
- Halder, S.C., & Das, K. (2016). Understanding extreme stock trading volume by generalized Pareto distribution. *The North Carolina of Mathematics and Statistics*, 2,45-60. <https://libjournal.uncg.edu/ncjms/article/view/1356>



- K.C., H. (2018). Performance analysis and prediction of Nepal stock market (Nepse) for investment decision using machine learning techniques. *International Journal of Computer Science Engineering (IJCSE)*, 7(1), 15-27. <https://www.ijcse.net/docs/IJCSE18-07-01-012.pdf>
- Kaizoji, T. (2013). Modelling of stock returns and trading volume. *IIM Kozhikode Society & Management Review*, 2(2), 147-155. <https://doi.org/10.1177/2277975213507835>
- Mpofu, R.T. (2012). The relationship between trading volume and stock returns in the JSE securities exchange in South Africa. *Corporate Ownership & Control*, 9(4), 199-207.
- Mu, G-H., Chen, W., Kertész, J., & Zhou, W-X. (2009). Preferred numbers and the distribution of trade sizes and trading volumes in the Chinese stock market. *The European Physical Journal B*, 68, 145-152. <https://doi.org/10.1140/epjb/e2009-00059-9>
- Pathirawasam, C. (2011). The relationship between trading volume and stock returns. *Journal of Competitiveness*, 3, 41-49.
- Qiu, T., Zhong, L.X., Chen, G., & Wu, X.R. (2009). Statistical properties of trading volume of Chinese stocks. *Physics A: Statistical Mechanics and its Applications*, 388(12), 2427-2434. <https://doi.org/10.1016/j.physa.2009.02.038>
- Ran, M., Tang, Z., & Chen, W. (2019). The influence of trading volume, market trend, and monetary policy on characteristics of the Chinese Stock Exchange: An econophysics perspective. *Open Physics*, 17(1), 985-998. <https://doi.org/10.1515/phys-2019-0105>
- Shrestha, S. (2016). Contemporaneous relationship between trading volume and stock returns volatility: Evidence from Nepalese stock market. *PYC Nepal Journal of Management*, 9(1), 40-63. <https://doi.org/10.3126/pycnjm.v10i1.36067>
- Sinha, S., Chatterjee, A., Chakraborti, A., & Chakraborti, B.K. (2011). *Econophysics: An introduction*. Wiley-VCH Verlag GmbH & Co.KGAA.
- Sun, X., Cheng, X., Shen, H., & Wang, Z. (2010). Statistical properties of trading activity in Chinese stock market. *Physics Procedia*, 3(5), 1699-1706. <https://doi.org/10.1016/j.phpro.2010.07.008>
- Tuncay, C., & Stauffer, D. (2006). Power laws and Gaussian for stock market fluctuations. *Physics A: Statistical Mechanics and its Applications*, 374, 1-7. <https://doi.org/10.1016/j.physa.2006.07.012>

- Nirei, M., Stachurski, J., & Watanabe, T. (2020). Trading clustering and power laws in financial market. *Theoretical Economics*, 15(4), 1365-1398. <https://doi.org/10.3982/TE3523>
- Vijayaraghavan, V.S., & Sinha, S. (2011). *Are the trading volume and the number of trades distributions universal?*In: Abergel, F., Chakrabarti, B.K., Chakraborti, A., & Mitra, M. (eds) *Econophysics of order-driven markets: New economic windows*. Springer. 17-30. [https://doi.org/10.1007/978-88-470-1766-5\\_2](https://doi.org/10.1007/978-88-470-1766-5_2)
- Weber, P., & Rosenow, B. (2006). Large stock price changes: Volume or liquidity? *Quantitative Finance*, 6(1), 7-14.<https://doi.org/10.1080/14697680500168008>



## Does Financial Information Influence The Behavior of Stock Price? Evidences From Nepali Commercial Banks

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### Abstract

*Financial information is the document that presents the overall financial health of the organization. This study examines the influence of financial information on stock price behavior of Nepalese commercial banks. Twelve commercial banks are selected as a sample out of total twenty-six commercial banks of Nepal based on operation more than ten years with availability of necessary information. This study utilizes quantitative research approach with causal-comparative research design. Adopting descriptive statistics and multiple regression analysis for data analysis, study found that financial information like net interest margin, net profit margin, dividend payout ratio and capital adequacy ratio have significant positive influence on determining stock price behavior of Nepalese commercial banks. In addition, evidence indicates that financial information is the major influencing factor while determining stock price and investment decision so investors should properly analyze financial information for superior investment decision.*

**Keywords:** *Balance sheet, Commercial banks, Dividend, Financial information, investment decision, Market price of stock*

### Introduction

Banking sectors mobilize the saving funds of the economy to the productive sectors so it plays the crucial role for economy development of the country. Banking sector makes effective contribution to the economy growth of the country as well as success and failure of the banking sector directly influence the economic development of the economy so it is considering as heart of the economy (Shrestha, 2020). Financial

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information is the barometer of the financial health of any organization including banking sector. Apart from the financial health of the economy and success and failure of a profitable banking sector positively contributes to the financial stability and financial health of the country. Therefore, financial information of banking sector plays the key role for the investment decision in the stock price of the any banks (Sapkota, 2020; Shrestha, 2020).

In Nepal, capital market is playing a significant role in financial mobilization and to provide an effective direction for obtaining long-term funds. In a addition it provide an investment opportunity for individuals and institutions (Chalise, 2020). Stock market is all about dynamic components so the individual as well as corporate investors including fund managers frequently analyze the information but faces problems and fail to accurately predicting the stock price to get superior returns. Investment in stocks provides the opportunity about benefit of liquidity as well as the opportunity to strike or hit the market that might leads to excellent returns (Bhattarai, 2018). The journey related to prediction of stock price is not a simple and the movement of stock price is not depended upon a single factor but is the combination of several factors including intrinsic and extrinsic factors (Malhotra & Tandon, 2013).

Pesik and Prochazkova (2022) found that net profit and retained earnings play the key role for stock price. Darami et al. (2022) found that stock price variability is affected by intrinsic and extrinsic factors of the organization and market price of stock is not influence by dividend payout ratio of the firm. Sapkota (2020) found that net interest margin, leverage ratio and firm size affect the firm performance. Hence, different financial information plays the dominant role while determining financial performance and/or stock price and it presents the financial health of the organization. So, the basic objective of this study is to examine the influence of financial information mainly net interest margin, net profit margin, dividend payout ratio and capital adequacy ratio on market price of stock of Nepalese commercial banks.

## **Literature Review**

Market price of stock is affected by the demand and supply of shares and the internal and external factors also affect the share price (Mondal, & Imran,2010). Both intrinsic and extrinsic factors influence movement of market price of the stock and it is not dependent on any one component variables. Ogbonna, U. G., Ejem, C. A.,

& Emmanuel, C. (2022) states that Asymmetry effect requires the need for timely disclosure in the market & appropriate dissemination of information related to the public by market operators in order to avert escalation of bad news & inform the regulatory bodies to offer timely interventions whenever it is expected to have loss in investments. Most of the theory reveals that the behaviour of the stock price is uncertain. The challenges provided by random walk theory to the fundamental analysts is to show complicated procedures than the simple random selection policy and to the technical analyst is he cannot merely show the security selected will perform better but has to prove it (Fama,1995).

Several studies are conducted to examine the financial information and stock price behaviour and has identified different relations. Study by Taimur, Harsh & Rekha (2015) identifies the positive & significant relationship exist between the market price of the share and the return on equity, Dividend per share and book value per share. Further study found significant negative relationship between market price per share and the dividend yield. In addition, Significant and negative relationship between stock price volatility and the DPR of company & significant and negative relationship between stock price volatility and Dividend yield (Rozaimah, Nurul & Chee 2018). Similarly, no significant relationship between operating and investing activities in the price of share of commercial banks which are listed in Amman Stock Exchange of Jordanian Sharif, Purohit, & Pillai. (2015).. Market price of stock is influenced in positively but insignificant by dividend yield & return on assets. The market price of stock has the favorable effect by the EPS, PE ratio and size of the bank (Bam, Thagurathi,, & Shrestha 2018). Silwal, & Napit, (2019) found positive relationship between book value, PE ratio, return on equity of the shares and dividend yield and negative relationship with market size of the company on stock price in Nepalese commercial banks.

Walter (1956) argued that dividend pay-out affects the stock price behaviour through rate of return and multiplier. Similarly, Litzenberger and Ramaswamy (1982) documented that dividend pay-out has positive relation towards stock price. Pettway (1976) documented that capital adequacy ratio significantly affects the return on stocks of commercial banks due to capital adequacy measures the sound position of capital of the banks. Iskandar (2021) and Hasibuan (2021) found that net interest margin has significant positive influence on price book value of stock of Indonesian Banks as well

as Silaban (2017) found that net interest margin (NIM) has significant positive impact on commercial banks performance in Indonesia. Likewise, Sapkota (2020) found that NIM has significant positive influence on firm performance of Nepalese commercial banks. Hadi et al. (2021) found that net profit margin has significant positive influence on stock price in Indonesian commercial banks. Likewise, Prijanto et al. (2021) and Sudirman et al. (2020) found that net profit margin has significant positive influence on stock price of beverage and food industry in Indonesia. Hunjra et al. (2014) found that dividend pay-out ratio has significant positive influence on stock price in non-financial sectors in Pakistan. Likewise, Iskandar (2021) found that capital adequacy ratio has significant positive influence on price book value of stock Indonesian Banks. Ogboi and Unuafe (2013) also documented that capital adequacy impacted positively on bank's financial performance.

### **Research Methodology**

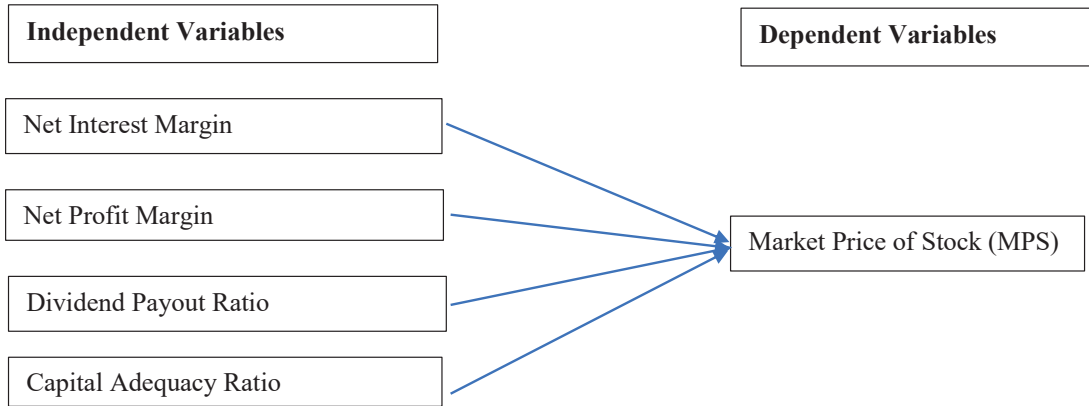
This chapter is designed to present the research methods used to meet the stated objectives of the study which explores the utilizing research process regarding about the stock price movement of commercial banks in Nepal. This study utilizes causal comparative research design to examine the influence of NIM, NPM, DPR and CAR on stock price behavior of the Nepalese commercial banks. The population of the study is the total number of commercial banks currently operating in Nepal. The sample of the study is the twelve commercial banks based on operation more than ten years, no inclusion of government banks, not involved in merger and availability of necessary information. This study utilizes descriptive statistics, multiple regression analysis with multicollinearity test using VIF test.

### **Research Framework**

The research framework depicts the influence of net interest margin, net profit margin, dividend payout ratio and capital adequacy ratio on market price of stock of Nepalese commercial banks. The detailed of the research framework is presented into Figure 1 and the measurement of the variables are documented into Table 1.

**Figure 1**

*Research Framework of the Study*



**Table 1**

*List of Variables, Sources and Their Measurements*

Notations	Variables	Description	Sources
MPS	Market Price of Stock	Closing price of stock at the end of the year	
NIM	Net Interest Margin	Net Interest Income divided by total assets of the balance sheet	Sapkota (2020); Hasibuan (2021) and Silaban (2017).
NPM	Net Profit Margin	Net income after tax divided by total operating revenue at the end of the year	Prijanto et al. (2021); Sudirman et al. (2020) and Hadi et al. (2021)
DPR	Dividend Payout Ratio	Total dividend divided by net income at the year end	Walter (1956); Hunjra et al. (2014)
CAR	Capital Adequacy Ratio	Total capital divided by total risk weighted assets at the end of the year	Iskandar (2021); Ogboi and Unuafe (2013)

Source: Researcher's Collection

$$MPS = f(\text{Net Interest Margin, Net Profit Margin, Dividend Payout Ratio, Capital Adequacy Ratio})$$

$$MPS = \beta_0 + \beta_1 NIM + \beta_2 NPM + \beta_3 DPR + \beta_4 CAR + e_i \dots \dots \dots (i)$$

This study only utilizes the four independent variables for the study to examine the stock price of Nepalese commercial banks, utilizes only secondary sources of data during ten-year periods, utilizes only twelve commercial banks for the study and unable to incorporate the government banks of the country.

## Results and Discussion

In this section, various tools, techniques and methods of analysis including descriptive statistics and multiple regression analysis are employed and the result of study is presented.

### Descriptive Statistics

Descriptive statistics including mean, maximum, minimum and standard deviation are incorporated. The Table 2 demonstrates the descriptive statistics of the variables under study.

**Table 2**

*Descriptive Statistics of the Variables*

<b>Variables</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
MPS	107	5,120	769.641	1121.087
NIM	0.004	0.05	0.0321	0.009
NPM	0.001	0.0317	0.0139	0.051
DPR	0.000	0.500	0.113	0.671
CAR	0.0517	17.539	0.125	0.986

*Sources: Data Calculated from Annual Reports of the Sampled Banks*

Table 2 depicts the results of descriptive statistics of the all-study variables. The minimum stock price is Rs. 107 and maximum stock price is Rs. 5,120 and the average stock price is 769.641. Likewise, minimum NIM is 0.40 percent and maximum is 5 percent. The average net profit margin of the Nepalese commercial banks is 1.39 percent with minimum 0.10 percent and the maximum is 3.17 percent. Similarly, the average dividend payout ratio of the Nepalese commercial banks is 11.30 percent and average capital adequacy ratio is 12.50 percent. This adequacy ratio indicates that Nepalese commercial banks have some what sound capital position due to minimum capital adequacy ratio set by Nepal Rastra Bank (NRB) is 10 percent ([www.nrb.org.np](http://www.nrb.org.np)).



### Correlation Coefficient Analysis

The degree and magnitude of relationship among variables is measured by correlation coefficient. The detailed of the results of correlation coefficient is presented into Table 3.

**Table 3**

*Correlation Coefficient Among Variables*

Variables	MPS	NIM	NPM	DPR	CAR
MPS	1	0.562**	0.517**	0.612**	0.499**
NIM		1	0.613**	0.577**	0.431**
NPM			1	0.638**	0.501**
DPR				1	0.394**
CAR					1

*Sources: Annual Reports of Banks*

Table 3 depicts that the value of correlation coefficient of studied variables and are significant at 0.05. MPS has positive correlation among all the independent variables. Likewise, there is no indication of multicollinearity since the coefficient value of all independent variables under study are less than 0.70 (Sekaran & Bougie, 2016).

### Multiple Regression Analysis

The influence of net interest margin, met profit margin, dividend payout ratio and capital adequacy ratio on market price of stock is examined. The detailed of the results of multiple regression is documented into Table 4 and Table 5.

**Table 4**

*Model Summary and ANOVA*

R	R <sup>2</sup>	Adj. R <sup>2</sup>	S. E.	F Stat.	Sig.
0.713	0.509	0.487	0.072	39.719	0.000

*Sources: Annual Reports of Banks*

Table 4 depicts that the net interest margin, met profit margin, dividend payout ratio and capital adequacy ratio explain the variation in market price of stock is nearly

51 percent. The fitted model is significant at 0.05 due to p value is less than 0.01 level. Likewise, the detailed of influence on stock price by all independent variables are demonstrated into Table 5.

**Table 5**

*Regression Result*

<b>Construct</b>	<b>Coeff.</b>	<b>S. E.</b>	<b>t Stat.</b>	<b>Sig.</b>	<b>VIF</b>
Intercept	22.153	3.135	7.066	0.000	-
NIM	35.114	7.867	4.463	0.000	1.986
NPM	44.786	9.915	4.517	0.000	1.478
DPR	23.109	5.739	4.027	0.000	1.799
CAR	33.991	6.681	5.088	0.000	1.891

*Sources: Annual Reports of Banks*

Table 5 illustrates that the all-independent variables have significant influence the market price of the stock. VIF is less than 10 indicates no presents of multicollinearity among the variables (Sekaran & Bougie, 2016). The major contributing variable among all is net interest margin and lowest influence variable is capital adequacy ratio. Net interest margin is the profitability ratio which directly influence the overall profit of the organization that leads to positive influence on stock price of the banks and this finding is consistent with the study of Iskandar (2021) and Hasibuan (2021). Net profit is financial profit generated by the banks so net profit margin is the major indicator of the performance of the banks that directly influence the stock price of banks and this finding is consistent with the finding of Prijanto et al. (2021) and Sudirman et al. (2020). Based on equation (i), the fitted model is given as,

$$MPS = 22.153 + 35.114 NIM + 44.786 NPM + 23.109 DPR + 33.991 CAR + e_i$$

Dividend payout is the percentage of earning distributed to the shareholders. Due to signaling hypothesis, dividend payout ratio significantly positive influence on stock price of the banks and this finding is similar with the result documented by Hunjra et al. (2014). Likewise, capital adequacy is related to financial soundness of the banks. Higher capital adequacy ratio indicates the strong capital position of the banks and has strong competition position that leads to positive influence on stock price and which is consistent with the result of Ogboi & Unuafe (2013) and Iskandar (2021).

## Conclusion and Implications

This study found that price of common stock is significantly influenced by net interest margin, net profit margin, dividend payout ratio and capital adequacy ratio. The main determinant factor for stock price is to net interest margin that might due to higher the difference between interest income and interest expenses, higher will be the market price of the stock due to positive perception of the investors. Similarly, net profit, dividend payout and capital position has also positive influence on stock price. So, firm should properly handle the financial information due to investors frequently utilizes financial information which directly influence the share price of Nepali commercial banks.

The findings of present research are invaluable for managers of the banks, board of directors, regulators as well as policy makers to identify the overall of capacity to predict the stock price movement, they can develop appropriate policy for wealth maximization objectives as well as identify major factors that influence the stock price and returns of stock in Nepali commercial banks.

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## References

- Bam, N., Thagurathi, R. K., & Shrestha, B. (2018). Stock price behaviour of Nepalese commercial banks: random walk hypothesis. *Journal of Business and Management*, 5, 42-52.
- Bhattarai, B. P. (2018). The firm specific and macroeconomic variables effects on share prices of Nepalese commercial banks and insurance companies. *Review of Integrative Business and Economics Research*, 7, 1-11.
- Chalise, D. R. (2020). Secondary capital market of Nepal: Assessing the relationship between share transaction and NEPSE index. *Management Dynamics*, 23(2), 53–62. <https://doi.org/10.3126/md.v23i2.35807>

- Darami, A. bt I., Shahidan, A. S. B., & Romli, N. bt. (2022). The Determinants of Share Price on Commercial Bank in Bursa Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 12(9), 593-605. <http://dx.doi.org/10.6007/IJARBSS/v12-i9/14647>
- Fama, E. F. (1995). Random walks in stock market prices. *Financial analysts journal*, 51(1), 75-80.
- Hadi, M., Ambarwati, R. D., & Haniyah, R. (2021). Pengaruh Return on Asset, Return on Equity, Net Interest Margin, Net Profit Margin, Earning per Share dan Net Income terhadap Stock Price Sektor Perbankan Tahun 2016–2020. *JMBI UNSRAT (Jurnal Ilmiah Manajemen Bisnis dan Inovasi Universitas Sam Ratulangi)*, 8(3). 770-792. <https://doi.org/10.35794/jmbi.v8i3.36743>
- Hasibuan, T. F. H. (2021). The Influence Of Capital Adequacy Ratio, Loan To Deposit Ratio, Non-Performing Loan, Net Interest Margin, And Operational Efficiency Ratio On Share Prices With Return On Assets As An Intervening Variables In Banking Company Listed On The Idx. *International Journal of Public Budgeting, Financial and Finance*, 4(1), 1-27.
- Hunjra, A. I., Ijaz, M., Chani, D., Irfan, M., & Mustafa, U. (2014). Impact of dividend policy, earning per share, return on equity, profit after tax on stock prices. *Impact of Dividend Policy, Earning per Share, Return on Equity, Profit after Tax on Stock Prices. International Journal of Economics and Empirical Research*, 2(3), 109-115. Available at SSRN: <https://ssrn.com/abstract=3229692>
- Iskandar, Y. (2021). Effect of Net Interest Margin, Return on Equity, Return on Assets, Capital Adequacy Ratio on Price Book Value at Commercial Banks in Indonesia. *DIALEKTIKA: Jurnal Ekonomi dan Ilmu Sosial*, 6(1), 9-16. : <https://doi.org/10.36636/dialektika.v6i1.592>
- Litzenberger, R. H., & Ramaswamy, K. (1982). The effects of dividends on common stock prices tax effects or information effects? *The Journal of Finance*, 37(2), 429-443. <https://doi.org/10.2307/2327346>
- Mondal, S. A., & Imran, M. S. (2010). Determinants of stock price: a case study on Dhaka stock exchange. *International Journal of Finance*, 2(3), 1-16.
- Ogboi, C., & Unuafe, O. K. (2013). Impact of credit risk management and capital adequacy on the financial performance of commercial banks in Nigeria. *Journal of emerging issues in economics, finance and banking*, 2(3), 703-717.

- Ogbonna, U. G., Ejem, C. A., & Emmanuel, C. (2022). Do Capital Market Returns Actually Predict the Standard of Living of a Nation: Evidence from Nigeria. *Research Journal of Finance and Accounting*, 13(12), 57-66
- Pešík, J., & Taušl Procházková, P. (2022). An Effect of Financial Indicators on Share Price of largest US companies. <https://www.researchgate.net/publication/365946623>.
- Pettway, R. H. (1976). Market tests of capital adequacy of large commercial banks. *The Journal of Finance*, 31(3), 865-875. <https://doi.org/10.2307/2326431>
- Prijanto, B., Pulung, R. F., & Sari, A. R. (2021). The Influence of Net Profit Margin on Stock Price with Earnings Per Share (Eps) As Moderating Variables: The Case Study on Food and Beverage Sub Sector Companies Listed on the Indonesia Stock Exchange from 2015 to 2019. *Journal of Economics, Finance and Financial Studies*, 3(2), 74-80. <https://doi.org/10.32996/jefas.2021.3.2.8>
- Rozaimah Z., Nurul S. M., Chee H. Y., (2018). Dividend policy and stock price volatility of industrial products firms in Malaysia. *International Journal of Emerging Markets*, (13)1, 203-217, <https://doi.org/10.1108/IJoEM-09-2016-0250>
- Sapkota, M. P. (2020). Corporate Governance and Financial Performance of Nepalese Commercial Banks. *PYC Nepal Journal of Management*, 13(1), 40–50. <https://doi.org/10.3126/pycnjm.v13i1.31496>
- Sekaran, U., & Bougie, R. (2016). *Research Methods for Business: A Skill Building Approach*. John Wiley & Sons.
- Sharif, T., Purohit, H., & Pillai, R. (2015). Analysis of factors affecting share prices: The case of Bahrain stock exchange. *International Journal of Economics and Finance*, 7(3), 207-216.
- Shrestha, P. M. (2020). Determinants of Financial Performance of Nepalese Commercial Banks: Evidence from Panel Data Approach. *NRB Economic Review*, 32(2), 45-59. <https://doi.org/10.3126/nrber.v32i2.35300>
- Silaban, P. (2017). The effect of capital adequacy ratio, net interest margin and non-performing loans on bank profitability: the case of Indonesia. *International Journal of Economics and Business Administration*, 5(3), 58-69. <https://www.um.edu.my/library/oar/handle/123456789/43353>
- Silwal, P. P., & Napit, S. (2019). Fundamentals of Stock Price in Nepalese commercial banks. *International Research Journal of Management Science*, 4, 83-98.

- Sudirman, S., Kamaruddin, K., & Possumah, B. T. (2020). The Influence of Net Profit Margin, Debt to Equity Ratio, Return on Equity, and Earning per Share on the Share Prices of Consumer Goods Industry Companies in Indonesia. *International Journal of Advanced Science and Technology*, 29(7), 13428-13440.
- Tandon, K., & Malhotra, N. (2013). Determinants of stock prices: Empirical evidence from NSE 100 companies. *International Journal of Research in Management & Technology*, 3(3), 86-95.
- Walter, J. E. (1956). Dividend policies and common stock prices. *The Journal of Finance*, 11(1), 29-41.



## Impact of Marriage on Career Development of Women: A Study of Newar Community of Kirtipur

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Royal Thai Embassy of Nepal

### Abstract

*The main objective of the research entitled Impact of Marriage on Career Development of Women: A Study of Newar Community of Kirtipur was to study the effects of marriage particularly on married women of the Newar community of Kirtipur and its impact on their career development.*

*Both quantitative and qualitative approach were used as a mixed method. A cross sectional survey questionnaire was administered among the Newari married women of four wards - 3, 5, 9 and 10 ranging their ages from 24 to 45 to represent the total population of Kirtipur Municipality, Kathmandu. By purposive sampling method, 100 responses were collected and analyzed through SPSS V.20 for quantitative data and four cases were interviewed for qualitative data analysis. The data were analyzed on the basis of auto-ethnographic design.*

*The study reveals the married women pursue less demanding jobs such as part-time and less effort making jobs due to household responsibilities. They cannot focus on career development to get opportunity in better workplace. The major contribution to the impact of marriage is engagement in household chores after marriage including taking care of their children until they are grown up for school.*

**Keywords:** *Newari women, impact, marriage, career development*

### Introduction

Marriage is a matrimonial wedlock, a sociably and culturally accepted unification between spouses that establishes rights and obligations resulting biological or adopted children. In marriage, basically brides and grooms are chosen as per their caste and religion. Arranged marriages are conducted within the same caste, religion,

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*Gotra* (*Gotra* - the lineage or clan into which a Hindu is born. Like a surname, it is patrilineal and a born child normally adopts the father's Gotra. A woman usually adopts Gotra of her husband after marriage. If an inter-caste boy and the girl falls in love to tie the knot, then their relations may or may not be accepted by the family of both, yet, she acquires her husband's Gotra. As Sunuwar (2020, p.2) writes "Newars are one among 59 indigenous people recognized so far by government of Nepal". Newar community reside in every part of the country but they are the original inhabitants of Kathmandu, the capital city of Nepal and thus, they have a society of cultural orthodox within their own caste and culture.

Singh (2018) says "the girl is never widowed even if her husband dies, as her husband in form of Lord Vishnu is immortal". Before the age of puberty, the second marriage is performed with the Sun which is called "*Ba:ra:*" in Newari language and "*Gufa*" in Nepali Language. The ceremony lasts for almost 12 days where they are put in a cave like surrounding in a dark room for 11 days to prove their purity and then on the 12<sup>th</sup> day, the girl is married to the Sun, which is a symbol of eternity. And, finally, after she enters into the age of puberty and adulthood, she is eligible to marry a human being.

Following the culture, Bajracharya (2010, pp. 418-428) writes "In a traditional marriage, however, the father employs friends to search for suitable girls for his sons and when one is found he sends an intimate friend as a Lami to commence negotiations with her family",418. In Newar society, the father searches for a suitable girl for his son through friends or relatives, and when found, they chose a family friend to check if the horoscope of the boy matches with the girl. The family of the boy assigns a Lami (family friend who can negotiate and assist in finding the match between the horoscope of the girl and boy). Once the horoscope matches, further talks progresses through the Lami until the day of marriage.

According to Oxford English Dictionary, career is defined as a person's course or progress through life (or a distinct portion of life) and is related to remunerative work. Women have been very significant contributor in any organization, they chose to either continue their education, or continue their career or few more chose to carry on with their social responsibilities.

Marriage is considered as a source of support, entertainment and satisfaction to the married couple. Nevertheless, members of society spend less time together and gradual dissatisfaction develops among them that often leads to marital disruption.



Especially, financially independent women are less happy. Due to the need to survive, the couple are compelled to go far from their residence for job which generates gap between them and are resulting it to be “the unhappy marriage life”. (Acharya, 2010, p. 5)

The association between women and soil created a notion of women being less mobile and “women are often portrayed as rooted to the soil”, (Codesal, 2018). Family responsibilities may also reduce physical mobility. Women are less mobile than men because women are depicted as rooted to the soil, due to their physical reasons and expected to give birth to the offspring only. Culture is the strength of Newar community, however, they are changing slowly, yet, they still resist to their culture.

As Villier’s (2001, pp. 251-265) report says, “Emotional maturity needed to do work of real importance was needed twenty years ago”, 260. Women who had a break in their career after marriage for the sake of family formations proved average achievers. The women who start their second career realize the need of such maturity in their early years of their career.

According to Luitel (2001, p. 111) “Women’s contribution in the subsistence economy has not been considered as economic activity”. Women have to face at the household chores and thus, they have not been able to participate in the better income generating works and their contribution is still not considered as economic activity in the society. Issues on women’s empowerment have been raised every year in the national level but it the pace of implementation is taking time. Although the plans have been proposed strategically in the education, health, agriculture, employment and other legal systems by the government and the non-government agencies, it has yet to be addressed in the local level to reach the local households for increased recruitment of women at all levels.

In the Newar community, the oldest male is always the head of the family and takes sole responsibility for decision making irrespective of any issues in the family. Some of the Newars are in many ways more liberal but hold very traditional beliefs and tend to be more conservative, while those with education and better opportunities for social participation and economic engagement tend to be more liberal (Shrestha et al., 2015, pp 53-63). The Newar women fall victim to social and economic obligations if they belong to the traditional conservative family and thus, they are excluded or discouraged from involvement in household and family decision making processes because of patriarchal values and power structure in the family. The women who belong

to educated family are tend to get opportunity to continue their education and also participate in income generating activities, which assist them in career development as they preferred.

Pradhan (1981, p. 84) states “The main occupation of the villagers is agriculture, hence the major source of income is derived from agriculture . . .”. Although the literature showed that the Newar women from Bulu are involved in agricultural labour for wages and pass their time in trading in shops to sell stuffs where trading is done exclusively by men, the women of Newar community of Kirtipur have yet to be explored in what way they do their earnings. Hence, the purpose of this study is to explore married women’s status in Newar community of Ward 3,5,9 and 10 of Kirtipur to bring out what impact has their marriage created on their career development as the central part of study.

### **Statement of Problem**

Kirtipur is a *ghetto (city near to the capital city)* area of Kathmandu city where the biggest as well as largest University, Tribhuvan University, is located. Kathmandu city dwells with a majority of Newar community. Things are slowly evolving towards education and since Kirtipur is a predominant city of Newar community. However, no research has been conducted on the impact of marriage of women and its effects on their career and this keeps the women and their position under the carpet.

### **Objective of the Study**

The study aims is to find out the effects of marriage particularly on married women of the Newar community and its impact on their career development in general. Specifically, the study aims:

- to identify perceptions of the married women and its impact over career development.
- to assess contributing factors that affect the career of married women.

### **Significance of the Study**

The study aids in finding out the perception of married women of Newar community on the effects of marriage over career development and decision-making, and the perceived factors that promote and hinder the career among married women of Newar community.

This research will be an important asset for the policy makers of Kirtipur

Municipality where pre-dominantly reside the large population of Newar community. The new policies can be formulated taking in to consideration of the respondents' attitude towards education, exposure to the community, domestic affairs, opportunities for the employment for the women and their socio-demographical status. It's outcome will be very helpful to the entire community of Kirtipur.

Women, whether they are jobless or jobholders, require various opportunities for their professional career and socio-economic growth that will be helpful for their family members, their ward, their workplace, the Municipality and ultimately, the whole Kirtipur valley.

### **Methods**

By purposive sampling method, the qualitative and quantitative approach were used as mixed method. A cross sectional survey questionnaire was issued among the married women of four wards - 3, 5, 9 and 10 ranging their ages from 24 to 45 to represent the total population of Kirtipur Municipality, Kathmandu. Altogether 100 responses were collected and analyzed through SPSS V.20 for quantitative data and four cases were interviewed for qualitative data analysis. The data were further analyzed on the basis of auto-ethnographic design.

### **Findings and Discussions**

The socio-demographic data clearly illustrates information of the respondents based on caste, age, religion, marital status and their family type from the different four wards-3,5,9 and 10 of Kirtipur. Municipality in the Newar community. Among the 100 respondents, predominantly 95% of the women were married to Maharjans in all four wards. This showed undivided bonding in language, culture and religion. Some five percent incorporates all other 17 different castes. Similarly, given that the career development starts from the respondent's age 24 and maximum age of 45. The majority of the respondents were Hindus by 73%, whereas approximately three-fold less were Buddhists. Interestingly only 3% were Christian. Nearly half of the study population were living in a small/nuclear family whereas the other half were living in a joint family.

### Age of Participants and Perception on Education After Marriage

The respondents were asked about their education after marriage. To find out the association between different age groups and their education after marriage, the demographic characteristics of respondents have been tested formulating following hypothesis:

$H_0$ : There is no association between demographic characteristics of respondent's age and their education after their marriage.

**Table 1**

*Age of Participants and Perception on Education after Marriage*

	Education after Marriage				Total	Chi-Square	P-value
	Grade 10	Grade 12	Bachelor	Masters			
<35 Years	0	8	17	27	52	9.976	.019
> 35 Years	1	16	19	12	48		
Total	1	24	36	39	100		

Table 1 exhibits the association between age of the respondents and their level of education after marriage. The educational level after marriage found statistically significant with age group (The P value is 0.019).

The result showed that about 50% respondents completed their education even after marriage. The respondents below 35 years were 52% and above 35 years were 48%. Those who were below 35years completed their education after marriage. Out of total 100, 27% of the respondents below 35 years of age successfully completed Master's degree whereas only 12% above 35 years completed Master degree. Women under the age of 35 years focused on developing their career by achieving higher degree of education but with the growth of age, the interest and passion for completing higher degrees diminishes.

### Age Group of Participants and their Perception on Skill-based Training

The respondents were asked if they attended skill-based training despite their age after marriage. The demographic characteristics of respondents have been tested formulating following hypothesis:

$H_0$ : There is no association between demographic characteristics of respondent's age and their statement for skill-based training; the Chi-Square value, degree of freedom and p value have been presented in Table 2

**Table 2**

*Association between Age Group of Participants and their Perception on Skill-based Training*

Age Group	Attended Skill-based Training			Total	Chi-Square	P-value
	SA/A	N	D/SD			
<35 Years	45	5	2	52	13.350	0.010
> 35 Years	28	14	6	48		
Total	73	19	8	100		

(A= Strongly Agree; A= Agree; N=Null; D=Disagree; SD=Strongly Disagree)

Table 2 presents the association between the age group of the respondent and participation on skill-based trainings. The participation on skill-based training is found statistically significant with age group (The P value is 0.010).

The result showed that out of 52% of the respondents below 35 years of age, 45% agreed to the need of skill-based trainings, but five percent showed their confusion if they really need it, and as less as two percent perceived that they do not need it.

Similarly, among the 48% respondents above 35 years of age 28% agreed to the need of skill-based training, 14% did not agree to the need of such trainings but five percent disagreed to the need of skill-based education.

### **Study Continuity and Education after Marriage**

The respondents were asked if they are continuing their education after marriage. The demographic characteristics of respondents have been tested formulating following hypothesis:

$H_0$ : There is no association between demographic characteristics of respondent's status on continuing studies at present and their education after marriage; the Chi-Square value, degree of freedom and P value have been presented in Table 3

Table 3 depicts the association between education after marriage and the continuity of studies at present. The association is found statistically significant (The P value is 0.028).

**Table 3***Study Continuity and Education after Marriage*

Continuing Studies	Education after Marriage				Total	Chi-Square	P-value
	Grade 10	Grade 12	Bachelors	Masters			
Yes	0	3	11	18	32	9.139	.028
No	1	21	25	21	68		
Total	1	24	36	39	100		

The respondents were asked if they are continuing studies at present, three percent who were studying at present completed grade 12, 11% completed Bachelors, 18% completed Masters. Among the respondents who were not continuing education after marriage, one percent had grade 10, 21% had grade 12, 25% had Bachelor's degree and 21% had Master's degree after marriage. The result showed that there was a huge impact of marriage on the continuity of education of the respondents. The majority of the respondents as many as 68% dropped the idea of continuing education whereas the rest of the respondents were continuing.

### **Association between Decision Making (DM) in Family, and Family Cooperation and Encouragement**

The respondents were asked if they make decision in family and whether they get family cooperation and encouragement. To find out the association between women's freedom in decision making in family and the family cooperation and encouragement, the demographic characteristics of respondents have been tested formulating following hypothesis:

$H_0$ : There is no association between demographic characteristics of respondent participating in decision making in family and family cooperation and encouragement; the Chi-Square value, degree of freedom and P value have been presented in Table 4

Table 4 illustrates the association of Family Cooperation and Encouragement with Decision Making in Family. This association is found statistically significant (The P value is 0.034).

**Table 4***Decision Making and Family Cooperation in Family*

DM	Family Cooperation and Encouragement				Total	Chi-Square	P-value
	SA	A	N	D			
Very Often	17	14	4	2	37	13.634	0.034
Occasional	16	32	7	1	56		
Not at All	0	3	3	1	7		
Total	33	49	14	4	100		

SA= Strongly Agree; A= Agree; N=Null; D=Disagree, SD=Strongly Disagree

The result showed that out of 37 respondents who very often made decision in family 17% strongly agreed and 14% agreed to having family cooperation and encouragement but as few as four percent out of the total made neutral remarks and two of the total disagreed that they get family cooperation and encouragement. Among the total 56% who occasionally make decision in family, 16% strongly agreed and 32% agreed to get family cooperation and encouragement, whereas seven percent did not participate in decision making and as few as one percent disagrees that they get family cooperation and encouragement. Interestingly, among the seven percent who never made decision in family, three percent agreed to family cooperation and encouragement and another three percent had neutral opinion whereas only one percent disagreed to family cooperation and encouragement. None of the respondents strongly disagreed that they get family support and encouragement.

### Qualitative Analysis

The qualitative approach was administered in four cases of different four wards-3,5,9 and 10 each respondent representing a ward. The semi-structured interview was scheduled to elicit the information from each respondent in various themes already set such as impact of marriage marriage, their education, career, career break, family environment and decision making. The recorded responses were tallied with the perceptions collected from the quantitative data to discover similarities and differences among other respondents on the above themes. The respondents were coded by their pseudonyms and the responses were narrated by the researcher tinged with her own observation being as a part of the Newar community.

The scheduled interview was administered to crosscheck the gap of perception and socio-demographic status. The collected data were analyzed. The qualitative data were felt as a part of research by the researcher to bring out the responses independently, which the tables might have been unable to answer.

The main aim of the study was to find out the current status of married women of Kirtipur, their education and family cooperation and support for their career development to clear out the inquisitive assumption about the career, education and life style of women married in Kirtipur.

### **Discussion of Findings**

The major findings of the study were drawn on the basis of quantitative and qualitative data analysis and interpretation.

More than 95% married Newari women of Kirtipur agreed that they were well supported by all family members and concerned on their career development. They got opportunity in decision making and career development, but due to age, time management and family responsibilities, they lost opportunities in obtaining preferred profession. As Bhalalusesa writes “A woman who is seriously interested in preparing for a professional career is disadvantaged from the start”, 31. Women get pressure from society and her own thoughts from early childhood that she cannot compete in the male dominated society. Woman feels the responsibility for her family first rather than career. If the husband supports, then only she can pursue better in her career.

This finding is similar to the finding of women from urban areas and the hilly region where women with no education have a higher say compared to those having primary or secondary education. In development regions, women’s response showed mixed variations. My findings opposed to this finding because according to the education status and family structure, the decision power of the women varies. There have been researches done in Lalitpur and Bhaktapur districts on comparative economic status of women but so far the research has not been carried out in women of Newar community of Kirtipur. Women, who are living in joint family, are given opportunity to make decision as needful.

In context of career development, married women in Newar community are given opportunity to persevere their career and advancement in education continuation. As per the tradition in Kirtipur, most of the residents adopt farming as their profession



and thus, least important is education for the entire family. The women of Kirtipur have to support their family in whatever profession they are involved in. Becker says “The earnings of women are adversely affected by household responsibilities even when they want to participate in the labor force as many hours as men, because they become tired, must stay home to tend to sick children or other emergencies, and are less able to work odd hours or take jobs requiring much travel”, S43. The earnings of women at their workplace are affected due to household responsibilities despite their willingness to work as much as men do.

Many of the residents are understood as illiterate, and very few are involved in farming rather than white collar jobs. People of Kirtipur are dominated by people of other cities because people of other cities, apart from farming as their profession, also focus in education and career development whereas people of Kirtipur are engaged in farming as their profession. But the data gave amazing output such as, the women of Newar community of Kirtipur are literate, continuing their studies after marriage. They are continuing their education to Masters level or beyond and most of these women are working in paid jobs but less adopted farming as their profession.

### **Conclusion and Implication**

Most of the women in Newar community, are found to have been engaged in household responsibilities and thus, lost chances of grabbing good job opportunities of their choice and competency. In the early years of marriage, they could not put their voices for themselves and thus, they have faced difficulty in getting along with the new family. Marriage in early years, family ties, household chores, child bearing and rearing, social protection, lack of freedom to expose their capabilities, burden of large family, lack of employment skills, discouragement on second career and decision making are key factors to have an impact of marriage on their career. As a result, the Newari women have to stay content in handy jobs. Nevertheless, the research shows that the women are encouraged by the partners with the change of time either to continue their education or to work in good organization. Yet the central point is to grow their family line for future generations. After the children are grown up, these caring mothers of the children and wife of caring husband also get matured, and thus, they happen to lose opportunity in grabbing competent jobs due to the age barrier. The responsibilities in joint family and nuclear family are alike in nature. The only

difference is that in joint family, women have to take permission from elders whereas in nuclear family they could decide on their own in many occasions. Firmly those girls who are working before marriage and are conscious of them are found to be strong in the Newari community.

For facilitating the career development, the women in Newari community should be empowered with the decision making. They should be assured with psychological strength to resume their second career. Similarly, Newar family should change their thoughts toward girls by giving them time to complete their education before getting them married however well off the family she is going to live with.

Many changes have come in Newar community in Kirtipur where married women are found to have been continuing their education beyond Bachelor's degree. Those women should be made as role models should be given to lead in the community to encourage other women. Whether they are living in a joint family or small family, they should be motivated and given good exposure in the outside world. Trainings should be given to them to boost up their confidence with their self-esteem and generate income to become self-reliant.

In Newar society, social changes are very challenging. The research showed that Kirtipur is dominated by Maharjan castes. The concerned authority can bring outreach programs focusing the Maharjans, which would definitely become more effective. There are more Hindus than Buddhists and few Christians are dwelling permanently. Therefore, programs that focus on these religions will be more effective.

## References

- Acharya, D. R., Bell, J., Simkhada, P., Teijlingen, E. R. V., & Regmi, P. R. (2010). Women's autonomy in household decision-making: A demographic study in Nepal. *Reproductive Health*, 7(15), 1-7. doi:[10.1186/1742-4755-7-15](https://doi.org/10.1186/1742-4755-7-15)
- Bajracharya, P. H. (2020). Newar marriage customs and festivals. *Southwestern Journal of Anthropology*, 15,(4), 418-428. JSTOR, [www.jstor.org/stable/3628903](https://www.jstor.org/stable/3628903).
- Becker, G. S. (1985). Human capital, effort, and the sexual division of labor. *Journal of Labor Economics*, 3, (1), 33-S58. JSTOR, [www.jstor.org/stable/2534997](https://www.jstor.org/stable/2534997).
- Bhalalusesa, E. (1998). Gender and Education. *Women's Career and Professional Development: Experiences and Challenges*, 10, (1), pp 21-33. doi:[10.1080/09540259821078](https://doi.org/10.1080/09540259821078).

- Codesal, D. M. (2018). Are women less mobile than men. [www.migrationist.com/wp](http://www.migrationist.com/wp).
- Pradhan, B. (1981). The Newar women of Bulu. *The Status of Women in Nepal*, Center for Economic Development and Administration, 2, (6), 80-85. [www.amazon.com/Newar-Women-Bulu-Status-Nepal/dp/B0006ECCB0/ref=sr\\_1\\_2](http://www.amazon.com/Newar-Women-Bulu-Status-Nepal/dp/B0006ECCB0/ref=sr_1_2).
- Luitel, S. (2001). The social world of Nepalese women. *Occasional Papers in Sociology and Anthropology*, 7, (1), 101-114. [www.himalaya.socanth.cam.ac.uk/collections/journals/opsa/pdf/OPSA\\_07\\_07.pdf](http://www.himalaya.socanth.cam.ac.uk/collections/journals/opsa/pdf/OPSA_07_07.pdf)
- Singh, M. (2018). Nepal's Newari community: *Where girls marry a fruit and the Sun*. Updated: June 19, 11:02 The National Network. [www.timesofindia.indiatimes.com/articleshow/64643311.cms?utm\\_source=Native\\_Share\\_Tray&utm\\_medium=social&utm\\_campaign=TOIMobile&utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst](http://www.timesofindia.indiatimes.com/articleshow/64643311.cms?utm_source=Native_Share_Tray&utm_medium=social&utm_campaign=TOIMobile&utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst).
- Shrestha, R. P., Maharjan, K.L., & Rajbhandari, T. (2015). A comparative study of the socioeconomic status of women in the Jyapu Community of the Lalitpur and Bhaktapur Districts of Nepal. *Journal of Contemporary Inda Studies: Space and Society*, (5), 51-63.
- Sunuwar, D.K. (2020). Indigenous Voice, 1-7. [www.indigenousvoice.com/en/indigenous-peoples/14/newar.html](http://www.indigenousvoice.com/en/indigenous-peoples/14/newar.html).
- Villiers, S. L. D. (2001). *Aspects of professional career success and the implications for life skills Education*. Doctoral dissertation, South African University, 251-265. [www.uir.unisa.ac.za](http://www.uir.unisa.ac.za)



## Advocacy for Religious Plurality in Vivekananda's Speech

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### Abstract

*This research examines Swami Vivekananda's speech delivered in the World Parliament of Religions in Chicago in 1893 AD. It has been evaluated in the light of Mortimer Jerome Alders's Truth in Religion: Plurality of Religion and Unity of Truth. While evaluating Vivekananda's advocacy for plurality of religions for the global peace and order, the researchers concerns on his resistance to religious fanaticism and orthodoxy. For the study of his resistance to the exploitation and extermination adopted by the westerners in the shield of religion calling it "Civilizing Mission", the researcher takes his essay The East and the West as the major reference. The study argues that Vivekananda's appeal for the celebration of religious plurality counters the bigotry and fanaticism in the name of religion. It is assumed that this article has a deep substance to understand Vivekananda's advocacy for plurality of religions, emphasizing on the tenets of pluralism in Hinduism and historical repercussions of religious hegemony.*

**Keywords:** *plurality of religions, resistance, bigotry, fanaticism, exploitation, Indian philosophy*

### Introduction

This research seeks to explore how Swami Vivekananda presents Indian Philosophy of harmony in the USA and questions the cultism that spreads discord and revenge. Religious extremism and radicalism result into communal hatred, violence and even terrorism. The event of September 11, 2001 in New York and its repercussions give a sharp focus on the issues such as relationship among religious, cultural and national identity; multicultural societies and widespread 'Islamophobia'. In 1893, Swami Vivekananda addressed the Parliament of Religions in Chicago highlighting

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pluralistic approach of Hinduism and its significance for universal fraternity. The researcher studies his entreaty for pluralism in the speech and tries to excavate his intention of defying supremacy of any faith by close reading of his essay “The East and the West”. Vivekananda’s purpose is to shed light on the cosmopolitan nature of Hinduism but he appeals for people of various cults to unite for the common cause of humanity. He advocates for developing acceptance, tolerance and respect to others’ religious faiths. The message delivered by Vivekananda turns more relevant at present. Religious hatred in subtle form may take blatant form at any time. The researcher argues that an appeal of Vivekananda for celebration of religious plurality counters the prejudice and extremism in the name of religion. It also challenges dogmatism and superiority of any particular faith and establishes Indian Philosophy of human welfare.

### **Literature Review**

It seems safer to comprehend the holy intention of various religions instead of debating over the truths. The divinity is realized only by an enlightened person because it is not available in rituals. Rituals are for the exercise of higher journey but not the end. In *Truth in Religion: Plurality of Religions and the Unity of Truth* Mortimer Jerome Alders (1990) worries, “An approach to the study of religion is concerned with defending the truth of one religion against the claims of others, which it rejects as false” (p.42). The Religious studies which favors one at the cost of another’s existence turns detrimental for humanity. The religious practices that beget hatred cannot be termed as religion. It is the blasphemy of the very religion. Vivekananda challenges to show the single expression through the whole order of Sanskrit Philosophy that intends to save the Hindus only and harm others. Vivekananda refers the declaration of The Lord in Vedic scripture in his incarnation as Krishna, “I am in every religion as the thread through the strings of pearls. Wherever thou see extraordinary power rising and purifying humanity, know thou that I am these” (Vivekananda, 2005, p.47). It is supposed Krishna incarnates to purify humanity and serve humankind. He is not assigned for the service of the Hindus only. The concept of the Lord, divinity and service to humanity lies in every religion. Vivekananda further emphasizes, “ The Brahma of the Hindus, the Ahura Mazda of the Zoroastrians, the Buddha of the Buddhist, the Jehovah of the Jews, the Father in the heaven of the Christians, give strength to you to carry out your noble ideas” (Shastri,1899, p.48). He presents common ground of

religious unity implying that the essence of every religion turns similar. He addresses to the mass, “But if anyone hopes that the unity will come by the triumph of any one of these religions and the destruction of other, to him I say: Brother, yours is an impossible hope” ( Shastri, 1899, p. 50). Rituals vary but the motif of every religion nearly matches. Mortimer Jerome Alders (1990) opines, “The form of worship differs from one religion to another in its specific rituals, ceremonials, and sacrifices. In all religions, the religious practices involve a separation of the sacred or holy . . . and the profane” (p.45). As holy intent of every religion seems common, it calls for unity of every religion. Rituals are constructed according to the convenience of people to represent their faith in manifested form.

The way of terming another religion as satanic and backward pushes people towards the labyrinth of never ending enmity. Holiness, purity and chastity are not the exclusive property of particular religion. The idea of considering one religion holy and another profane divides the world. The intention of religion is unity. There is strict adherence among conformists that their faith is confirmed. They express the fear of contamination of their pure faith by the contact to other faiths. Vivekananda answers to those people metaphorically, “The seed is put in the ground, the earth, and the air and the water are around. Does the seed become the earth, the water or the air? No, it becomes a plant; it develops after the law of its own growth” (Shastri, 1899, p. 50). The receptive character of the Hinduism has been termed as the celebration of plurality. He states, “Unity in variety is the plan of nature, and the Hindu has recognized it. Other religious groups lay down certain fixed dogmas and try to force society to adopt them” ( Shastri, 1899, p.45). Again, the rituals of the Hindus through the worshipping of images, which refers many centers, shows respect to plurality. Though Vivekananda (2005) has not indicated any religious groups in the speech, in his book *The East and the West*, he expresses his dissatisfaction to western tendency of encroaching others’ resources in the name of civilizing missions. He has termed westerners as having the nature of *Asura* and Indian as *Devas* bringing the reference of Purans. It describes *Devas* as, people having faith in their soul, in the God, and in the afterlife while *Asuras* give importance to this life and devotes themselves to enjoying this world and trying to have bodily comfort (Vivekananda, 2005, p.38). He assumes the doom of a nation if there is not any binding idea. The binding idea mainly germinates from religion and culture that develops as national character. When Mugals tried to attack on the national

character of India going against the common culture that caused their downfall. But the westerners were very clever. The British, before they came to India, made the thorough study of Indian culture and religion. They did not go against the culture directly. So, they could rule long time taking advantage of soft and welcoming nature of *Devas* in India. Vivekananda (2005) comments on western character as follows:

Maddened with the wine and newly acquired power; devoid of discrimination between rights and wrongs; fierce like wild beast, henpecked, lustful; drenched in liquor, having no idea of chastity and purity; nor of cleanly ways of habits; believing in matters only, with the civilization resting on matter and its various aggrandizement of self by exploiting others' countries, others' wealth, by force, trick and treachery; having no faith in the life hereafter, whose *Atman*(Self) is the body, whose whole life is only in the senses and creature comforts: Thus, to the Indians, the westerner is the demon (*Asura*). (p. 6-7)

Vivekananda vehemently opposes the *Asura* nature of the westerners who come carrying the Bible in their hands. He has not opposed the Bible but the *Arusa* nature of those carrying the Bible with the purpose of robbing resources. The researcher assimilates one African proverb, "When they came they had the Bible in their hands and we had lands, later they took our lands and we have the Bible in our hands."

Hegemonic attitude in the name of religion creates one powerful and another weak community. Pluralistic attitude in religion helps for respecting all despite variations. Westerners adopted hegemonic attitude polluting their very notion of holy ideas with infiltration of *Asura* nature. Vivekananda is critical to India as well. After the spread of Buddhism in India, there was competition to get 'Nirvana'. The Hindus compete with Buddhist that even increases the number of *sannyasis* within Hinduism who gave up craving to material achievement. Buddha spread the theory of causation of our karmic fruits. He encouraged people preaching that nothing was more desirable in life than *Mokshya*. Hinduism talks about four aims of life: *Artha* (Material possession), *Kama* (Pleasure and love), *Dharma* (Religious and moral duties) and *Mokshya* (redemption or spiritual release). The first three aims are for all people and the last one is for the person who wishes to get spiritual contentment. But the Buddhism focused on *Mokshya* without attaining the first three aims of life which made India fragile paving the ground for *Asura* to play upon the fragile nature of then India. Vivekananda (2005)

argues, “Without enjoyment, renunciation can never come; first enjoy then you can renounce. Otherwise, if the whole nation, all of sudden, takes up *sannyas*, it does not gain what it desires, but it loses what it had into the bargain” (p.12). The competition of the Hindus with Buddhist was counterproductive for the national character of India because it paved the way for *Asura* to impose their hegemony playing upon poverty, starvation, malady and backwardness of India. Ironically, India is highly fertile land and it is rich with natural resources. But the failure of India to adopt the four aims of life of the Hinduism created platform for the westerners to inter India and impose their hegemony. The policy of Lord Macaulay to establish schools for spreading their language and culture made India slowly dependent to the British. Vivekananda (2005) further argues, “We are courting our ruins in two ways-namely, we are throwing away what we have as our own, and laboring in vain to make others’ ideas and habits ours” (p.42). As it is said, “Master’s tool cannot dismantle his own mansion”, the British made their soft policies to suppress India through hegemony establishing their missionary schools especially in Calcutta and Darjeeling. Vivekananda (2005) further adds, “. . . India is still surviving because she has her own quota yet to give to the general store of the world civilization” (p.9). Still, India is the treasure house for *Vedic* knowledge, scholarly myths, yoga, meditation and *Ayurvedic* medicine. Western scholars like Max Muller and Josheph Campbell made India their home to excavate the *Vedic* and mythical asset of India.

The inevitable battles for the cause of humanity and for the protection of the weak are valorized in the Indian Philosophy. In Mahabharata, the victory of Pandavas over Kauravas shows the victory of righteousness. Similarly, the invasion over Ravana in lanka by Ram and his team seems for the right cause. Vivekananda is conscious that westerners might show the legendary battles of Mahabharata and Ramayana to present Indians as violent. He appeals to the westerners to read the Ramayana stating:

Ramchandra is a civilized Aryan King who fought with more civilized Ravana. The civilization of Lanka was rather higher than that of Ayodhya. Ramchandra’s alleys were backward monkeys. Ramchandra did not annex the kingdoms like Vali and Guhaka and races of Lanka are still enjoying their territories. ( Vivekananda, 2005, p.110).

In sharp contrast, he questions the westerners’ exploitation and extermination over the weak:



You have settled on their lands, and they are gone forever. What is the history of your America, Australia, New Zealand, Pacific island and South Africa? Where are those aboriginal races there today? They are all exterminated; you have killed them outright, as if they were wild beasts. It is only where you have not the power to do so and there only, that other nations are still alive. (Vivekananda, 2005, p.112)

The deep knowledge to Vivekananda about the Bible supports him to justify his claim that the westerners are going against the intention of the Bible creating their own deviated myths. The researcher does not explain about the knowledge of Vivekananda about the Bible. It seems the Bible appeals to spread the good message of the lord to awaken ignorant people from all over the world but the follower started religious convergence campaign and termed other as uncivilized. In the later phase, they started exploitation over the weak calling them ignorant.

Establishing the supremacy of one religious philosophy challenging the existence of others turns harmful. The feeling of rising to the supreme position defeating others turns against the idea of equality. Spiritual people believe that only God is supreme and we are here to fulfill the allotted tasks and none can be supreme though there are hierarchies of people. Vaneesa Cook (2019) cites C. Wright Mill, who states, “Spiritual socialists addressed the whole person as sacred agent of God . . . white supremacy, a glaring problem of the United States, has no place in the kingdom of God” (P. 4). The debate over the supremacy of God no longer remains provided that people accept that there might be different deities. Gandhi states, “I have broadened my Hinduism by loving other religions as my own” (Nicholas, 2014, P. 329). Respect to others’ philosophy does not pollute the philosophy one holds. Gandhi states, “I have advanced from tolerance to equal respect to all religions” (Nicholas, 2014, P. 324). Demonizing others’ religions and instigating them for conversion of religion does not give solution. It plants the seed of hatred. Vivekananda opines,

The Christians is not to become a Hindu or Buddhist, nor a Hindu or a Buddhist to become a Christian. But each must assimilate the spirit of the others and yet preserve his individuality and grow according to his own law of growth (Nicholas, 2014, p. 329).

Planned and schemed conversion of religion devalues the faiths of others. However, Individual choice of conversion cannot be opposed.

Spirituality should inculcate the feeling of pluralism. Spirituality emerges from consciousness. Consciousness has relation to *Brahma* that guides for righteousness. But sometimes the term ‘Spirituality’ can be used by the people to exploit others. Spirituality refers to inquiry to self for truth and justice. V. Kelly and M. Kovalson (1973) opine, “The spiritual life of society is not only the production of ideas, but also the functioning of social consciousness . . . interaction with individual consciousness” (p. 220). But the superiority ruins the spiritual alertness. Romain Rolland (2007) cites Vivekananda, who deplores the idea of universal philosophy, “Is there one universal philosophy? Not yet. Some will even draw the sword to compel others to believe as they do. This is not through wickedness, but through a particular disease of human brain called fanaticism” (p.12). As the belief system determines the culture of people, the culture can be made harmonious by allowing various thoughts and believes to flourish unless they are against human dignity.

Self-transformation by self- realization serves as a major motto of the Hinduism. The meeting of *Atma* to cosmic soul (*Brahma*) is the highest achievement of an individual. For the attainment of *Brahma* there are no readymade ways. There are no words or theories. One has to travel on his journey from an ordinary sensual existence to cosmic existence. Vivekananda (2005) asserts, “The Hindu religion does not consist in struggle and attempt to believe a certain doctrine or dogma, but in realizing- not believing, but in being and becoming” (p.41). For instance, *Guru-shishya* (teacher-students) tradition prepares students to realize himself under the supervision of teacher. It is not delivery from the teacher and acquisition of knowledge in the students. Similarly, it is not the accumulation of knowledge about yoga but realization of change after practicing yoga. In *Philosophies of India* under the title “The Meeting of East and West” Heinrich Zimmer (1992) asserts, “The chief aim of Indian thought is to unveil and integrate into consciousness . . . *atma* is forever changeless beyond time and veiling net of causality “(p.3). Human bodies are transitory but eternal *atma* dwells in bodies with the potentialities of further transformation. Zimmer(1992) opines, “We cannot borrow God. We must effect His new incarnation from within ourselves” (p.2). The potentiality of divine realization in oneself can be taken as the power of the Hinduism. Incarnation of godly power in human form comes from self realization and discovery, rather than from dogmatic beliefs. As people possess the ability of divine transformation, Hinduism is separated from particular cult and belief

system, it embraces pluralistic approach. Hinduism believes in self-realization, not in persuasion. In “The Pluralistic Style and Demands of Intercultural Rhetoric: Swami Vivekananda at the World Parliament of Religions” Scott R. Stroud (2018) opines, “Religion seems doubly problematic for persuasive endeavors seeking to be both pluralistic and persuasive” (p.248). When there is an intention of persuading other to convert and follow one religion, the plurality of the religion is dead. It becomes purposeful and kills self realization. Stroud (2018) cites Sally Gear, “Any act to persuade is an act of violence. The act of violence is in the intention to change another” (p. 264). Planned conversion of religion by means of monetary or other benefits is against the spirit of plurality of religion. The beauty lies in the celebration of diversity of religions, not in hegemonic mentality of religious conversion.

### **Methodology**

The research follows the qualitative research design accessing and assessing data from both primary and secondary sources. Selected books, scholarly journals, and internet sources are used. The study does not fall under the debate of various religious philosophies. Instead, it highlights an advocacy of Swami Vivekananda for religious plurality that shows the significance of respecting various faiths for universal peace. Critical, analytical and interpretative methods are used for analyzing data. The research uses the theoretical perspective regarding ‘Truth’ developed by Mortimer Jerome Alder (1990) from his book *Truth in Religion: Plurality of Religion and Unity of Truth*. For evaluating the perspective of Vivekananda against religious hegemony, the researcher takes Vivekananda’s book *The East and The West* (2005) the backdrop of analyzing his speech.

### **Analysis**

Hinduism is presented as *sanatan* faith for universal bliss practiced from immemorial time in Vivekananda’s speech. He establishes his credibility to stand as advocator of world peace. He presents India as the land for the idea of toleration. He thanks for the reception stating, “I thank you in the name of the most ancient order of monks in the world . . . the mother of religions . . . I am proud to belong to a religion which has taught the world both tolerance and universal acceptance”(Shastri, 1899, p.31). He portrays India as a place to shelter refugees on humanitarian grounds. He

brings historical background. He claims, “We have gathered in our bosom the purest remnants of Israelites, remnants which come to southern India and took refuge with us in the very year in which their holy temple was shattered to pieces by Roman Tyranny” (Shastri, 1899, p. 31). Shattering temple indicates the hole in the communal fabric of the faith. Spiritual wound caused by the demolition of holy temple becomes repugnant and it begets revenge. The vicious cycle of revenge pushes to terrorism. Human casualties can be forgiven earlier than the destruction of religious and national heritages. The attack in Pentagon is an attack in the very nose of the USA administration. To assimilate it hypothetically, if any invader attack religious site- Pashupatinath or administrative building- Singha Durbar, wound remains for hundreds years. How far the message delivered by Vivekananda applies in the present India seems one of the concerns. The debate over Babri Mouque and Ram temple in Ayodhya teases the holy ideas presented by Vivekananda but the researcher does not study the impacts of his message at present in this research, rather focuses on his vision to challenge the western episteme to view Indians as backward and uncivilized in the contemporary times. The historical references of sheltering the persecuted and refugees of another religious community and nation by India justifies that India took all people of the world under universal brotherhood in the past influenced by *Sanatan* religion.

Various religious practices in the world are taken as the different routes to reach the same destination. People may have their own choice of taste of food but the ultimate purpose of taking food is to supply calories. People may argue that the choice of taste can be different but the Truth does not have choices. In *Truth in Religion: Plurality of Religions and the Unity of Truth*. Mortimer Jerome Alders(1990) argues:

Truths of religious belief and the truths of science or philosophy are not truths of the same kind. The former are truths of the imagination and are poetically true; the latter are truths of reason and are logically and factually true. Therefore, they cannot come into conflict or be incompatible. (p. 102-103)

Faiths are not to be proved by any facts and logics. They are for creating ethics in a society. The truth of morality cannot be measured in figures and facts. There might be various righteous ways of establishing morality in a society. Whatever the way is; if morality, order and peace are intact, that is the truth. Vivekananda mentions the hymn which he used to repeat since his boyhood that goes like this, “As the different

streams have their sources in different places and mingle their water in the sea, O Lord, so the different paths which men take through different tendencies . . . all lead to thee” (Shastri, 1990, p.32). The courses can be long or short, zigzagged or straight. But the destination is the same. Vivekananda claims that Hinduism is open to people who aspire to meet the God following any righteous way. He cites one excerpt from *the Gita*, “Whoever comes to me, through whatever form I reach him, they are all struggling through path that in the end always lead to me” ( Shastri, 1990, p.32). Forgetting the fact that the destination is the same, people involve in sectarianism and fanaticism causing bloodshed.

Narrow- minded attachment to one’s faith and negation to others’ faith ridicules the faith itself one holds. Myopic view resulted by superiority complex does not value others’ space. Vivekananda has explicated one metaphor of frogs. The fable goes like this:

There was a frog in a pond who thought that his pond was the whole universe because he could not go to other side of the pond after several leaps. He thought that he possessed the greatest pond. One day another frog came to the pond from the sea. The former asks a question to the latter whether the latter has as big pond as he has or not. Both claimed that their water mass was bigger and started to quarrel (Shastri, 1990, p.48-49).

Vivekananda states, “I am a Hindu and I have a little well and thinking that the whole world is my little well. The Christian sits in his little well and the whole well is his world. The Mohammad sits in his little well and thinks that is the whole world” (Shastri, 1990, p.49). When one’s mind is filled with preoccupied baggage of faith, one cannot have space to value other’s faith. The trend of valorizing one’s faith and demonizing others’ turns nefarious. It threatens tolerance and conciliation creating rifts in relationship. If the metaphor of the fable is taken just as a myth and attacked it claiming a frog does not speak. It turns as a defamation to sea of faith and pollutes the order of a society. Myths carry the essence metaphorically because they make abstract ideas concrete and understandable to common people. Libel to myths, mixing it with scientific evidences, invites disorder crushing the truth of morality. However, the myths that block human progress should be dismantled with collective consciousness for common benefits and prosperity. Human consciousness helps to segregate valuable

faiths and baneful dogmas.

Idol worship of the Hindus is often attacked as superstitious and ridiculous. Vivekananda argues that complex ideas come in images and symbols. If images and symbols serve as physical manifestation of invisible ideas, it is not wrong to regard them as a way to reach to the ultimate truth. Vivekananda urges, “The Hindus have associated the ideas of holiness, purity, omnipresence, and all other such ideas with different forms’ ( Shastri, 1990, p.44). We cannot think without images. Images help to climb the ladder of our understanding of higher level of realization. The journey of life serves for the journey to divinity. Vivekananda seems against the idea of devoting whole life to the idols and never rising higher. He emphasizes on achieving divinity through realization and takes images as the supporters in the preliminary stage of realization. Though the trend of worshipping images is widely practiced in Hinduism, other religions that are against the idea of idol worship are also not free from the concept of realizing invisible through images. Vivekananda debates:

Superstition is the enemy of man, but bigotry is worse. Why a Christian does go to Church? Why is the cross holy? Why is the face turned towards the sky in prayer? My brethren, we no more think about anything without a material image . . . material worship is the lowest stage, struggling to rise high, mental prayer is the next stage, but the highest stage is when the Lord has been realized . . . “the child is a father of a man”. Would it be right for the old man to say that childhood is a sin? Nor is image worship compulsory in Hinduism. If a man can realize his divine nature most easily with the help of an image, would it be right to call it a sin? . . . to the Hindu, man is travelling not from error to truth. . . but from lower to higher truth. (Shastri, 1990, p.44- 45)

As a child learns letters with images, a common man can soar to higher level of understanding learning from images in the beginning. Moreover, worship to various regalia or images like images of gods or goddess, animals, plants, rivers, mountains etcetera convey the message that god may present in various forms. It inspires to live in harmony with nature taking all living beings and non-living things as the elements of our survival. It negates anthropocentric view but respects pluralistic approach of taking all living beings and non-living things as components of life.

## Conclusion

Vivekananda points out plurality of religions as a way of universal peace and order. He assumes Hinduism to be the mother of religions and pioneer in plurality both in form and content. The worshipping of multiple gods and images in the Hinduism manifests plurality. Reincarnation of gods as different *avatars* highlights the plural existence of gods in course of time. Obsession to one's faith and hatred to others' faith cause bigotry and fanaticism. This invites the vicious circle of revenge making the world insecure. Hegemonic attitude of any religious group cannot be tolerated. Resistance to hegemony might be termed as terrorism by the powerful side and the real terrorism begins. Triumph over one religious community by another is neither desirable nor possible. Historical exploitation and extermination of the weak in 'Civilizing Missions' deserves criticism. It must be discouraged. Vivekananda defends the Indian Philosophy against the backdrop of ethnic cleansing, and shattering of holy places by the powerful. His ideas are relevant in today's sectarianism world of religion for keeping peace and harmony of people intact.

## References

- Alder, M. J. (1990). *Truth in religion: the plurality of religions and the unity of truth*. Collier Books Macmillan Publishing Company.
- Cook, V. (2019). *Spiritual socialists: religion and American left*. University of Pennsylvania.
- Nicholas, F. G. (2009, April). "Gandhi, deep religious pluralism and multiculturalism". *Philosophy East and West*. University of Hawai'i Press. vol. 64, no. 2, pp 319-339. DOI: 10.1353/pew.2014.0026
- Kelle, V. & Kovalson M. (1973). *Historical materialism: an outline of Marxist theory of society*. Progress Publishers.
- Stround, S. R. (2018) "The pluralistic style and the demands of intercultural rhetoric: Swami Vivekananda at the World's parliament of Religions." *Advances in the history of rhetoric*. Routledge .vol. 21, no. 3, pp 247-270. Retrieved from <https://doi.org/10.1080/15362426.2018.1526545>
- Vivekananda, S. (1899). *Speeches and writings of Swami Vivekananda*, compiled by Swubramanyam Shastri, G.A. Natesan & Co. . . . *The east and the west* (2005). Advaita Ashrama.
- Zimmer, H. (1992) *Philosophies of India*. Routledge and Kegan Paul.

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